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Organic Agriculture in Uttarākhand -  
Unfolding a local Field of Practice

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## Contents

<b>1. Introduction: Mapping the Research Objectives</b>	<b>5</b>
<b>1.1 The Global Organic</b>	<b>12</b>
<b>1.2 Sustainable Development: The Emergence of a New Paradigm</b>	<b>14</b>
<b>1.2.1 Discourses on Global Food Security</b>	<b>15</b>
<b>1.2.2 Ecologically Sensitive Development</b>	<b>20</b>
<b>1.3 Approaching Organic Agriculture: Multidirectional Dynamics</b>	<b>23</b>
<b>1.4 Approaching Organic Agriculture: Interactive Fields of Practice</b>	<b>24</b>
<b>1.5 Approaching Organic Agriculture: Ethnological Grounding</b>	<b>26</b>
<b>1.6 Approaching Organic Agriculture: The Individual Farmer</b>	<b>28</b>
<b>2. The Indian Scenario: Casting The Context</b>	<b>29</b>
<b>2.1 The Agricultural Sector, Development, Food Security and Poverty</b>	<b>29</b>
<b>2.2 The Green Revolution: Main Concepts and Food Self-Sufficiency</b>	<b>38</b>
<b>2.2.1 The Green Revolution: Ecological threats</b>	<b>42</b>
<b>2.2.2 The Green Revolution: Land &amp; Water</b>	<b>43</b>
<b>2.2.3 The Green Revolution: Chemical Inputs</b>	<b>43</b>
<b>2.3 Political Shortcomings</b>	<b>51</b>
<b>3. Organic India</b>	<b>57</b>
<b>3.1 Zooming Into the Locality</b>	<b>57</b>
<b>3.2 Organic Uttarākhand</b>	<b>60</b>
<b>3.2.1 Saur Village: Vertical Topography &amp; Fragmentation</b>	<b>66</b>
<b>3.2.2 Saur Village: Inaccessibility &amp; Subsistence Agriculture</b>	<b>69</b>
<b>3.2.3 Saur Village: The Multi-Component Farming System</b>	<b>74</b>
<b>3.2.4 Saur Village: People</b>	<b>77</b>
<b>3.2.5 Saur Village: Marginality</b>	<b>80</b>

<b>4. Access to the Field I</b>	<b>87</b>
<b>4.1 Navdanya</b>	<b>87</b>
<b>4.2 Unpacking Navdanya: History &amp; Ideology</b>	<b>90</b>
<b>4.2.1 Unpacking Navdanya: Distributing Knowledge &amp; Seed Material</b>	<b>96</b>
<b>4.2.2 Unpacking Navdanya: Direct Marketing &amp; Certification</b>	<b>98</b>
<b>4.2.3 Unpacking Navdanya: Transport &amp; Womens' Groups</b>	<b>100</b>
<b>5. Access to the Field II</b>	<b>103</b>
<b>5.1 Farmers</b>	<b>103</b>
<b>5.2 The Use of Chemical Inputs</b>	<b>106</b>
<b>5.3 Strategies of Comprehensive Health Management: The Soil</b>	<b>111</b>
<b>5.3.1 Strategies of Comprehensive Health Management: The Body</b>	<b>115</b>
<b>5.3.2 Strategies of Comprehensive Health Management: The Livestock</b>	<b>118</b>
<b>5.3.3 Strategies of Comprehensive Health Management: The Potential     for Local Self-Empowerment</b>	<b>122</b>
<b>6. Access to the Field III</b>	<b>126</b>
<b>6.1 Agency and the Individual Farmer</b>	<b>126</b>
<b>6.2 The Individual &amp; the Social Sphere: An Attempt of Meaningful Interweaving</b>	<b>133</b>
<b>6.2.1 Social Disposition and Individual Influence: The Habitus</b>	<b>135</b>
<b>6.2.2 Social Action and Individual Potentialities: The Field</b>	<b>137</b>
<b>6.2.3 A Perspective of Relationality: Practice and Tacit Knowledge</b>	<b>138</b>
<b>7. Following Organic Agriculture</b>	<b>142</b>
<b>7.1 Individual Farmer's Capability I</b>	<b>142</b>
<b>7.2 The Adoption of Organic Agriculture: Theoretical Impulses</b>	<b>144</b>
<b>7.3 The Adoption of Organic Agriculture: An Investigation</b>	<b>147</b>
<b>7.4 Individual Farmers' Role: Key Factors for Intracommunal Transfer</b>	<b>151</b>
<b>7.5 The Diffusion of Organic Agriculture: Theoretical Impulses</b>	<b>152</b>
<b>7.6 The Diffusion of Organic Agriculture: An Investigation</b>	<b>154</b>
<b>7.7 Individual Farmers' Role: Dynamically Unfolding Activities</b>	<b>160</b>

<b>8. Organic Knowledge</b>	<b>163</b>
<b>8.1 Knowledge on Organic Management Practices</b>	<b>163</b>
<b>8.2 The Dynamics of Knowledge Production: Heterogeneity, Contextuality, Mobility</b>	<b>166</b>
<b>8.3 Navdanya's Organic Knowledge</b>	<b>170</b>
<b>8.3.1 Zooming Closer on Navdanya's Organic Knowledge: Interview I</b>	<b>170</b>
<b>8.3.2 Zooming Closer on Navdanya's Organic Knowledge: Interview II</b>	<b>172</b>
<b>8.3.3 Zooming Closer on Navdanya's Organic Knowledge: Interview III</b>	<b>175</b>
<b>8.3.4 Multilayeredness and Individual Creativity</b>	<b>177</b>
<b>8.3.5 A Combinational Concept?</b>	<b>178</b>
<b>8.4 Approaching Knowledge: A brief Outline</b>	<b>179</b>
<b>8.4.1 Local Knowledge</b>	<b>181</b>
<b>8.4.2 Modern Scientific Knowledge</b>	<b>185</b>
<b>8.4.3 The Relation Between Local Knowledge and Modern Scientific Knowledge</b>	<b>188</b>
<b>8.5 Towards an Interstitial Knowledge Space: Broadening</b>	<b>190</b>
<b>8.6 Towards a New Domain of Knowledge: Reconfiguration</b>	<b>194</b>
<b>8.7 The Fluidity of Organic Management Practices</b>	<b>198</b>
<b>9. Following Organic Management Practices</b>	<b>201</b>
<b>9.1 Individual Farmer's Capability II</b>	<b>201</b>
<b>9.2 The Transformation of Organic Management Practices: Theoretical Impulses</b>	<b>204</b>
<b>9.3 Simplified Modifications: The Use of Earthworms and Gomutr</b>	<b>207</b>
<b>9.4 The Fluidity of Organic Management Practices &amp; Farmers' Individual Capability</b>	<b>210</b>
<b>9.4.1 Case Study I</b>	<b>212</b>
<b>9.4.2 Case Study II</b>	<b>215</b>
<b>9.4.3 Case Study III</b>	<b>219</b>
<b>9.5 The True Potential</b>	<b>224</b>

<b>10. Conclusion</b>	<b>229</b>
<b>10.1 Looking Back: From Global Discourses to Farmers' Agency</b>	<b>229</b>
<b>10.2 The Role of Navdanya</b>	<b>235</b>
<b>10.3 The Scope of Organic Agriculture I: Reducing Vulnerability</b>	<b>236</b>
<b>10.4 The Scope of Organic Agriculture II: Strengthening Localities</b>	<b>238</b>
<b>10.5 The Scope of Organic Agriculture III: Considering People</b>	<b>240</b>
<b>10.6 The Scope of Organic Agriculture IV: Building on Local Potential</b>	<b>243</b>
<b>10.7 Looking Forward: Further Research</b>	<b>245</b>
Methodological Appendix I: Interview Excerpts	249
Methodological Appendix II: Pictures	254
Abbreviations	264
Bibliography	266
Online Sources	287

## 1. Introduction: Mapping the Research Objectives

Organic agriculture has long since become global in scope, thus serving a wide range of different interests: To consumers it promises superior quality, better health and a high level of ethics in times of prevailing, wide-spread food scandals and global ecological crises; producers calculate on participation, competitiveness and higher incomes; economic agents on various levels seek to further expand their market shares through forging economic relations and exercising influence on food price politics; and both international development agencies as well as non-governmental organizations increasingly aim at an actor-centered strengthening of social participation and sustainable development from below, thus hoping to find the key to urgent social and environmental problems.

At first glance, therefore, the most prominent aspect of the concept of organic agriculture is its multifacetedness. Here, at the one end of the spectrum, the label 'organic' is used as an internationally applied administrative tool which is primarily designed to ultimately harmonize economic spheres. Thus, it can be used to produce uniformity across time and space and to create similarity and homogeneity even among producers, consumers and organizations far away from each other. Yet, whilst organic has the potential to bring together widely different spheres and to 'level' individual aspects, at the other end of the spectrum, it is commonly referred to as strictly bound to particular socio-ecological settings and local people with their specific knowledge and practices. Therefore, against this broad background, the term organic is laden with multiple meanings and is charged with multilayered connotations and complex representations, objectives and opinions. In this light, to suggest that the socio-political relations of food production 'are always more significant than the food item itself might reveal'<sup>1</sup>, substantiates the perspective that, in times of globalized food systems, universal standardization and international transnational public networks, 'food becomes entangled in complex webs of political significance, thus becoming charged with complex and profound histories and implications'<sup>2</sup>.

Organic foodstuff and food production has indeed become the topic of numerous political discussions on both global and local levels where it usually causes great controversy amongst different interest groups. Given the sheer extent and diversity of those interests, their associated objectives and respective strategies, it goes without saying that the subject of organic agriculture is indeed not merely politicized but also frequently instrumentalized by all kinds of groups and people, ranging from economists and marketing experts to development planners and social organizations, from farmers associations to ecological pressure groups and feminist activists. As in

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1 Pretty, J. (ed.) 2008: 78

2 See above

all cases of instrumentalization here also, the usual and often premature opinion on the very concept of organic agriculture presumes that it was diametrically opposed to its conventional 'antagonistic' counterpart. While commercial agriculture is standardized, organic cultivation is seen to be locally adapted; while the former is responsible for the rapid depletion of natural resources and all kinds of natural calamities, the latter is said to work on the principle of sustainability; while conventional farming is science-based, many maintain that organic farming largely relies on local knowledge. So frequently does one encounter those polarizations - even outside the public or popular sphere - that it does indeed make sense to talk about strong asymmetries between the two concepts. It seems to be the case that the designation 'organic' is almost always incomplete without its 'commercial' or 'conventional' counterpart and that it is only through the - implicit or explicit - reference to the latter that organic products can function as a standardized promise of proximity and accountability in a sphere of increasing global opacity, fragmentation and uncertainty<sup>3</sup>. This interdependency shows common features with anthropology's early epistemological approaches where the classical route to understanding 'the self' was through the observation and analysis of 'the other' and where, all too often, the anthropological other was 'exploited' as an epistemological other rather than an 'honest' description<sup>4</sup>. It seems that in much the same way, organic also needs its counterpart - its other - in order to function along similar lines where the accuracy of the subject towards the other is often abandoned in favor of clear demarcations and instrumentalized opinions about 'the self'. In this respect, when taking on an alternative character, 'organic' commonly carries a polarized notion of option and choice and is often associated with some kind of political, social or ecological resistance. Therefore, the oft-repeated, powerful notion that organic agriculture allowed some kind of 'alternative' development already includes in itself the implicit assumption of some kind of contrary concept. However, it quickly becomes clear that, while drawing a clear dividing line between organic and conventional agriculture may appear rather easy in theory, it is quite complex in practice. It is true that *both* commercial and organic agricultural concepts and food products are entangled within complex and highly contested fields of global and political significance, thus frequently being subjected to mechanisms of instrumentalization and polarization. Although conventional agricultural products are already at a very high level of standardization, organic ones with governments and certification agencies all around the world are fast catching up with levels of uniformity.

Closely related to this issue is the fact that the conversion to organic cultivation many times is seen as an instrument of efficiently exploiting niche markets and thus as a mere means of making money

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3 See for example: Welsch, W. 1997.

4 See Sarukkai, S. 1997.

and generating economic growth. It is in the presence of this very prominent view that other perspectives on the potential benefits of organic agriculture fade away. Moreover, it is frequently argued that the main difference between conventional and organic cultivation is precisely in their practical applications: While the former depended on very uniform requirements which were in turn based on modes of modern scientific thinking and the massive input of fossil resources and chemical substances, the latter was operated largely on traditional, eco-friendly techniques and indigenous knowledge. However, as Vereesh remarks, 'organic farming of today is not traditional agriculture. The principles governing organic farming are more scientific than even the principles followed in modern agriculture.'<sup>5</sup>

The statement points out the futility of generally associating organic agricultural practices with a romanticized notion of tradition, knowledge and culture. On the contrary, it is often the case that organic farmers are employing quite elaborate and complex *modi operandi* which, in the methodical character of their theoretical substructure, are in no way inferior to the principles and techniques that are applied in contexts of conventional agriculture.

With this in mind, the question arises of what kind of overall theoretical access point and methodological approach should be adopted in order to be able to carry out a comprehensive investigation, corresponding with the complexity of the matter. With the essential attributes and chief constituents of organic agriculture not being uniform and monolithic but rather flexible, multifaceted and entangled within far-reaching webs of political significance, the focus of investigation must as well be quite comprehensive. While the above mentioned examples clearly reveal that organic agriculture has the potential to become a magic bullet within international debates on human development and macroeconomic considerations, at the same time this situation points to its extensive scope for imagining, politicizing, ideologization and even instrumentalization. In this light, 'the multiplication of relevant actors in development (...), the differences even within these (...) groups, and the divergencies in the processes of development that their goals and strategies introduce forcefully remind us of the impossibility of looking at development through a singularizing lens'<sup>6</sup>. Moreover, with organic agriculture's key principles - ecological sustainability, cultural sensitivity and the holistic management of local resources - all decisively pointing towards locality and particularity, the 'web of entanglement' extends over vast stretches of time and space, spanning both the macro- and the microlevel. Against this background, it may very well be argued that

'(...) where earlier discussions of the local saw it as the refuge of the particular, the

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5 Vereesh, G.K. 1998.

6 Sivaramakrishnan, K. & Agrawal, A. (eds.). 2003: 42



specific, or the different, we no longer view the local as a site of purity, where difference emerges to haunt tales of global uniformity and homogenization. Localities exist not because of something innate within a particular site in space or inherent to a specific geographical point. Rather, discrete points in an abstract spatial grid have little meaning in themselves, and spaces become localities because of how they are situated in particular networks with other people, places, and social entities. Localities are produced as nodes in the flows of people and ideas, and are thoroughly socially constructed.<sup>7</sup>

These considerations can make an essential contribution to the development of a mental image where particular constellations of various actors and their different approaches and objectives give rise to actual and distinct configurations of organic agriculture. Thus, any discussion on the subject - even at its very conceptual level - reveals a wide discursive field which is not only pervaded by strong and far-reaching tensions and inconsistencies, but is also invested with highly diverse and localized sets of meanings, practices and interests that have the potential to take on quite distinct forms. Therefore, rather than understanding organic as a clearly definable, homogenous concept (in an 'essentialist' sense), it must be understood as a highly discursive process where mechanisms of internalization and relocalization are constantly being employed against the background of changing global conditions and local frameworks. It is therefore necessary to avoid a non-productive juxtaposition of traditional farming and modern agribusiness on the one hand and the romanticized and anachronistic projection of modern ecological approaches on long-established, local agricultural methods on the other. Rather, due to its fundamental mutability, organic agriculture cannot be considered a merely reactive concept and the question arises to what extent organic farming might be a 'modern' construct itself. Since it must rather be seen as dynamically evolving *around* various situations and conditions, organic agriculture should thus not be interpreted as monolithic or homophonic but as a highly processual and dynamic concept where, due to the various constellations and interactions between actors and their interests, opinions and objectives that are constantly at work on its various levels, the latter become both agents of and subjects to historical change<sup>8</sup>.

Especially the Indian agricultural situation and its recently-emerging organic sector are key examples for the complex issue discussed above. Despite major achievements in the field of overall output of food grains over the last four decades, India's enormous problems concerning high food insecurity, widespread poverty and the further marginalization of large parts of its population are

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7 Sivaramakrishnan, K. & Agrawal, A. (eds.). 2003: 12

8 See also: Bublitz, H. 1999

still far from being solved. It is against this context that organic agriculture over the last few years has emerged as a highly politicized issue and thus has brought together widely different spheres, discourses, localities and people, and the question of whether organic agriculture might hold the urgently needed key to efficiently addressing the country's pressing rural development issues, is moving ever more into the spotlight of various agendas. It is usually the fundamental nexus between environmental and socio-economic factors within the relevant development scenarios, which is of great importance to the problem. Since persistent social injustice, malnutrition and poverty are closely interwoven with the environmental issues of the country's marginal and resource-poor farming households, organic agriculture many times is perceived to be at the heart of an 'alternative' development discourse that seeks to overcome the reductionist view of development as growth and material progress. Against this background, what is usually expected from the promotion of organic agricultural production, is the urgently needed, long overdue realization of a socially and environmentally accountable and sustainable approach to bottom-up development that is capable of genuinely following the frequently alleged yet scarcely deployed 'essential truth that *people* must be at the centre of all development'<sup>9</sup>.

Following the considerations regarding the interconnectedness between the spheres of individual farmers, farming households and rural communities and wider, supralocal, national and even global spheres of influence raised above, the present research aims at investigating particular localized configurations of organic agriculture resulting from the multiple dynamics between those spheres. To this end, over the course of this study, a particular, clearly delineated marginal agricultural scenario in which organic farming has come to play a significant role, will be chosen and explored in detail. Thus, through developing some kind of 'laboratory situation' within a clearly demarcated socio-environmental space, it is attempted to comprehensively reveal and understand the relevance of multidimensional flows and movements of ideologies, ideas, information and innovations, the sum of which is ultimately responsible for the generation of localized fields of practice where, eventually, particular configurations of organic agriculture are being established and put into practice. It will be shown in detail how organic agriculture 'unfolds' in view of a number of crucial determinants concerning its generation, dissemination, implementation and transformation. Here, one particularly poignant question concerns the degree to which the re-organization of traditional agricultural methods contributes to the creative intermediation between different spheres and forms of knowledge – an issue which also contains the revealing and highlighting of the initial impulses and relevance of local innovation.

Basing the investigation of these processes and developments to a large extent on individual

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<sup>9</sup> United Nations Development Programme. 1990: 3. Emphasis added

farmers' spheres of local life as the smallest yet most significant point of focus allows not only for the visualization of potential multidirectionalities and interdynamics that are hardly ever considered. Furthermore, this highly actor-centered approach will allow for the detailed investigation of how the generation, dissemination, adoption, implementation and transformation of organic agriculture is subject to the combined effects of multidimensional flows between the global and the local level as its utmost borders, thus allowing for the making visible of key factors that become active at different stages of the process from a farmer's perspective. This is intended to provide the researcher with the opportunity to get to the bottom of the individual potential of organic farming and to point out how individual farmers' innovative contributions might play a decisive role in the emergence of sometimes quite powerful local configurations of organic agriculture which usually go unnoticed and unconsidered – a perspective which has long been one of ethnography's particular, unfortunately all too often underestimated strengths and accomplishments. Moreover, the proposed analysis, through providing contextual information on the macro-economical and -political aspects of organic agriculture as well as micro-level ethnographic material, seeks to comprehensively unfold the reciprocal interconnection between sometimes widely different spheres of influence, thus investigating particular local configurations of organic agriculture against a wider background of ultimately global dimension. This is another reason why qualitative anthropological investigation can make a substantial contribution to the detailed and meaningful analysis of the role of individuals, groups, communities, governments, supranational bodies and other stakeholders on this subject.

Through essentially grounding the following analysis on locality, particularity and individuality, the methodological orientation of the research is particularly suitable for addressing the potential of organic agriculture with regard to rural human development since all major current agendas – at least on a conceptual basis - are premised on a strongly microlevel-oriented international development paradigm. This includes the promotion of highly actor-centered approaches, pointing at and calling for the imperative need to fundamentally build on local populations' cultural expertise where '(...) local practices and the knowledge and values they entail are seen as an essential basis for true emancipation and flourishing. Development which ignores this basis is seen as an obstacle, as the problem rather than the solution'<sup>10</sup>. The question of whether the promotion of organic agriculture in the Indian context could lead to an increase in rural households' and communities' fundamental ability to access and control local resources and assets as well as livelihood options and strategies is thus directly linked to the attempt to provide spaces for the voices and practices of the country's rural populations.

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10 Appfel-Marglin, F. 2011: 10

In this light, the question arises whether organic farming in India can really live up to its promise of actor-oriented, bottom-up decision making and a participatory development approach where local farmers are encouraged to not only resort to their very own reservoir of agricultural resources and methods but also to actively share information and take part in their own 'empowerment'. Based on the much acclaimed fundamental orientation towards the inclusion of locality - be it resources, genetic material, livelihood strategies or local knowledge on agricultural techniques - does it have the potential to really make a fruitful contribution to the overall situation of India's marginal farmers in that it goes beyond the prospect of merely providing marginal households with more purchasing power? Is it rather going to provide for a broader and more sustainable basis of rural livelihood, where the crucial linkage between ecological and socio-economic discourses is seriously taken into account on the basis of reinforcing and stabilizing India's rural farmers and their communities by means of culturally sensitive empowerment from below? And could the promotion of organic agriculture maybe even lead to the eventual realization of an essentially freedom-centered view of development as an integrated process of the expansion of substantive freedoms that connect with one another where special attention is paid to the 'expansion of the "capabilities" of persons to lead the kind of lives they value - and have reason to value' and where it is considered a crucial matter that 'greater freedom enhances the ability of people to help themselves and also to influence the world'<sup>11</sup>?

So therefore, both the scientific merit as well as the practical relevance of this study are based on a high degree of correlation between theoretical analysis and empirical research, promising a valuable approach to sustainable development while at the same time making an important contribution to overcoming the misplaced contrasting of traditional and modern forms of agriculture which are still all too prevalent.

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11 Sen, A. K. 2000: 18

## 1.1 The Global Organic

'A wider understanding of the agricultural context requires the study between agriculture, the global environment and social systems given that agricultural development results from the complex interaction of a multitude of factors.'

(Altieri, M.A. 1995: 1)

Organic is one of the most prominent buzzwords of the new millennium – and a huge international market which topped the 50-billion-US-dollar limit for the first time in 2008. Even though market growth has since then somewhat slowed down and is no longer showing double-digit expansion, revenues from organic products are still substantially increasing. At the very latest since the alignment of U.S. and EU standards for organic production in February 2012 at the BioFach, the world's largest organic fair in Nürnberg, Germany, it has become clear that 'organic' has come to play an important role in global economic developments. Since, in June 1999, international guidelines on organically produced food products were approved by the Codex Alimentarius Commission – an intergovernmental body with more than 180 members - the 'Codex Alimentarius'<sup>12</sup> today has become a major global reference point for national food control agencies, organic food producers and processors, consumers and the international organic food trade. The common understanding of organic agriculture on the global level has been put down explicitly in the Codex's section GL 32-1999<sup>13</sup> which defines 'organic' as a labeling term that denotes products that have been produced in accordance with certain standards during food production, handling, processing and marketing stages, and are certified by a duly constituted certification body or authority. Above all, it is the standards for organic agricultural production which the Codex lays down in detail, underlining in particular the promotion of sustainability and agroecosystem health through minimizing the use of external inputs such as synthetic fertilizers and pesticides. Rather, through the use of production management practices that take into account specific regional conditions and the particular requirements of locally adapted systems, organic agriculture is aimed at promoting productivity and health of 'interdependent communities of soil life, plants, animals

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12 The Codex Alimentarius was developed by the FAO and the WHO in order to serve as an instrument for consumer protection and the facilitation of trade. Its roots lie in the early 1960s when, due to the growing calls for minimum food standards and related questions, the Eleventh Session of the FAO Conference passed a resolution to set up the Codex Alimentarius Commission. Since then, the Codex has been the product of a long evolutionary process involving wide cross-sections of the global community. While the Codex Alimentarius Commission approved organic plant production guidelines in June 1999, guidelines concerning animal production were added to the Codex not before July 2001.

See: World Health Organization & Food and Agriculture Organization of the United Nations. 2006. *Understanding the Codex Alimentarius*. Rome: The Secretariat of the Joint FAO/WHO Food Standards Programme <ftp://ftp.fao.org/docrep/fao/010/a0850e/a0850e00.pdf> (retrieved on 23.02.2013)

13 This section is headed 'Guidelines for the Production, Processing, Labelling and Marketing of organically produced foods'. See: [http://www.codexalimentarius.net/download/standards/360/cxg\\_032e.pdf](http://www.codexalimentarius.net/download/standards/360/cxg_032e.pdf) (retrieved on 23.02.2013)

and people<sup>14</sup>. This overall goal is to be pursued through enhancing soil biological activity and biological cycles and thus increasing long-term soil fertility, biodiversity and agro-ecological stability within the whole system. The Codex speaks of organic agriculture explicitly as 'a holistic production management system'<sup>15</sup> and it is this primary focus on socially and ecologically sensitive procedural methods that makes the organic label a process claim rather than a product claim. Nevertheless, at the same time it is a global standard and – as the impressive surges in international sales performance clearly show – becoming increasingly influential in today's globalized world. Organic has become a strong element in today's global order and has rapidly developed into a potentially powerful instrument of influence and control which can be seen as part of a newly evolved 'neo-voluntarism'<sup>16</sup>. In this light, it is another worldwide umbrella organization, currently encompassing more than 750 member organizations in 116 countries, that has substantial influence on present international regulations and official standards on organic agriculture, namely the 'International Federation of Organic Agriculture Movements' (IFOAM)<sup>17</sup>. Especially in the field of assessment and accreditation, IFOAM's standards and accreditation criteria have been widely used as a reference by standard-setters in national and international arenas and by now have come to be generally respected as the international guideline from which national standards and inspection systems may be built. Here, above all, it is the so-called 'IFOAM Norms' that establish the requirements for certification bodies seeking IFOAM accreditation<sup>18</sup> and that have practically found universal acceptance. Thus, the General Assembly of IFOAM, during its last session period in June 2008 in Vignola, Italy, gave the following, much used and often cited definition of organic agriculture:

Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved.<sup>19</sup>

Interestingly and also quite apparently, there clearly emerges some kind of dilemma here: While the

14 FAO website: <http://www.fao.org/agriculture/crops/core-themes/theme/spi/soil-biodiversity/agriculture-and-soil-biodiversity/agro-ecological-farming-options-and-opportunities/organic-agriculture/en/> (retrieved on 19.02.2013)

15 Codex Alimentarius, section GL 32-1999: [http://www.codexalimentarius.net/download/standards/360/cxg\\_032e.pdf](http://www.codexalimentarius.net/download/standards/360/cxg_032e.pdf) (retrieved on 19.02.2013)

16 Streeck, W. 1996.

17 Founded in 1972, the organization has since played a significant part in shaping the common understanding and definition of organic agriculture on the global level. Already in 1980, through elaborating the first international standards, IFOAM laid the basis for many of today's regulations and criteria on organic agriculture.

18 The IFOAM Norms consist of two pillars: The 'IFOAM Basic Standards for Organic Production and Processing' (IBS) and the 'IFOAM Accreditation Criteria for Certification of Organic Production and Processing' (IAC). [http://www.ifoam.org/about\\_ifoam/standards/norms.html](http://www.ifoam.org/about_ifoam/standards/norms.html) (retrieved on 11.03.2012)

19 IFOAM. Website: [http://www.ifoam.org/growing\\_organic/definitions/doa/index.html](http://www.ifoam.org/growing_organic/definitions/doa/index.html) (retrieved on 11.03.2012)

above mentioned endeavors of establishing the essential attributes and chief constituents of organic agriculture are all decisively pointing towards organic farming's inbuilt focus on locality and particularity, they at the same time are trying to capture and standardize its functional principles. But how can one achieve a global standard of a product - or rather a production management system - which is essentially determined by the use of local inputs and specific regional conditions, designed through and for particular requirements of locally adapted ecological and social systems and which is largely based on the knowledge and skills of local populations. In short: While the label 'organic' is widely accepted to be strongly bound to a particular environment and particular people and their own knowledge and traditions, at the same time attempts are increasingly made to turn it into a globally marketable commodity, thus of course stripping it off its essentially diverse character. Thus, while industrialized countries have long started to intensively skim the economic advantages of organic production and are now at a point of signing 'historic declarations'<sup>20</sup> of harmonization of standards and increased cooperation, also more and more policy-makers in countries of the global south are discovering organic in terms of its economic potential.

## **1.2 Sustainable Development: The Emergence of a New Paradigm**

But not only do macroeconomic considerations play an important role in the international discussion on the potential scope of organic agriculture: At a time when it has long become clear that the conventional approach to agricultural production has fundamentally failed in significantly reducing, let alone eliminating, global hunger and malnourishment, the search for efficient alternatives in agriculture is the command of the hour. Although the overall trend in the global fight against hunger can be described as positive, the latest report of the 'Global Hunger Index' (GHI) 2012, 'shows that progress in reducing the proportion of hungry people in the world has been tragically slow'<sup>21</sup>. Furthermore, according to the Index, hunger on a global scale remains 'serious' with twenty countries still showing alarming and even extremely alarming levels of hunger - especially in Africa and South Asia. The most widely used catchphrase in this context definitely is 'sustainable development' and it is commonly used in contexts where it points at the fundamental interconnection between the careful use of natural resources and the present and future well-being of local populations. In this regard, it is the Brundtland report's classical commentary which defines sustainable development as 'development which meets the needs of the present without

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20 Taz. Die Tageszeitung. Website: <http://www.taz.de/!7705/> (retrieved on 14.02.2012)

21 International Food Policy Research Institute. 2012: 3  
<http://www.ifpri.org/sites/default/files/publications/ghi12.pdf> (retrieved on 23.02.2013)

compromising the ability of future generations to meet their own needs<sup>22</sup>. Thus, with the main focus of development on the satisfaction of both human basic needs - food, clothing, shelter and so on - as well as the creation of opportunities to satisfy peoples' aspirations for a better life, sustainable development approaches typically claim to be based on a much wider, more complex and - above all – more actor-oriented view than conventional income-based methods. Usually, they maintain the importance of the fundamental ability of people to access and control resources and assets, livelihood options and strategies, thus attempting to provide space for the voices of marginalized people with regard to 'bottom-up' decision making<sup>23</sup>. With rural populations and agricultural production being typically at the very heart of development concerns throughout the globe, major development discourses usually focus on the obvious connection between environmental issues and the socioeconomic states of marginal and resource-poor people.

This close relationship becomes particularly evident in the issue of global food security - a subject which, sparked by an unprecedented global population growth over the last five decades, has not only been extensively discussed by scholars and development policy makers alike, but in this context is also becoming ever more closely tied to the international dissemination of organic agricultural production. Therefore, at this stage of the study, in order to provide a more comprehensive understanding of the connection between hunger and malnutrition and the currently employed overall development agenda, it makes sense to at least briefly explain the most fundamental reflections to that end.

### **1.2.1 Discourses on Global Food Security**

Going hand in hand with the overall development paradigm of growth-oriented modernization, in international debates of the 1950s and 1960s, the global 'food problem' was then mainly equated with a 'supply problem'. It was seen as a natural phenomenon, emanating from natural uncertainty and disaster and therefore largely devoid of political components. Against this background, international focus was primarily laid on the transfer of food - often to establish grain reserves - and the technology of boosting agricultural production in developing countries by means of trade and

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22 The term 'sustainable development' was popularized through a report titled 'Our Common Future' which was published by the World Commission on Environment and Development (WCED) in 1987. Gro Harlem Brundtland, former Prime Minister of Norway, had been appointed Chairman of the WCED in 1983, which is why the report became commonly known as the 'Brundtland Report'. Its acceptance by the United Nations General Assembly gave the term political salience and subsequently, in 1992, political leaders set out the principles of sustainable development at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil.  
See also: Brundtland, G. (ed.) 1987: 8

23 For a detailed description of the sustainable livelihood approach, see: Rajbhandari, B. 2006.



assistance<sup>24</sup>. Since the required knowledge was presumed to reside with agricultural experts, especially those who had at their disposal advanced technological means of agricultural production, this approach was dependent on the - commonly heavily asymmetrical - transfer of what was then thought to be adequate technology. During the 1970s, this focus changed only marginally in that, during the first major inter-governmental conference which was to focus solely on the question of food<sup>25</sup>, increased emphasis was now placed on strengthening the food production base of developing countries themselves. Yet, the reference to 'acute food shortages in the event of widespread crop failures or natural disasters' in connection with a concern expressed in the next paragraph for 'increasing consumption requirements'<sup>26</sup> of developing countries, illustrates the Malthusian rhetoric which still permeated international debates on food security and food politics during this period. Also, it was still considered the responsibility of developed nations to provide 'the required financial, technical and material assistance'<sup>27</sup> in order to enable developing countries to increase their agricultural production. At this, it was silently assumed that the said assistance, regardless of context, could be directly applied to any given situation - no matter how different these were. In a similar way, hand in hand with this highly asymmetrical understanding of international development relations went the implicit assumption that human development was virtually exclusively based on economic growth and progress. The overall assumption was that the focusing on the connection between economic expansion, increasing industrialization, ongoing technological progress and the creation of employment and personal income clearly was the way to increased human well-being<sup>28</sup>. To put it in a somewhat exaggerated nutshell, it was believed that 'an expansion of opulence must make a contribution to the living conditions of the people in question'<sup>29</sup>. At the same time, this approach was fundamentally built on the implicit presupposition that in an unequal society, wealth generated through economic growth would automatically percolate to the lowest social strata, thus benefiting the population as a whole.

It was not until twelve years later when the World Bank's study 'Poverty and Hunger'<sup>30</sup>, against the wider context of a resurgence of international interest in issues related to food security following the African Famines of 1983 to 1985, articulated a new definition of the term 'food security' which is still widely used today and where the latter is defined 'as access by all people at all times to

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24 Geier, G. 1995: 8-10

25 The World Food Conference in Rome, 1974, which yielded the 'International Undertaking on World Food Security' (IUWFS).

26 FAO Corporate Document Repository. World Food and Agriculture Situation. Here: Paragraph 2 <http://www.fao.org/docrep/meeting/007/F5340E/F5340E03.htm#ch2.4> (retrieved on 17.01.2013)

27 See above. Here: Section IV/ 9

28 Rajbhandari, B. 2006: 217/218

29 Sen, A.K. 1988: 12

30 The World Bank. 1986.

enough food for an active, healthy life<sup>31</sup>. Stating that the world had ample food and that the growth of global food production had been faster than the overall - even though unprecedented - population growth of the past four decades, it stood in stark contrast to what had come before. Triggering a major shift of perspective, the study redirected the focus from the hitherto dominant global or national perspective to the household or even individual perspective. A.K. Sen who, in 1981, published his groundbreaking work on 'Poverty and Famines'<sup>32</sup>, is usually credited with the act of initiating this change which made the issue of individual access to food the central question. According to Simon Maxwell, his work's main contribution 'was to codify and and theorize the access question, give it a new name, "food entitlement", and demonstrate its relevance even in famine situations'<sup>33</sup>. This major shift of perspective from the supply side of the food equation towards the localized entitlements to food at the individual household level, radically altered the hitherto dominant assumption: hunger was not so much a phenomenon of insufficient food production as a lack of entitlements to the latter. In more practical terms this meant that, rather than triggered simply by scarcity of food as, for example in times of acute hunger, chronic malnutrition emerges when people lack the *means* to regularly access food. Sen's approach thus represented a vigorous rejection of the Malthusian assumption that famines were unleashed by inadequate food availability. Already the opening lines 'Poverty and Famines' expressly underline this argument: 'Starvation is the characteristic of some people not *having* enough food to eat. It is not the characteristic of there *being* not enough food to eat'<sup>34</sup>. Since then, the analytical redirection from the macro- to the microlevel which underlines access to food as the defining characteristic of food security, has been reflected in almost all major international policy initiatives - from the above-introduced study of the World Bank in 1986 to the 'Bellagio and Cairo Declarations' of 1989 to the 'International Conference on Nutrition' which took place in Rome in 1992. But it was not merely in terms of redirecting efforts towards controlling hunger and famine situations that the above described fundamental shift of perspective had incisive consequences; Rather, it triggered a major paradigm shift which in 1990, with the emergence of the first Human Development Report (HDR)<sup>35</sup> of the United Nations as its landmark, shaped a new global agenda on rural development which has

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31 The World Bank. 1986: 2

32 Sen, A.K. 1981.

33 Maxwell, S. 1996: 157

34 Sen, A.K. 1981: 1

35 A.K. Sen, whose groundbreaking ideas on recognizing the central role of enhancing people's freedoms and capabilities with relation to human development had a clear and deep influence on the first HDR's conceptual underpinnings, wrote: '(...) a basic distinction needs to be made between the means and the ends of development. Human beings are the real end of all activities (...). It is the lives they lead that is of intrinsic importance, not the commodities or income that they happen to possess. Income, commodities ("basic" or otherwise), and wealth do of course have instrumental importance but they do not constitute a direct measure of the living standard itself.'

Sen, A.K. & Anand, S. 1994: 1

since had a profound impact on development policies around the world. Had until then the widely accepted concept of human development been virtually exclusively based on the close link between economic progress and human well-being, the HDR of 1990 claimed to be based on 'the essential truth that *people*<sup>36</sup> must be at the centre of all development' and that 'people cannot be reduced to a single dimension as economic creatures'<sup>37</sup>. Rather than considering the unidirectional 'trickling down' of economic benefit to be the decisive means to reduce socioeconomic inequality and to eventually eliminate poverty and hunger, it built on the idea that the major purpose of human development was to offer people more options in order to promote their basic freedoms, capabilities and personal achievements. In doing so, access to income was considered to be merely one of these options and thus could not be regarded as an end in itself but rather as a one among several different means to acquiring human well-being. Thus, while the HDR's fundamental premise was a rather radical shift in perspective with the objective to 'forward a bottom-up strategy and consider rural development to be more of an interdisciplinary nature than an economic explanation'<sup>38</sup>, it largely contradicted the then prevailing unilinear and commodity-centered concept of human development in favour of an essentially actor-centered approach.

However, while virtually all development agendas following in the wake of this highly influential HDR were guided by concepts which relied heavily on actor-oriented rhetorics and the inclusion and integration of localized concepts with regard to people, practices and resources, according to Robert Alcock, Sen's entitlement approach was clearly misapplied in official discourse. Claiming that 'the economic language used by Sen in his book 'Poverty and Famines' rendered his entitlement theory particularly applicable to the economic discourse of the World Bank'<sup>39</sup>, Alcock concludes that 'The World Bank study modified the essence of Sen's argument in order to integrate the new access-to-food discourse into its own growth-oriented development ideology'<sup>40</sup>. Therefore, while on the one hand Sen's insightful - albeit theoretical - conceptualizations of access and entitlement to food greatly contributed to the emergence of a new, strongly microlevel-oriented development paradigm in the field of global food security and, moreover, provided the basis for a major paradigm change in the global debate on human development, on the other hand the World Bank's study 'Poverty and Hunger' simultaneously produced a reductionist discourse in that it equated an individual's capacity to access food with personal economic prerequisites, that is to say the individual level of income:

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36 Emphasis added

37 United Nations Development Programme. 1990: 3

38 Behera, M.C. (ed.). 2006: 21

39 Alcock, R. 2009: 31/32

40 See above

'Problems in food security do not necessarily result from inadequate food supplies, as is widely believed, but from a lack of purchasing power on the part of nations and of households. Economic growth will ultimately provide most households with enough income to acquire enough food. Supporting economic growth with an equitable distribution of income is therefore the first priority, and should continue as the main goal, of economic policy'<sup>41</sup>.

However, while income is an important element of Sen's approach, he at the same time is very anxious to bring home the point that his concept of entitlements must not be equated with income alone<sup>42</sup>. Although his theory echoes throughout the report, its terms were adapted in order to fit the hegemonic growth discourse of the World Bank with 'entitlement' and 'access' being changed into 'income' and 'purchasing power' respectively. Against these considerations, the international debate on human development and - to be more precise on the global issue of hunger and food security - represents a clear and pertinent example of the instability and productivity of discourse (...) where 'Sen unwittingly authorized a new powerful actor to speak and act on food security (...) which critically enables a new assemblage of economic experts to determine global food security policy'<sup>43</sup>. While the World Bank had effectively biased the discourse on global food security in such a way that strong focus was laid upon aspects of economic stability and expansion, the FAO in much the same way tried to construct the world food security agenda to fit its own constitutional mandate of communication and the collecting, analysing, interpreting and disseminating information relating to nutrition, food and agriculture<sup>44</sup>. Being another key actor in the international endeavours to deal with hunger and food insecurity, the FAO pursues four main fields of activities: 'Serving as a knowledge network, thus putting information within reach; Sharing policy expertise; Providing a neutral meeting place for nations; Bringing knowledge to the field'<sup>45</sup>. The FAO refers to itself as a 'knowledge organization' that 'creates and shares critical information about food, agriculture and natural resources in the form of global public goods'<sup>46</sup>. Thus, along with the World Bank, it has exercised fundamental influence in shaping the global development discourse on hunger and food

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41 The World Bank. 1986. Here: Section v

42 'The income-centred view will be relevant in most circumstances in which famines have occurred. But the inadequacy of the income-centred view arises from the fact that, even in those circumstances in which income does provide command, it offers only a partial picture of the entitlement pattern, and starting the story with the shortage of income is to leave the tale half-told.'  
Sen, A. K. 1981: 155/56

43 Alcock, R. 2009: 30/31

44 See: FAO Corporate Document Repository: Constitution of the Food and Agriculture Organization of the United Nations. Here: Article 1  
<http://www.fao.org/docrep/x5584E/x5584e0i.htm> (retrieved on 25.01.2013)

45 As stated on the FAO's current website: <http://www.fao.org/about/en/> (retrieved on 13.11.2012)

46 See above

security. However, while the former's efforts were directed on the singularization of economic aspects, the endeavours of the FAO were geared towards the recognition of information and knowledge as the central elements. This strongly information-oriented configuration, too, has had far-reaching implications on the global discourse on food security and agricultural production over the last few decades.

It becomes apparent that with the beginning of the 1990s, triggered by a number of realignments in the field of conceptualizing the causes and effective means of combating global hunger, there has been a major paradigm shift considering the fundamental direction of international human development policies in that they assumed a much more actor-oriented overall orientation. It is because of this general reorientation that over the last two decades, 'cultural sensitivity', 'diversity', 'participatory development' and 'sustainable livelihoods' have all become catchwords that are now frequently used within the international rhetorics on rural development in general and on the dissemination and establishment of organic agriculture in rural contexts in particular. It was also explained how, historically, these rhetorics have not developed along the lines of the global expansion of the organic agricultural sector, but rather, the opposite is true: The broad-scale launch of projects linked to organic agriculture have become part of the global development agenda which followed the above explained paradigm shift. However, using the examples of two major actors, namely the World Bank and the FAO, it was also pointed out how the global discourse on agricultural production and food security has been substantially shaped by two different spheres of interest. In this light, the determining rhetorics of the global development agenda can be quite different from its actual realization - with economic growth and income-oriented alignment still firmly in place.

### **1.2.2 Ecologically Sensitive Development**

There exists, however, an additional dimension to the above explained, strongly actor-centered view which has developed especially since the early 1990s and which, over the last two decades, has come to play an increasingly important role in the global discourse on food security and rural development. For example, the 'Rome Declaration on Food Security' in 1996, remarked that the hitherto internationally supported approach to achieve increased agricultural output by means of transfer of industrialized agricultural methods and technologies to developing countries did not hold the key to future global food security. Instead, it recommended the national adjustment towards the sustainable use of locally available resources<sup>47</sup>. While at that time, the pointing at the significance of

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<sup>47</sup> 'We are determined to make efforts to mobilize, and optimize the allocation and utilization of, technical and

the sustainable, responsible use of resources was merely beginning to surface within the context of international debates on human development, it quickly grew in importance. Today, hardly two decades later, the Global Hunger Index report 2012 'focuses particularly on the issue of how to ensure sustainable food security under conditions of water, land, and energy stress'<sup>48</sup>. Also other influential and extensively networked actors explicitly point to the alternative character of organic agriculture in terms of ecologically sound rural development. The 'Sustainable Agriculture Information Network' (Sustainet), for example, in its attempt to contribute to harmonizing implementation strategies, states: 'Organic agriculture was developed as a holistic, ecosystem-based approach, conceived as an alternative to (...) the ecologically unsound practices of conventional agriculture'<sup>49</sup>. At a time when the Newtonian paradigm of linear controllability is quickly losing ground to the realization that extensive and ruthless infringement on the environment triggers unpredictable developments and potentially devastating long-term damages to both nature as well as human populations, ecologically sensitive alternative development discourses - seeking to overcome the reductive basis of development as growth and material progress - are gaining more and more attention and are simultaneously becoming increasingly influential.

Notably in the context of emerging countries of the global south, where severe ecological destructions many times have sadly illustrated the substantial failure of the reductive development paradigm of permanent growth, material progress and increased agricultural output, organic farming is increasingly regarded as a promising instrument of a more accountable 'bottom-up' development. While all around the world, more and more business people and fiscal policy-makers are discovering organic in terms of its economic potential, simultaneously a rapidly growing number of rural development planners, socially-driven organizations and environmental activists are embracing organic agriculture as an alternative means to do away with practices of ecological exploitation. In doing so, these approaches usually highlight the fundamental nexus between environmental and sociopolitical factors within the relevant development scenarios, thus acknowledging the close connection between the targeted beneficiaries of human development concerns and their environmental context: It has become common sense that persistent social injustice - and that includes the issue of hunger and poverty - is closely interwoven with the sustainable use of locally available resources. Therefore, it also seems as a matter of course that 'through greater emphasis on use of local resources and self-reliance, conversion to organic

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financial resources from all sources, including external debt relief for developing countries, to reinforce national actions to implement sustainable food security policies'.

FAO. 1996. Rome Declaration on World Food Security: 2

48 International Food Policy Research Institute. 2012: 3

49 Sustainet. 2006: 23

agriculture definitely contributes to the empowerment of farmers and local communities<sup>50</sup>. Against this background, organic farming is increasingly seen as a potential instrument to enhance a more sustainable development where social justice is closely linked to matters of ecological soundness, thus promising a high level of both social and ecological responsibility.

One of the most famous realizations of this approaches is a comprehensive and ambitious approach which, under the name of Navdanya, has over the last 25 years received global attention. The organization is the brainchild of the internationally renowned Indian scientist and eco-social activist Dr. V. Shiva, who calls for another major paradigm change that should be essentially based on social and environmental responsibility:

‘The economic crisis, the ecological crisis and the food crisis are a reflection of an outmoded and fossilized economic paradigm – a paradigm that grew out of mobilizing resources (...) by creating the category of ‘Growth’ and is rooted in the age of oil and fossil fuels. (...) We need to move beyond this fossilized paradigm if we have to address the economic and ecological crisis. (...) The new paradigm we are creating on the ground and in our minds enriches livelihoods, health of people and ecosystems and cultures. (...) In India Navdanya is working (...) for an organic transition. We aim for an organic India by 2050, to end the epidemic of farmers suicides and hunger and malnutrition, to stop the erosion of our soil, our biodiversity, our water, to create sustainable livelihoods and end poverty. This is futureconomics.’<sup>51</sup>

Even though the organization is still very active in its area of origin which is the north Indian state of Uttarākhand, it has also managed to fruitfully incorporate in its work not only local but also global forms of collective action. Through the establishment of new linkages transcending local and national boundaries, Navdanya has managed to shape a particularly influential configuration of organic agriculture which has attracted much attention - even on an international scale. In its approach, a great number of concrete measures - all grouped around the promotion and further dissemination of organic agricultural production - not only aims at the preservation of local resources and the working towards the political and economical reinforcement of marginal rural farmers and farming communities, but, in the sense indicated above, also seeks to create a worldwide network of sympathisers, activists, researchers and farmers in order to increase international awareness on matters of environmentally sustainable and socially just development. This situation exactly matches the remark that ‘one of today’s NGOs main tasks is to translate,

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50 Ramesh, P., Singh, M. & Subba Rao, A. 2005: 566

51 ZNET website: <http://www.zcommunications.org/beyond-fossilized-paradigms-futureconomics-of-food-by-vandana-shiva> (retrieved on 16.05.2011)

mediate and interleave global and local discourses and fields of action<sup>52</sup> and refers to the fact that most non-governmental actors nowadays are forging increasingly complex and wide ranging linkages with various agencies, social movements and other transnational issue networks and it is also along the historical lines of these translocal connections that the organization's policies, ideological backgrounds and present-day agendas have to be understood and considered.

### **1.3 Approaching Organic Agriculture: Multidirectional Dynamics**

In times of globalized food systems, universal standardization and international transnational public networks, 'food becomes entangled in complex webs of political significance, thus becoming charged with complex and profound histories and implications'<sup>53</sup>. J. Pretty, professor of Environment and Society at the University of Essex, writes in detail:

'In recent years, food has emerged as a political topic par excellence. Capable of connecting individual bodies to abstract communities and techno-scientific innovations to moral concerns, food has become a highly charged and contested field. (...) food is increasingly involved in controversies at a transnational level, in relation to issues of access, dominance, trade and control in what is seen as a shared global environment. Such controversies have placed food at the forefront of political debates both within and between nationstates.'<sup>54</sup>

Even though Pretty does not explicitly refer to *organic* foodstuff, in light of what has been said above, it is obvious that his statement is at least equally valid in this regard, if not more so. Moreover, it is evident that organic agriculture cannot simply be considered the opposite of conventional or commercial farming<sup>55</sup>. At the same time, however, despite the numerous international endeavors of establishing its essential attributes and chief constituents - some of which have already been introduced - there doesn't exist a simple explanation which could really claim to have captured its quintessence in that it could do justice to the manifold approaches, interests, strategies and opinions that form a group around the subject. There is no fundamental and generally accepted difference neither in terms of economic expectations nor regarding the multiple ways in which organic products are sought to be standardized in order to facilitate their global marketing.

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52 Randeria, S. 2003: 164

53 See above

54 Pretty, J. (ed.) 2008: 75

55 Even though for many organizations as well as farmers and consumers, this aspect of 'opposing' or 'withstanding' particular circumstances that are commonly attributed to the conventional agricultural approach and that are felt as being impeding, oppressive or even harmful in some respects, often plays a key motivational role in propagating, disseminating and implementing organic agricultural practices.



Also in view of the character of its methodical foundation, organic agriculture is by no means operating on a categorically different basis but might as well draw on elements quite similar to conventional farming. It is much rather the case that the organic concept provides all kinds of different ideologies, agendas and beliefs with objectives, concepts and strategies, thus bestowing upon itself a great number of meanings, values, opinions and connotations. However, in order to carefully venture in the direction of a comprehensive yet cautious formulation of and perspective on organic agriculture, the latter might be understood as an extensive and complex concept, covering a number of different approaches which show certain similarities in that they all attempt in one way or the other to achieve either economically profitable or environmentally sound or socially responsible or ethically acceptable forms of land husbandry.

It has already been explained that organic agriculture, within a rather short period of time has come to play a major role in international discourses on sustainable rural development and global food security, hereby involving a number of very important supranational agencies and organizations such as the FAO, the WHO, IFOAM or the World Bank. In addition, in the course of subsequent chapters, there will follow the introduction and investigation of the positions, motivations, influences, objectives and activities of other important actors on various levels. These include above all the Indian central government, relevant non-governmental organizations and, naturally, particular rural communities, households and individual farmers, all of which are engaged in the dynamic evolvement of organic agriculture. Taking thus into account the multidirectional influences and dynamics which have become so crucial in modern anthropological analysis, this perspective is also clear on the previously outlined multifacetedness of the organic concept, which is reflected in its various political entanglements. The latter, in turn, become manifest when the actual players within these dynamically shifting constellations are 'frequently appealing to images of some new kind of 'global' scenario and 'cosmopolitan' civil society', thus considering themselves to be a part of some new kind of global<sup>56</sup>. As briefly mentioned previously using the example of Navdanya's involvement in the promotion and further dissemination of organic agricultural practices, through this interleaving of global and local discourses and fields of action, there is an increasing commitment to 'new causes' of a global nature. In this particular case, originating from the confrontation with rapidly changing global conditions, the organization's main objective is the creation of an extensive 'activist' network in order to increase local, national and international awareness on matters of environmentally sustainable and socially just development.

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56 See: Long, N. 1996.

#### 1.4 Approaching Organic Agriculture: Interactive Fields of Practice

In order to thoroughly comprehend the intertwined causes, flows and results of this constant interaction and reworking on multiple levels between various actors, the respective analysis is in urgent need of detailed and comprehensive material concerning all kinds of macro- and microlevel data. Due to the fact that discourses on organic agriculture are many times characterized by a wide spectrum of different motivations, movements, expectations and ideologies, their relations are often fraught with tensions that arise from differences between particular interests. In other words, they are essentially related to the momentum of power.

According to Foucault, who regards power as being entangled in a constantly moving field of irregular and flexible relations, there exist manifold balances of power which inhabit and arrange certain discursive territories and which are permanently charged with tension. It is this the reason why discourses have the potential to work in quite different - even ambiguous - modes of action: On the one hand, due to their being based on already existing 'systems', they can function in quite static, sometimes even preserving ways; on the other hand they also have a great deal of constitutive potential. Therefore, while discourses must be understood to be highly dynamic and always embedded in wider discursive fields of power where various interests struggle for influence, at the same time these interests will always be based on particular strategies and mechanisms to regulate, manipulate, generate - in short: control - the discursive field<sup>57</sup>. From this perspective, discourses are fundamentally characterized by dynamic and suspense-packed negotiation processes where power plays a key role in actively constituting reality<sup>58</sup>. However, due to its fundamentally discursive character, power can not be given a priori but is always embedded into specific interests and the accompanying policies, strategies and actions. It is exactly at this point that, through analyzing concrete actions of concrete actors, discourses cease to be abstract and impalpable theoretical structures and become traceable and comprehensible. If power relations are viewed as generally taking place 'in actu' - which means they are fundamentally based on particular actions, the latter must be seen not only as the smallest but also the most essential elements in the dynamic generation of discourses: Therefore, understanding the impacts of power relations to be based on particular

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57 Assuming an interest-specific formation of reality to be the overall objective of discourses, Foucault uses the term 'dispositive' to describe the active focussing of power relations according to particular, interest-oriented strategies: 'Ich habe gesagt, dass das Dispositiv wesentlich strategischer Natur ist, was voraussetzt, dass es sich dabei um eine bestimmte Manipulation von Kräfteverhältnissen handelt, um ein rationelles und abgestimmtes Eingreifen in diese Kräfteverhältnisse, sei es, um sie in diese oder jene Richtung auszubauen, sei es, um sie zu blockieren oder zu stabilisieren oder auch nutzbar zu machen usw'.

Foucault, M. 1978: 122

58 A very prominent example of the instability and productivity of discourses has already been given in section 1.2.1. Here, it was explained how, originating from the issue of laying down effective concepts for achieving global food security, both the World Bank and the FAO had attempted to produce a reductionist discourse through misapplying Sen's entitlement approach.

actions means a fundamental shift in perspective, turning the often mentioned 'discursive field' into a 'field of practice' where the understanding of discourse formations is essentially dependent on the study and analysis of tangible actions and concrete practices of particular actors. In this light, discourse formations and their fields of practice are becoming inherently local and unstable with the potential to permanently inflict change as well as to change themselves<sup>59</sup>.

From this perspective, the multifacetedness and interdynamic of the concept of organic agriculture and production can be perceived as a contested field of practice where, within an interactive and processual space of various dynamic 'power-parameters' on various levels, specific discourse formations are constantly generated, shifted, amplified, mitigated suppressed and reversed. Therefore, neither is organic agriculture an abstract, supra-individual structure at the global level that has no meeting points whatsoever with the daily experiences, demands and interests of particular people's realities; Nor does it exclusively exist in the sphere of smallholder farmers, specific localities and marginal markets.

### **1.5 Approaching Organic Agriculture: Ethnological Grounding**

It was already shown how organic production must be considered an essential part of market activities on a global scale as well as part of international development discourses. This circumstance is responsible for the fact that the issue of organic agriculture is inextricably linked with agrarian, political and economic macro-structures and interests – which also implies power constellations that are active outside the local sphere. However, in light of what has been explained above, the 'filling' of otherwise abstract discourses with concrete information, thus grounding them firmly in real and empirical situations, provides an adequate means to understand the complex intermingling of various spheres, backgrounds, motivations and objectives.

'(...) an important challenge for a critical theory of globalization is to think through the relationships between the global and the local by observing how global forces influence and even structure an increasing number of local situations. This requires analysis of how local forces mediate the global, inflecting global forces to diverse ends and conditions and producing unique configurations of the local and the global as the matrix for thought and action in the contemporary world.'<sup>60</sup>

A local investigation into the 'social life of organic food' opens up the possibility of rendering visible these relationships and of examining situations and activities on the microlevel accordingly.

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59 See also: Lorey, I. 1999

60 Kellner, D. 2002: 295

Thus, not only can such an investigation provide a more comprehensive understanding of the latter, but at the same time simultaneously can make otherwise abstract discourses come alive with concrete meaning and relevance.

Thus, using the above introduced example of Navdanya's agenda on promoting organic agricultural practice within a particular local background – that is mountain villages of Uttarkāśī district in northern India - it will be shown in detail how organic agriculture 'unfolds' in view of a number of crucial determinants concerning its generation, dissemination, implementation and transformation. At this, in the sense of what has just been said about the multidirectional dynamics of the discourses on organic agriculture and the corresponding fields of practice, it is especially the ethnological shift of perspective which ensures that the intended study will be built on meaningful information which permits the researcher to leave behind purely theoretical terrain. Instead, it is the making visible and rendering tangible of how organic agriculture is determining the realities of concrete people in particular locations that promises success in the attempt to comprehensively understand the organic concept, its sociopolitical implications, ecological aspects, conflicts of interests, development potential and so forth. This approach is also particularly suitable in that it helps to show in what constellation and by what means particular ends are being pursued and, moreover, in what ways the relevant actors are becoming enmeshed in the logic and mechanisms of particular discourses on organic agriculture, thus shedding more light on the various linkages and entanglements that are relevant in this context.

In addition, as was already pointed out, the discourses are by no means unidirectional and it would go against their interdynamic and processual nature to search for some kind of 'power-container' that has the ability to inflict change without being at the same time subjected to transformation itself. Just like so many other discourses covering global dimension, also the subject of organic agriculture is characterized by immense flows of information, capital, goods, people, ideas, policies, images, symbols, regulations, technologies and so on. At this - again in accordance with its reciprocal nature - it would be futile to look for localized centers or blocs of power since the countless movements of material and immaterial things, ideas and people don't accumulate to produce a single overall pattern so that 'the great traditional questions of causality, contingency and prediction in the human sciences (...) in a world of disjunctive global flows' should be asked 'in a way that relies on images of flow and uncertainty (...) rather than on older images of order, stability and systematicness'<sup>61</sup>. Building on the same considerations, nor do these flows take place asymmetrically in merely one single direction - as has often been assumed from the centers to the

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61 Appadurai, A. 2005: 47

so-called 'periphery'<sup>62</sup> - but rather does it make much more sense to speak of certain spheres of influence which then might be linked to varying degrees of authority, control or predominancy. In its efforts to capture everyday life, ethnological methods of operating are perfectly suited to reveal particularities and ambiguities that usually are not noted in purely theoretical accounts. In this light also, the here presented study perceives organic agriculture as an increasingly important factor for rural transformation which, due to the strong inclusion of and focus on practice, locality and particularity, has enormous potential for change from 'below'.

### **1.6 Approaching Organic Agriculture: The Individual Farmer**

From the above discussed considerations, there emerge three major realizations: Firstly, it is absolutely necessary to take into account the various entanglements on the macrolevel which become evident through dynamic and interconnected discourses on, for example, global sustainable development, food security or international market expansion. Moreover, owing to the vast spectrum of motivations, influences, objectives and interests in the space of of global discourses on organic agriculture and its related issues, there emerge not only dynamic power-constellations between several actors, but also particular strategies and mechanisms to regulate, manipulate and control the resulting discursive field. Second, apart from the important aspect of the struggle for influence and power, the relationship between these actors is first of all characterized by multidirectional dynamics and a large number of different flows and linkages on multiple levels, which makes it very difficult to follow the resulting entanglements and enmeshments.

However, these two insights implicate that, thirdly, there is a strong methodical need of grounding those otherwise abstract constellations and complex interrelations within tangible and particular localities, where they then can be 'unfolded' through the examination of concrete situations. On the one hand, this approach allows for the visualization of otherwise abstract processes, thus creating a meaningful way to reveal and investigate the particular situatedness of processual global and local interdynamics; On the other hand, it places special emphasis on the identification and traceability of particular localized configurations of organic agriculture and their specific connections to supralocal processes. In addition, it does justice to the fundamental multidimensionality that exist within and between the respective fields of practice, taking into account the multiple directions and

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62 One of the most influential ideas on globalization that quickly achieved considerable international reputation was A.G. Frank's 'satellite-metropolis-model' which was published in 1967 in his book 'Capitalism and Underdevelopment in Latin America'. In order to explain the fundamental dualist relationship between the capitalist world system and the 'underdevelopment' of Latin America, Frank interpreted the situation as a product of historically evolved structures of dependency, implying simple asymmetries in economical, political and cultural terms. The 'center-periphery-model' is strongly influenced by these considerations.

overlaps which characterize the various interconnected flows and movements. All these considerations are, however, based on the application of a fundamentally comprehensive ethnological perspective which gives priority to the collection of qualitative microlevel data, thus trying to create a rather dense yet still relevant description of particular localized configurations of organic agriculture. Therefore, since it is only through the thorough investigation of concrete localities and actual peoples' accounts of reality, that particular configurations of organic agriculture can be made visible and filled with relevance and meaning at all, the main focus of the here presented study will be laid on individual farmers and their role in the process of generating, adopting, disseminating and transforming organic agricultural practices. So, great importance will be placed on the importance of the statements and actions of individual actors who, in the sense described above, are understood to be the central units of investigation and gaining of insights. They are seen to be exercising the fundamental hinge function between abstract theoretical discourses and practical, concrete and tangible reality and while most investigations and research projects on the premises, implementations or outcomes of organic agriculture largely neglect or even ignore individual farmers' influences, the here proposed study aims at attaching great importance on this very matter. Thus, following the above delineated theoretical and methodical preliminary considerations, it will be examined in detail how and to what extent individual farmers' agency can be judged as contributive or even constituent to the generation, dissemination, adoption and implementation of organic agriculture within a clearly demarcated socio-environmental space. This is intended to reveal the various interlinks and multidimensional flows and movements of ideas, information and innovation that are ultimately responsible for the formation of particular localized configurations of organic agriculture, while at the same time providing a comprehensive understanding of these processes and developments through basing them on individual farmers' sphere of local life as the smallest yet most significant point of focus.

## **2. The Indian Scenario: Casting the Context**

### **2.1 The Agricultural Sector, Development, Food Security and Poverty**

'(...) the increasing monoculture of cash crops has completely transformed the agricultural scene and consequently socio-economic life of rural people'.

(Martin, M. & Kakde, S. 2006: 19)

India, owing to its cultural and religious diversity, the sheer size of its population, its growth and the fact that the country today is the world's largest democratic nation-state, has always been central to

the debate on inequality, poverty, food security and human development. Especially India's vast agricultural sector has always provided rural development policy makers with ample scope for implementing great numbers of different schemes, which over the years have addressed a huge variety of rural development aspects: Health care improvement, food security and supply, electrification, infrastructure development, irrigation programs, the provision of drinking water, stimulating rural employment opportunities as well as increasing agricultural activity and efficiency are among the most constantly recurring issues in this context. It is therefore hardly surprising that the Indian Prime Minister, in his address to Parliament on 25th February 2005, announced 'Bharat Nirman', another major development scheme for rebuilding rural India by the Government of India in partnership with State Governments. Under Bharat Nirman, action on the scale of several hundreds of billion Indian rupees is proposed in the most of the aforementioned fields<sup>63</sup>. At a first glance, these huge amounts of investment in such fundamental requirements like housing, roads, food or clean drinking water seem to be somewhat odd considering that, over the last decade, the Indian economy has generated impressive figures growth with the gross domestic product at an average growth rate of more than seven percent annually<sup>64</sup>. Today, the country's rate of growth of GDP is on everyone's lips and treated as by far the most important single variable on the way to becoming a 'modern' and 'developed' nation where its democratic principles are reflected in its population's material well-being. However, these impressive figures have been fueled especially by the services sector which has quickly evolved into India's major source of economic growth. At the same time, however, the country's economic performance is highly uneven with the rapid growth being concentrated in a handful of states and among a narrow circle of businesses. Currently, services are accounting for more than half of the country's output while at the same time involving only a very minor share of its labor force. Instead it is India's agricultural sector which, although it accounts for just some 20% of the total GDP<sup>65</sup>, provides employment to more than half of its workforce. In light of this heavily asymmetrical situation, voices demanding to focus on the *quality*

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63 For example, the program includes:

- 'Pradhan Mantri Gram Sadak Yojana' (PMGSY) with the proposed building and upgradation of hundred of thousands of kilometres of rural roads for improved connectivity.
  - 'Swarnjayanti Gram Swarozgar Yojana' (SGSY) whose objective is to raise assisted families above the official poverty line by means of ensuring a certain level of income over a fixed period of time.
  - 'Indira Awaas Yojana' (IAY): A flagship scheme to provide houses to the poor in the rural areas on a massive scale
- Government of India. Ministry of Rural Development Website: Programmes & Schemes  
<http://rural.nic.in/sites/programmes-schemes.asp> (retrieved on 07.12.2013)

64 Trading Economics. Website: <http://www.tradingeconomics.com/india/gdp-growth> (retrieved on 07.01.2013)

65 This figure includes not only agriculture but also forestry, logging and fishing. Rather often, those three segments are mentioned in the same breath and referred to as the 'Agriculture and allied activities'.

See: Government of India. Ministry of Finance. Website: Economic Survey 2009-10.  
<http://indiabudget.nic.in/es2009-10/esmain.htm>. (retrieved on 11.12.2013)

Here: Chapter 1: State of the Economy and Prospects

of this growth rather than on its *quantity* are becoming ever louder<sup>66</sup>. It can thus be reasonably assumed that about half a billion people are currently generating income through a broad variety of occupations within the agricultural sector. While a good many of these earn their living through paid labor - working as seasonal harvesters, farm laborers, transport workers or employees in India's vast agricultural industry, others find employment in one of the country's numerous agricultural universities, research facilities, departments or government offices that handle all kinds of affairs related to agricultural production, research, trade and development. According to official statements, 'agriculture provides the principal means of livelihood for over 58.4% of India's population'<sup>67</sup>, which currently constitutes a share of more than 700 million people. However, it would be rather naive to treat these figures as absolute numbers and not seeing them as administrative attempts to at least roughly approach their almost inconceivable magnitude. At the same time, they leave no doubt that definitely a large proportion of the Indian population in one way or another depends on agriculture, thus making India a predominantly agrarian country where the importance of realizing how many families' livelihoods depend on this area of activity can hardly be overestimated. What official data also shows is, that there are not only vast numbers people who are somehow dependent on agricultural production, but that actually there exists a large number of farmers and so, according to the FAO, there are 115.6 million agricultural holdings in India<sup>68</sup> while at the same time, this land is worked by approximately 130 million cultivators. At this point, it is absolutely essential to note that the vast majority of Indian landholdings are so small that, from a market-based perspective, their sheer tininess obstructs them from profitable performances. The Government of India identifies farmers who own less than two hectares of land as small and marginal farmers. They comprise 80.3% of all farmers in India. The average size of the 119 million farms in India was estimated at 1.33 ha in 2001<sup>69</sup>. Due to them being so extremely tiny, these small and marginal farmers control approximately the same area as medium-sized and large farms which constitute only 6.5% of the total number of holdings. Thus it becomes evident that land in India is extremely unequally distributed. Currently, 10%<sup>70</sup> of rural households are entirely lacking access to

66 Versus the end of 2010, the the last major debate was sparked off when the Financial Times cited A.K. Sen saying it would be 'stupid' to focus on double-digit GDP growth without spending more on the social sectors, thus addressing the chronic undernourishment of tens of millions of Indians.

<http://www.ft.com/intl/cms/s/0/baf1f800-0df2-11e0-86e9-00144feabdc0.html#axzz2LqCZy7OW>  
(retrieved on 13.10.2012)

67 Government of India. Ministry of Agriculture. Department of Agriculture & Cooperation. Website: Agricultural Statistics at a Glance 2012. [http://eands.dacnet.nic.in/Publication12-12-2012/Agriculture\\_at\\_a\\_Glance%202012/Pages1-37.pdf](http://eands.dacnet.nic.in/Publication12-12-2012/Agriculture_at_a_Glance%202012/Pages1-37.pdf) (retrieved on 23.02.2012)

68 FAO Corporate Document Repository: Fertilizer use by crop in India. <http://www.fao.org/docrep/009/a0257e/A0257E02.htm> (retrieved on 24.02.2013)

69 FAO Corporate Document Repository: Fertilizer use by crop in India. <http://www.fao.org/docrep/009/a0257e/A0257E02.htm> (retrieved on 24.02.2013)

70 Haque remarks: 'According to 59th Round of National Sample Survey (NSSO, 2006a), nearly 6.6 percent of the rural households in India do not own any land while about 3.4 percent households own on average 0.02 hectare only.



land<sup>71</sup>. Needless to say that, in a country of more than 1,2 billion people<sup>72</sup> which supports 18% of the world's population and 15% of its livestock on merely 2.2% of the world's geographical area, arable land is a very precious and contested key-resource and a major means in poverty alleviation<sup>73</sup>. Already it becomes apparent that, while there exist huge structural deficits in India's rural areas, employment and proceeds from production provided by the agricultural sector remain by far the single largest and most important component of India's rural populations' livelihood. Agriculture and its associated activities constitute the basis of existence of hundreds of millions of peoples, many of them not in the position of successfully developing and exploiting alternative sources of income and livelihood security.

Of course this heavy dependency on agriculture as the only base of livelihood and income bears huge risks associated with the fragility of socially unprotected lives of these people: Despite the boom, triggered by the encompassing liberalizing measures of the early 1990s<sup>74</sup> which in their aftermath have bestowed the Indian economy with quite outstanding annual growth rates, the 'economic superpower in the making'<sup>75</sup> at the same time shelters more than 220 million people

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These two categories of rural households are generally categorized as landless.'

Haque, T. Improving the rural poor's access to land in India.

<http://indiagovernance.gov.in/files/improving-rural-poor-access-to-land-t-haque.pdf> (retrieved on 23.02.2013)

See also: National Sample Survey 2005. 59<sup>th</sup> round. NSS Report No 496. Situation Assessment Survey of Farmers: Some Aspects of Farming. National Sample Survey Organisation, Ministry of Statistics and Programme Implementation. New Delhi: Government of India

[http://planningcommission.gov.in/sectors/agri\\_html/some%20aspects%20of%20farming%2059%20round%202003.pdf](http://planningcommission.gov.in/sectors/agri_html/some%20aspects%20of%20farming%2059%20round%202003.pdf) (retrieved on 23.02.2013)

71 It was only shortly after independence that a national agenda was set towards a larger restructuring of land and estate when the young Indian nation state aimed at equality, rural development and increased agricultural production through land reforms. The basic components of the then agenda as well as of all the other policies which were brought out even decades later, were the allocation of land to the tiller, the consolidation of small land holdings and the redistribution of land to the landless. However, due to the political class being largely congruent with the propertied elite in most places, land reforms have hardly anywhere progressed to a satisfying state. Until today, land reforms in India have been a recurring topic and remain an unfinished business.

For a more detailed account see:

Hanstad, T. 2005 and Sethi, M. 2006

72 The latest census in 2011 revealed a total of 1,210,000,000 people.

Census 2011 <http://www.census2011.co.in/district.php> (retrieved on 06.04.2012)

73 See: Besley, T. & Burgess, R. 2000: 420 and Hanumantha Rao, C.H. 2005: 167

74 Had the Indian government from the 1960s on very much adhered to rather strong protectionist measures characterized largely by socialist doctrine, following the collapse of the Soviet block, it abandoned this economic policy. In order to transform the country into a market economy, the government launched a series of neo-liberal policies, the most important of which was the opening for international trade and investment. Although, through joint venture partnerships, foreign companies had been allowed already in 1987 to participate in the Indian market, the extensive liberalisation of the early 1990s eliminated even these obstacles and provided for substantial and ever-increasing flows of foreign direct investment into the Indian economy. In order to attract this international capital and ensure increasing privatization, extensive deregulative measures and tax reforms were implemented.

For a rather thoughtful overview on this subject see:

Kapur, S. 2005. Foreign Direct Investment in India: Recent Trends and Prospects

[http://www.econ.bbk.ac.uk/faculty/kapur/personal/fdi\\_trends2005.pdf](http://www.econ.bbk.ac.uk/faculty/kapur/personal/fdi_trends2005.pdf) (retrieved on 27.02.2013) and Nagaraj, P. 2003.

75 Forbes Magazine Website: <http://www.forbes.com/sites/dougbandow/2011/03/07/is-india-an-economic-superpower-in-the-making/> (retrieved on 28.02.2013)

suffering from 'hunger'<sup>76</sup>. This being a global share of 25 percent, India is thus home to the largest number of hungry people in the world as confirmed by the FAO report 'The State of Food Insecurity in the World 2011'<sup>77</sup>. According to the report, in 2006 to 2008, 224.6 million people – that is 26.9% of India's population – were living under conditions of chronic hunger. 'The Hindu' claims that exactly within the period of economic boost, 'the number of hungry people rose by 65 million between 1990 and 2005 (...) because economic development excluded the rural poor, and welfare programs failed to reach them (...)'<sup>78</sup>. The GHI (Global Hunger Index)<sup>79</sup> 2011 revealed that India did very poorly in its endeavors to eradicate hunger and now ranks 67<sup>th</sup> out of the 122 countries, which is below all the other major South Asian countries for which the index has been calculated. It also ranks below several countries in Sub-Saharan Africa such as Nigeria and Sudan even though per capita income in these countries is much lower than in India. Hunger in India also has a clear gender and age bias with women, children and old people significantly less likely to receive full nutritional needs as compared to adult men.

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76 Hunger is broadly understood as the discomfort associated with the scarcity of food. As defined by the FAO, hunger is a phenomenon related to an insufficient intake of food that provides less than the minimum energy requirements, standardized at approximately 1800 kcal per day. Of course, the exact requirement depends on various factors such as age, body size, activity level and physiological condition of a person. Usually, 'undernourishment' goes hand in hand with 'micronutrient malnutrition' which is also called 'hidden hunger'. The term refers to a physical condition that results from inadequate diet and is marked by deficiencies of vital proteins, vitamins and minerals, or any or all of these. They are the very micronutrients a human body needs for optimum functioning and a strong immune system. Therefore people – and especially children – affected by micronutrient malnutrition are much more susceptible to diseases. Furthermore, hunger can broadly be categorized as either acute or chronic hunger. Acute hunger is a sudden shortage of food resulting from a human or natural disaster such as wars, famines, droughts or floods. It is the most publicized type of hunger although deaths due to chronic hunger by far outnumber it. Chronic hunger, on the other hand, is 'insidious; it means hunger that is persistent and is a prolonged state of malnourishment. It is a less visible form and families who are unable to meet its most basic nutritional need for all or some part of the year suffer from 'chronic hunger'. Food for such families, if at all available, lack essential vitamins and minerals, and so they remain undernourished. It shows itself in malnutrition, illness and expectation of life that remain obstinately low.

In this light, when referring to 'hunger' in India, the author really means the inextricable linking of both 'undernourishment' and 'micronutrient malnutrition', resulting in a state of chronic hunger.

FAO website: <http://www.fao.org/hunger/en/> (retrieved on 28.02.2013)

See also: International Food Policy Research Institute. Publications. Agriculture and nutrition linkages - old lessons and new paradigms. [http://www.ifpri.org/sites/default/files/publications/focus13\\_04.pdf](http://www.ifpri.org/sites/default/files/publications/focus13_04.pdf) (retrieved on 24.02.2013)

See also: John, J. & Bansari, N. 2009

77 FAO. 2011. *The State of Food Insecurity in the World. How does international price volatility affect domestic economies and food security?* Rome: FAO <http://www.fao.org/docrep/014/i2330e/i2330e.pdf> (retrieved on 24.02.2013)

78 The Hindu. Website: <http://www.thehindu.com/sci-tech/health/policy-and-issues/number-of-hungry-people-in-india-rose-by-65-mn-between-19902005/article2065723.ece> (retrieved on 25.02.2013)

79 Calculated each year by the 'International Food Policy Research Institute', the GHI makes use of a number of different indicators which can be used to measure hunger. To reflect the multidimensional nature of hunger, three equally weighted indicators are combined in one index number: Firstly the proportion of the undernourished as a percentage of the population. Here, in 2011, India scored 26.9%; Secondly the proportion of children younger than the age of five who are underweight, which was 43.5%, and thirdly the mortality rate of children younger than the age of five which was detected at 6.6%.

International Food Policy Research Institute. 2011. *Global Hunger Index. The Challenge of Hunger: Taming Price Spikes and Excessive Food Price Volatility*. Washington DC: International Food Policy Research Institute <http://www.ifpri.org/sites/default/files/publications/ghi11.pdf> (retrieved on 24.02.2013)

The reasons behind this disastrous overall condition are manifold and it is impossible to discuss the issue in depth without investigating particular local contexts and situations. Undernourishment and malnutrition are very complex and multidimensional problems and therefore, in order to come up with a comprehensive analysis of the issue, various underlying schemes and causes needed to be taken into account on a case by case basis.

However, a fundamental aspect in the global debate on hunger and food security is the long-term reduction of poverty which is no less complex an issue and just as widespread. The usual, albeit significantly oversimplified, assumption here is that enabling and empowering people to access food basically meant to ultimately provide them with the adequate monetary means to do so. Just like the trickling down of the benefits of growing economic prosperity is still widely - and often unquestioningly - understood to provide the ultimate means for human development, in an analogous way, the lack of economic capacity and purchasing power is considered to be the fundamental obstacle in terms of doing away with hunger and food insecurity. With this nexus merely representing the logical continuation of the aforementioned paradigm of economic expansion, household poverty is indeed largely recognized as a major cause of food insecurity. Therefore, also the influential US Department of State's 'Global Hunger and Food Security Initiative' states: 'The global community often uses the term 'food security' to describe not only the availability of food, but the ability to purchase food. Food security means having a *reliable* source of food and *sufficient* resources to purchase it'<sup>80</sup>. However, more elaborate voices also point to the fact that, moreover, widespread educational deficits had a major negative impact on alleviation of poverty and hunger since undereducation precluded large segments of the population from participating in economic life and thus from enjoying the fruits of the economic developments. In order to at least provide a little more differentiated, albeit still very basic picture, rural poverty can thus be said to basically results from lack of assets, limited economic opportunities, poor education and – of course – social and political inequalities. Commonly, it is a combination of these factors that plunge entire sections of populations in a state of marginality from which there is hardly any escape out of own effort. However, although there exist more sophisticated perspectives on complexity of the root causes of rural poverty, one can justifiably claim that 'policy debates have indeed been distorted by over-emphasis on income poverty and income inequality, to the neglect of deprivations that relate to other variables, such as unemployment, ill health, lack of education, and social exclusion'<sup>81</sup>.

In this light, also the fundamental attitude and way of approaching and dealing with hunger and

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80 US Department of State. 2009. Global Hunger and Food Security Initiative: Consultation Document. Here: p.1 <http://www.state.gov/documents/organization/130164.pdf> (retrieved on 22.02.2013)

81 Sen, A.K. 2000: 108

poverty in the Indian context does not make an exception. In fact, the apparent shortfall in adequately accessing food for large numbers of people, is officially attributed to the difficult economic situation of many rural households which, for example in combination with 2011's high increase in inflation and sky-rocketing food prices<sup>82</sup>, are said to be the root cause which must eventually be held responsible for the very serious problems large parts of the Indian population are facing. After all, it is true that poverty poses a huge, all too visible problem: According to the International Fund for Agricultural Development in 2005, 75.6% of all Indians earned less than US-\$ 2 per day and 41.6% of the population lived below the international poverty line of US-\$ 1,25 per day<sup>83</sup>. Applying a Multidimensional Poverty Index (MPI), the Oxford Poverty and Human Development Initiative 2011 estimated that currently, 53.7% of the Indian population is living in poverty<sup>84</sup>. As opposed to World Bank enquiries indicating poverty by reference to the amount of money available per person per day, the MPI takes into account education, health and living standard indicators<sup>85</sup>. Hereby, the intensity of poverty denotes the proportion of indicators in which a person is deprived which means, that the fundamental focus of the MPI lies on what people are lacking rather than on what they possess. The MPI also reveals that 28.6% of the population are living under conditions of severe poverty. In India, contrary to popular opinion, poverty is by no means restricted to slum dwellers in the subcontinent's megacities but rather even more prevalent in rural areas; a fact which is hardly surprising if one considers the sheer quantity of people depending on agriculture as their primary source of livelihood. As was explained previously, marginal and small farmers are the mainstay of Indian agriculture and also agricultural wage earners and casual workers make up a significant proportion of the total rural population. Some 75% of the entire female workforce is employed in the agriculture sector. Even though poverty is deepest among the scheduled castes and tribes – above in the states of Orissa, Bihar, Jharkhand, West Bengal and Rajasthan – rural poverty affects broad sections of the population which is especially true since the introduction of neoliberal growth policies in the 1990s. In the context of India's official human development policy, it would appear to be the case that - even though the officially expressed rhetorics of the agenda say otherwise<sup>86</sup> - the largely predominant hegemonic notion of uni-linear economic growth as a panacea for development is still widely accepted. It is also against this

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82 Government of India. Ministry of Rural Development. 2012.

83 International Fund for Agricultural Development. 2005.

84 Alkire, S.; Roche, J.M.; Santos, M.E. & Seth, S. 2011. Country Briefing: India. Multidimensional Poverty Index (MPI) At a Glance. <http://www.ophi.org.uk/wp-content/uploads/India.pdf?cda6c1> (retrieved on 06.06.2012)

85 See above, p.3

86 The official website of the various Indian Government entities, the 'National Portal of India', states that 'Integrated development of rural areas is one of the abiding tasks before the Government of India' and that '(...) the Central government reiterates the cardinal importance of villages to the overall development of the country and commits to work towards development of rural areas, which for various reasons could not keep pace with urban areas in the past'. National Portal of India. Website: <http://india.gov.in/sectors/rural/index.php?id=2> (retrieved on 06.06.2012)

background that the official road map on the above-mentioned 'Bharat Nirman' development project states: 'While the agenda is not new, the effort here is to impart a sense of urgency to these goals (...).' These investments in rural infrastructure will unlock the growth potential of rural India<sup>87</sup>. All too often, though, this primarily growth-oriented development policy appears to 'uncouple' the actual situation of the country's rural population from the sheer size and magnitude of its various development projects: While on the one hand, large sections of India's rural population are resource-poor and live in a state of exclusion, marginality and persistent poverty, on the other hand megaprojects of gigantic dimensions in the fields of energy generation, water distribution and land use are being ruthlessly pushed on<sup>88</sup>. While the beneficial effects of these large-dimensioned 'top-down' measures are vehemently criticized, at the same time their often devastating medium and long-term impacts are increasingly recognized on an international level. Ironically, it is typically the very rural population, officially designated to ultimately benefit from those megaprojects, which eventually suffers greatly from their repercussions. Also, hand in hand with this major focus on economic growth and large-scale technological progress still goes the - somewhat outdated yet even internationally widely adhered to - assumption that higher returns from economic expansion, technological advancement and increased industrial production will automatically 'trickle down' to the lower social strata, thus eventually yielding beneficial effects for society as a whole. In 2010, the Director-General of the National Council of Applied Economic Research in New Delhi stated: 'As India continues to experience rapid economic growth, the challenge to ensure this growth carries forward to benefit even the country's poorest citizens, will remain at the heart of political discourse in the years to come'<sup>89</sup>. Today, the country's rate of growth of GDP is on everyone's lips and treated as by far the most important single variable on the way to becoming a 'modern' and 'developed' nation where its democratic principles are reflected in its population's material well-being. However, in light of the country's highly uneven economic performance - the rapid growth is concentrated in a handful of states and among a narrow circle of businesses - voices that demand to focus on the *quality* of this growth rather than its *quantity* are becoming ever louder.

In order to find a possibility of approaching and revealing the underlying motive for this strong adherence to a mainly commodity-centered, expansion-oriented approach from official sides, it seems to be appropriate to cast light on the particular rationalities that are sustained within the particular context of a given set of material and historical conditions. This procedure is meant to

87 Bharat Nirman. Website: <http://www.bharatnirman.gov.in/download.pdf> (retrieved on 08.06.2012). Here: p.3

88 See for example India's river-linking project:

The Daily Star. Website: <http://www.thedailystar.net/newDesign/news-details.php?nid=225217> (retrieved on 12.03.2012)

89 Desai, S.B.; Dubey, A.; Joshi, B.L.; Sen, M.; Shariff, A. & Vanneman, R. 2010: Preface xvii

provide indication on the reconstruction and understanding of a certain historical mentality and particular ways of thinking about how certain problems should be addressed by particular authorities and through particular strategies. According to H.L. Moore, since these rationalities are local in their context of development and implementation as well as international in their perspective and scope, they 'tie people into those processes of modern living which are beyond their control but in which they are forced to participate, directly or indirectly'<sup>90</sup>. Seen from this perspective, the question why Indian policy-makers have opted for and are still clinging to the above described, somewhat outdated notion of development which focuses mainly on economic expansion and the presumed trickling-down of economic benefits, might allow for a more comprehensive understanding of the present-day political agenda as well as provide assistance in comprehending the actions and reactions of people concerned and affected by this policy orientation. Furthermore, the comprehensive yet relevant establishing of the historical context of Indian agricultural development over the past few decades, is going to substantially contribute to a profound understanding concerning the role organic agriculture has come to play today. It was already mentioned how politicization and instrumentalization are of great significance when investigating the multiple and complex global entanglements of organic - and the same is of course true on a national scale: Mainly during the last few years, organic agriculture has become the topic of numerous discussions in India and has caused great controversy amongst different groups of interest such as official development bodies, economists and non-governmental groups engaged in social and environmental issues. At this, to a similar and probably even greater extent, organic agriculture often gets sharply contrasted with conventional agricultural practices, thus commonly leading to strongly polarized notions of both concepts. In order to understand these strong tendencies of dichotomous instrumentalization, it is necessary to get to the bottom of the various historical processes and developments that have ultimately been responsible for the current political, environmental and sociocultural discourses which are grouped around the issue of organic agriculture in India. It is only through the tracing of past developments in the Indian agricultural sector that today's numerous interests in and expectations of organic farming and its related actors can be understood in their full scope and interrelatedness. Moreover, the insights following this procedure will be hugely beneficial not only to the identification of key actors and agendas, but eventually also to the uncovering of a more comprehensive picture of how and along what lines exactly, particular localized configurations of organic are being developed.

Therefore, at this point of the study, it seems helpful to create a detailed picture of the particular and decisive developments and rationalities which have historically yielded the above described

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<sup>90</sup> Moore, H.L. 1996: 11

political mindset and which, moreover, also provided the foundation for the evolvment and unfolding of major discourses concerning the ever-present issues of hunger, poverty and human development in the Indian context. Ultimately, it is against this background of the historical formation, transformation and interaction of vast discursive fields on agricultural development in the broadest sense, that the emergence of organic agriculture and its current configurations has to be understood.

## **2.2 The Green Revolution: Main Concepts and Food Self-Sufficiency**

Famines and hunger have always been an omnipresent plague of the Indian subcontinent, mentioned already in the ancient Indian writings of the Rigveda. They were permanently lurking beneath the surface of its often celebrated abundance and over time this ever-present threat has left a deep scar on the mindset of India's population. Also in British India, famines were a frequent and well-documented occurrence and continued to cause distress to large parts of the population until well into the 20<sup>th</sup> century. The most recent disastrous Bengal famine during 1942-43 left nearly 3.5 million people dead. Since under the British colonial administration 'modern' agricultural technology was introduced mostly to push the production of exportable cash crops such as cotton, tea, coffee or spices, agricultural practices by and large remained essentially the same as it had been hundreds of years earlier. Therefore, during the formative phase of India as a nation when, at a time of post-colonial realignment, the country's intelligentsia - in their attempt to fight 'underdevelopment' - had focused on effecting the transition from a British colony to a nation in the making through adopting the Keynesian 'necessity and effectiveness of public intervention in managing the economic system'<sup>91</sup>. As Chakravarty points out, these ideas laid '(...) the foundations of a strongly interventionist (...) nation state, whose primary aim (...) was acquisition of economic strength and (...) grow much faster to bridge the initial gap of per capita income (...) to avoid neo-colonial domination'<sup>92</sup>. To this day, development planning in India is based on the development, monitoring and implementation of so-called 'Five-Year-Plans'. While the basis of this development planning hinged on the accumulation of capital for launching rapid large-scale industrialization, it gravely neglected to question how economic growth, premised on a commodity centered approach, often failed to translate into human development. Instead, the Indian development approach was based on 'forging a rhetorical unity between the will and sovereign powers of the state and the people-nation, declaring a programme of economic development for the nation as synonymous with

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91 Roy, H.N. 2012: 7

92 Chakravarti, S. 1997: 51

the well being of the people<sup>93</sup>. Had the First post-independence Five-Year-Plan (1951-56) mainly focused on pushing forward the development of the agrarian sector through investments in dams, irrigation and rural development schemes, the Second Five-Year-Plan (1956-61) heavily fostered the industrial domains, especially heavy industries. This rather sudden neglect of the agricultural sector, in combination with severe and successive droughts resulted in a rapidly deteriorating food situation which, again, brought India to the brink of famine in the early 1960s. Mass starvation was averted only by massive shipments of subsidized food grains from the US. This event set the stage for the development of new thinking on the part of both policymakers and donor agencies about options to increase cereal productivity. Parayil gets to the heart of the matter when writing: 'The only way to attain self-sufficiency was to introduce modern technology that would augment cereal production with land as the fixed variable.'<sup>94</sup> Increasing India's production of foodgrains to the point of self-sufficiency has been one of the most important megaprojects in its history. Other major projects such as the realization of large dams were undertaken with regard to food production, too. And until today, self-sufficiency in food production continues to be a hot potato with the potential of attracting exceptionally much attention – both from political, economical and public side.

The years 1963/64 saw a massive expansion of foodgrain production which was initiated when a limited quantity of only recently developed 'High Yielding Variety' (HYV) wheat seeds were imported from Mexico and tested under Indian conditions. This new generation of seeds can be seen as the very core of the tremendous 'Green Revolution' changes of the 1960s and their large-scale introduction had such a massive impact on the entire agricultural system that they have become synonymous with the Green Revolution itself: 'High-yielding varieties are defined as early maturing semidwarf types that, under intensive agricultural practices (chemical fertilizers, irrigation, pumps, threshers, etc.), provide a significantly higher yield compared to the traditional types'<sup>95</sup>. However, HYVs are not the product of genetic engineering but rather they are the result of traditional plant breeding methods in which hybrids are produced by cross-pollinating unrelated parents<sup>96</sup>. They are Openly Pollinated Varieties (OPVs) and, although biologically not sterile, since all further generations are virtually useless, the adjective 'sterile' may very well be applied to their

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93 Chatterjee, P. 1995: 58

94 Parayil, G. 1992: 740

95 See above, p. 742

96 Hybrid seeds are produced from homozygous breeding lines of a parental generation (P). The advantage of hybrid seeds compared to inbred lines are based on the so-called 'heterosis-effect' with the consequence that such a crossing significantly increases certain qualities within the first filial generation (F1). In order to produce hybrid seeds, carefully selected elite inbred varieties with well documented and consistent phenotypes are cross-bred. As opposed to homozygous seeds, the here resulting hybridization brings about huge increases in crop performance and output. However, this effect is exclusively limited to the entirely uniform F1-generation since, according to mendelian laws, all further multiplication results in increasingly heterozygous organisms. Concerning the desired traits which are so prominent in the hybrid F1 generation, the resulting F2, F3 etc. organisms show highly irregular patterns.



economical characteristics. The semidwarf wheat HYVs had probably originated around 1800 in Japan and were further developed through a wheat development programme the Rockefeller Foundation, in cooperation with the Mexican Government, had embarked on. During these experiments and after tests involving thousands of crossbreeds of plants, 'it was found that if a short stemmed grain were thickly sown at the right depth and adequately irrigated, it could take massive doses of fertilizer without becoming lanky<sup>97</sup> and give spectacularly high yields<sup>98</sup>. Almost simultaneously HYVs of rice suited to the tropical conditions of South-East Asia and South Asia were developed at the International Rice Research Institute (IRRI) in Manila<sup>99</sup> which had also been founded by the Rockefeller Foundation. Through massive efforts on the part of the Indian government and enormous public information campaigns using radio, press and cinema, the new technology quickly spread. Since food-security was the imperative, 'in the initial period of about 15 years the green revolution was confined largely to the well endowed regions of the country covering wheat and subsequently rice<sup>100</sup>'. The new HYVs were introduced nationally for the first time during the 1965/66 growing season with the Indian Ministry of Food and Agriculture as well as the 'Indian Council of Agricultural Research' (ICAR) being the government institutions that planned and coordinated the transfer and diffusion of the new technology. While the multilateral and bilateral donor agencies were the Ford Foundation, the Rockefeller Foundation and the 'United States Agency for International Development' (USAID), speculations about the massive introduction of Green Revolution technologies being rooted in the efforts of an American elite to direct the course of social and economic development in the Third World, can't be entirely denied. It is a widely shared view that the Green Revolution, with its focus on basic foodstuffs, was 'designed' in order to kill two birds with one stone: While new profitable markets were opened up and outlets for agricultural products and proper equipment were created, at the same time these highly promising new markets were meant to be stabilized by decreasing the potential for both rural and urban turmoil caused by growing poverty and hunger<sup>101</sup>. Be that as it may, the fact remains that, in order to successfully cultivate the new HYV seeds, Indian farmers had to adopt a complete technological package of manufactured inputs which itself made the peasant-producer more dependent on the market. In fact, even the very source of any food production, the seed, now depended on adequate

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97 The major problem with traditional varieties was, that beyond a certain point productivity decreased below what it would have been without the application of chemical fertilizers. This happened due to the plant absorbing the nutrients mainly to increase the size of its stalk instead of its 'fruit' and thus being exposed to the risk of falling over due to top-heaviness or 'lodging'. By contrast, semidwarf varieties do not lodge but rather are increased doses of fertilizer returned in form of higher cereal yields.

98 Fitzgerald-Moore, P. & Parai, B.J. The Green Revolution.

<http://people.ucalgary.ca/~pfitzger/green.pdf> (retrieved on 08.06.2012). Here: p.1

99 These varieties were based on genetic materials drawn from China, Taiwan and Indonesia.

100 Hanumantha Rao, C.H. 2009: 30

101 Cleaver, Jr. H.M. 1972

external inputs for optimal performance. Hybrid seeds don't possess inherent traits superior towards traditional seed material but, if not adequately supplied with external inputs, many times actually perform worse than their predecessors. For this reason, they might as well be referred to as 'Highly Responsive Varieties' (HRVs) since optimal performance is only achieved when optimally supplied with external inputs. In addition, they need constant renewal since it is only the first filial generation which potentially achieves the desired performance. It is impossible for agriculturists to produce and reuse their own seeds but rather, they regularly have to buy them. Hybridization thus uncouples 'seed' from seed as 'grain'<sup>102</sup> since seeds are no longer a means of production but only useful as foodgrain. This 'transformation of a self-regenerative process into a broken linear flow of supply of living seed as raw material and a reverse flow of seed commodities as products'<sup>103</sup> at the same time stands for what Cleaver Jr. already in the 1970s has called 'the integration fo the agricultural sector into the capitalist market'<sup>104</sup>. The Green Revolution transfer and diffusion of a package of completely new and 'improved' agricultural practices involving new varieties of seeds, fertilizers, pesticides, irrigation, credits and agricultural machinery basically lead to a massive increase in the industrialization of farming.

Nevertheless, the new technology pushed up productivity levels first in wheat and, later, in rice. Foodgrain production over the last half century tripled and grew from 80.6 million tonnes in 1963/64 to 241.5 million tonnes in 2010/11.<sup>105</sup> Ever since the 1960s, the overall objective of agricultural development has been aimed at increasing food production, especially the production of food-grains, in order to achieve food self-sufficiency and alleviate hunger in the country. Since – at least in theory - this objective had been achieved and the country for decades was able to generate enough basic agricultural output to sustain its entire population, India through this has become somewhat of a role model for developing countries having achieved self-sufficiency through modern, industrialized methods of agricultural production. Therefore, in India, the post-green revolution period and its miraculous rise in output of foodgrain is considered to be an almost sacred historical turning point and has had a deep impact on national self-confidence. In this regard, the Green Revolution measures adopted in the mid-1960s were a huge success and have allowed India to become officially self-sufficient in production of food grains. Today, India's single biggest export item is milled rice<sup>106</sup>.

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102 Kloppenburg 1988: 93

103 Shiva, V.; Elani, A. & Jafri, A.H. 1999: 39

104 See Cleaver, Jr. 1972: 179

105 See table 1.

See also: Government of India. Ministry of Finance. Website: Economic Survey 2009-10.

<http://indiabudget.nic.in/es2009-10/chapt2010/chapter08.pdf> (retrieved on 11.12.2013)

106 According to 2007's report of the MAP of the European Commission, from a total of 7.7 billion US-\$ of agri-exports, milled rice was the single biggest export item and accounted for 16% of the total export value in 2003-

### 2.2.1 The Green Revolution: Ecological Threats

Yet, the term 'self-sufficiency' is not only misleading but, in light of the actual situation of widespread distress described in the previous section, even somewhat daring. In fact, the huge discrepancy between food production and the number of people suffering from hunger and poverty is almost shocking. India being home to the world's largest number of hungry people, it might at the very most be claimed that, in the wake of the green revolution, food production has significantly increased over a prolonged period of time. However, this development has definitely failed in providing the country's population with both adequate food supply and means of reducing poverty; Instead, there exists the growing concern that India's growth in foodgrain production in the past was based on favorable factors which nowadays show rapid decline while at the same time food demand challenges become ever more present. Apart from the still rapid and unchecked growth of population - especially amongst the poor sections of society – it is the increasing fear of broad, unpredictable changes in climatic patterns that promote the spread of scepticism and apprehension concerning food security. Most of all, though, it is the gradual realization of even emphatic supporters that the peak of foodgrain production in India has actually long been reached. Admittedly, despite some negligible ups and downs, India's overall foodgrain production still continues to break new records – as happened most recently in the 2010/11 harvest<sup>107</sup>. This trend is very likely to be attributable to 'the expansion of irrigation, increased crop intensities and increased reliance on assured groundwater'<sup>108</sup>. However, when taking a closer look at the conditions of production and, first of all, the long-term ecological costs that occur in order to keep agricultural output high, it soon becomes clear that one is faced with a rather naïve and unsustainable miscalculation: While it is understood that political and economical measures regarding, for instance, the improvement of institution efficiency, the providing of services, inputs and infrastructure or the updating of outdated tenancy-laws are all very important and urgently needed tools for ensuring broad access to both agricultural means of production as well as agricultural products and, in this way, for contributing to the future reduction of rural poverty and hunger, another fact becomes increasingly clear: It is the very foundation of Indian agriculture which is under pressure and rapidly shrinking – its natural resource base of land and water.

In the Indian agricultural scenario, where hundreds of millions of small and marginal farmers are depending almost exclusively on surrounding, immediately available natural resources, the

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2005.

See: European Commission. Directorate-General for Agriculture and Rural Development. MAP. India's Role in World Agriculture [http://ec.europa.eu/agriculture/publi/map/03\\_07.pdf](http://ec.europa.eu/agriculture/publi/map/03_07.pdf) (retrieved on 19.03.2012)

107 2010/11 harvest produced a total yield of 241.5 million tonnes of cereals (rice, wheat and coarse cereals) and pulses added together.

108 Reddy, V.R. 2003: 4705

currently under way process of massive ecological degradation threatens the very existence of large parts of the population<sup>109</sup>. Here, again, there exists a huge disparity between the actual effects which are perfectly apparent on the microlevel, and the macrolevel picture where yields are still increasing and ecological degradation is hardly ever reflected in official statistics and predictions. This statement also relates to the fact that there has never been any officially reflected congruency between productivity and ecological sustainability: Decades of overuse of natural resources in the name of increasing yields and stabilizing food supply have now come to undermine India's agricultural scenario in a highly alarming way. It is only now, with water availability for agricultural uses reaching critical levels and huge areas of arable land being under serious threat from all kinds of degradation, that huge disparities between the macro- and the microlevel become apparent and an ever-growing chorus of critical voices points out this contradiction. In this regard, it was already in 1972 when Cleaver Jr. showed a great deal of foresight, stating that 'The most difficult to foresee but the most potentially devastating of all the contradictions of the Green Revolution are those involving the ecosystem.'<sup>110</sup>

### **2.2.2 The Green Revolution: Land & Water**

As indicated above, arable land in India is an extremely scarce resource, a fact, which is all the more true for almost exclusively rainfed, poorly connected and remote areas where many times, it constitutes the *only* available resource. However, there's a whole range of ecological impacts concerning the alarming extent of land degradation and loss of soil fertility which have come into focus over the last couple of years. Hardly is it any longer deniable that, while on the one hand, after the broad introduction of green revolution technologies, food production has been successfully increased, on the other hand very serious ecological imbalances have been created which are now raising serious concerns about future food supply and security. Green revolution technologies are substantially - if not exclusively – based on external inputs such as fertilizers, pesticides and large and assured quantities of water. Usually these key inputs come along with heavy increases in capital requirements, agricultural mechanization and power consumption. In general, what happens is an overall intensification of agricultural activities: As can be seen from table 2, cropping intensity in India has steadily increased, especially in the northern and eastern states. Basically, higher cropping intensity means that a higher portion of the net area is being cropped more than once during one agricultural year. This also implies higher productivity per unit of arable land during one

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109 A brief overview on contemporary comments includes: Dhanagare, D.N. 1987; Farmer, B.H. 1979; Shiva, V. 1991

110 Cleaver, Jr. H.M. 1972: 184

agricultural year. However, steady growth can only be achieved if the level of external inputs is maintained or even increased. Apart from cultivable land, the steady supply of water constitutes yet another crucial precondition for agricultural success - which is why India's irrigation rate has expanded at a steady rate during the last few decades and now, including some 62 million hectares<sup>111</sup>, covers the world's largest irrigated area: The net irrigated area has increased by 24% during the 1980s and then by another 18% in the 1990s<sup>112</sup>. This development can be partly attributed to the fact, that the Indian government, over the last 50 years, has invested extensively in surface irrigation facilities such as large dams, long canals and other large-scale projects requiring huge outlays of capital over rather long periods of time. However, it is certainly not marginal farmers cultivating their marginal plots with marginal technology who profit from this 'supersize' development. Some sources estimate that 50 percent of all public expenditures on agriculture have so far been spent on large-scale irrigation projects alone. Yet virtually all marginal areas have been excluded from this development's benefits and the overwhelming majority of small and marginal farmers is still depending on adequate patterns of rainfall. Unsurprisingly, cropping intensity has long since been highest in agriculturally 'developed' states like Punjab and Haryana and lowest in dry, primarily rainfed regions like Rajasthan, Maharashtra and Madhya Pradesh. But even where irrigation facilities have been developed, their performance is highly controversial.<sup>113</sup>

Had in the past surface water irrigation played a significant role in increasing the net irrigated area, from the mid-sixties onwards, the proportion of surface water to net irrigated area showed a significant decrease. Thus, during the last few decades, groundwater irrigation has come to play the key role and by the year 2000, 'the groundwater irrigated area of 35 million ha accounted for 61% of the total net irrigated area in India'<sup>114</sup> with, from the 1980s onwards, groundwater accounting for virtually all growth in agricultural irrigation. This development is largely due to incompleteness of planned irrigation projects and poor maintenance of the existing surface irrigation infrastructure. At the same time, in many instances, government subsidies for power and pump installation have encouraged private investment in tube wells<sup>115</sup>. According to Kelkar, 'there was a phenomenal

111 International Commission on Irrigation and Drainage. Website: [http://www.icid.org/imp\\_data.pdf](http://www.icid.org/imp_data.pdf) (retrieved on 19.03.2012). Here: p.2

112 Government of India. Ministry of Water Resources: Website <http://wrmin.nic.in/index2.aspx?slid=307&sublinkid=406&langid=1> (retrieved on 15.03.2012)

113 Inocencio and McCornick for example remark: 'These investments began in the 1960s and peaked in the 1980s, but in the early 1990s, public spending in agriculture slowed down and this translated into reduced spending in irrigation. (...) Support from multilateral and bilateral donor agencies also declined over the same period.(...) The poor economic performance of many past irrigation projects in India may have contributed to the decline in irrigation investment and lending by international financial agencies in the 1990s'. Inocencio, A. & McCornick, P.G. *Economic Performance of Public Investments in Irrigation in India in the Last Three Decades*. <http://www.iwmi.cgiar.org/publications/Other/PDF/NRLP%20Proceeding-2%20Paper%206.pdf> (retrieved on 15.03.2012). Here: p.1

114 Amarasinghe, U.A.; Shah, T. & Malik, R.P.S. (eds.). 2009: 184/85

115 For a detailed account and critique see: The World Bank. 2010.

increase in privately-owned shallow tube wells, from about 1000 in 1947 to about 36,000 in 1968/69 to about 20 million presently. The indiscriminate pumping of groundwater has led to a steep decline in the water table in many places<sup>116</sup>. Overexploitation is a serious and widespread problem, especially in those areas where the Green Revolution has been broadly introduced and which, until now, have been regarded as the textbook examples of the introduction of Green Revolution technologies. Especially the states of Punjab and Haryana are particularly afflicted by rapid ground water depletion<sup>117</sup>, resulting from massive irrigation intensities. According to FAO estimates, India uses more than 90% of its water for agricultural purposes<sup>118</sup> - that is raising livestock and irrigation. While groundwater resources are rapidly depleted, excessive irrigation causes groundwater salinity<sup>119</sup> and water-logging<sup>120</sup>. Already in 2001 the Indian Ministry of Environment & Forests had launched a 'Nation Action Programme to Combat Desertification' to fight the increasing loss of arable land suitable for agriculture<sup>121</sup>. As annual drafts exceed hydrological recharge rates, agricultural cultivation becomes increasingly difficult in many regions. Water pollution from agricultural pesticide residues as well as industrial wastes pose another threat to India's future food production.

### 2.2.3 The Green Revolution: Chemical Inputs

Yet another major problem lies in the fact of the ever-increasing use of external chemical inputs which is another fundamental requirement for the successful cultivation of the above described Green Revolution's HRV seeds. Today, the issue of soil degradation and overuse of heavily subsidized chemical fertilizers, arises ever more frequently and contributes significantly to the rapid increase in desertification, soil degradation and pollution of ground and surface water.

According to the FAO, total NPK-fertilizer<sup>122</sup> consumption in India between the 1970s and 2000 increased nine-fold from about two million tonnes to 18,07 million tonnes when it reached a record

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116 Kelkar, U. 2006: 42

117 Kelkar (see above) estimates the level of exploitation to be already 94% in Punjab and 84% in Haryana respectively.

118 FAO Aquastat Website: [http://www.fao.org/nr/water/aquastat/countries\\_regions/asia/index4.stm](http://www.fao.org/nr/water/aquastat/countries_regions/asia/index4.stm) (retrieved on 24.02.2013)

119 Surface evaporation leads to the deposition of salt which reduces crops yields and eventually, if the buildup becomes excessive, kills the plants.

120 As second or even third crops are planted each year on the same plot, rice growing land is inundated with water for longer periods of time. In doing so, adequate drainage is all the more important since, due to overirrigation, water tables may be raised to the root zone. Quite often the situation is made worse by poorly maintained irrigation infrastructure: The water can't drain off and the plants are starved of oxygen.

121 Government of India. Ministry of Environment and Forests. National Action Programme to Combat Desertification <http://envfor.nic.in/unccd/01forward.pdf> (retrieved on 27.03.2012)

122 N= Nitrogen (N); P= Phosphorus (P<sub>2</sub>O<sub>5</sub>); K= Potassium (K<sub>2</sub>O)

level. Since then, the growth in consumption has been erratic<sup>123</sup>. These large amounts of fertilizer are distributed through a vast and well-developed marketing network<sup>124</sup> which is spread throughout the country. While cooperatives supply almost 35% of the total quantity available, private channels distribute the balance of 65 percent. Fertilizer consumption varies greatly between states. Unsurprisingly, here too, the per-hectare consumption is highest in the states of Punjab (184 kg) and Haryana (167 kg) – more than double the all-India average of 89.9 kg<sup>125</sup>. At this, major differences between the northern and southern states where the adoption of green revolution technologies was highest and the ‘underdeveloped’ eastern and western states including, for example, Orissa (41,4 kg) and Rajasthan (40,5 kg), become clearly visible. Needless to say that this accounts on a similar scale for irrigation levels, cropping intensity and crop yields. Of the total consumption of straight N fertilizers, Urea accounts for 82 percent and therefore constitutes by far the most important fertilizer used on the Indian subcontinent. Di-ammonium phosphate (DAP) is the biggest component in phosphate consumption, contributing 63 percent. Due to these unmatched proportions of usage, Urea and DAP are the fertilizers virtually every farmer knows about and which he is likely to already have made some experiences with. Fertilizer use in India is heavily skewed towards Urea since it is much cheaper than potassium and phosphorus products. This is due to the fact, that ever since independence governments have pushed the use of Urea by heavily subsidizing it. Since huge amounts of Urea are sold and spread onto fields, India made massive efforts in order to become self-sufficient in terms of Urea production. Through a sharp increase in domestic production capacities, especially from the mid-1970s and the early 1990s, the country today meets 85% of its Urea requirement through indigenous production. DAP imports are considerable and due to the absence of domestic natural resources, the entire requirement in potash fertilisers is imported<sup>126</sup>. Adequate and constant fertilizer supply is of such importance to agricultural production that ‘The Fertilizer Control Order of India’ treats fertilizer as a strategic commodity. There is big money involved, too: The fertilizer industry in India is in the core sector<sup>127</sup> and second to steel in terms of investment. In November 2011 the Wall Street Journal speculated about new investments in the

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123 FAO Corporate Document Repository: Fertilizer use by crop in India.

<http://www.fao.org/docrep/009/a0257e/A0257E02.htm> (retrieved on 24.02.2013)

124 According to the FAO, ‘as on 31 March 2004, the total number of sale points was 282 468. Of these, 77 percent were privately owned and 23 percent were in cooperatives and other institutional channels.’

See above.

125 Government of India. Union Budget and Economic Survey. Website

<http://indiabudget.nic.in/es2004-05/chapt2005/chap813.pdf> (retrieved on 11.02.2012)

126 In 2010/11 approximately 21.53 million tonnes of Urea were produced and another 4.58 million tonnes imported.

The Indian Express. Website:

<http://www.indianexpress.com/news/fertiliser-imports-in-aprilnov-stand-at-16.17-mn-tn/754837/>

(retrieved on 03.03.2013)

127 The so-called ‘core sector’ spans crude oil, petroleum refinery products, natural gas, fertilizers, coal, electricity, cement and steel.

sector in the order of about 10 billion dollars<sup>128</sup> since existing manufacturers were supposedly seeking to expand their capacities in order to meet increasing demands – especially of Urea. The other side of the coin is, that Urea is the only fertiliser product which presently comes under the government's 'Retention Price cum Subsidy on Urea'<sup>129</sup>, a condition which poses a somewhat self-generating problem and its root cause lies in the direction of the flow of subsidies: The subsidy the government provides for Urea is given to the farmers by routing it through fertilizer manufacturers which means that, in order to make fertilizer affordable for farmers, the prices are artificially kept below production costs. The difference is then paid to the manufacturers to compensate them for their losses and thus government subsidies merely 'represent' subsidies to the farmers. However, the costs to keep fertilizer prices low are incredibly high and ever since weighing heavily on India's finances<sup>130</sup>, rising to more than 1.5% of the GDP in 2009.<sup>131</sup> The immense cash flows resulting from this policy have of course led to the establishment of a very powerful 'Urea lobby' which defends its position in the Indian fertilizer market. As Sharma & Thaker have shown<sup>132</sup>, demand has recently soared and from 2005 onwards, imports have substantially increased. The important point to note here is, that this heavy orientation towards Urea has for decades resulted in heavy imbalances in the use of fertilizers. With Urea selling for a fraction of the price of other fertilizers and an influential lobby making sure that this trend would not be weakened or even reversed, farmers are using substantially more of the nitrogen-rich material than the more expensive potassium and phosphorus products. The NPK-ratio of 4:2:1 is generally accepted to bring about ideal results in terms of nutrient supply and crop performance. In India, however, this ratio is heavily skewed towards the use of nitrogen<sup>133</sup>. According to Tiwari 2001, 'productivity could be initially maintained with N

128 The Wall Street Journal. Website:

<http://www.livemint.com/2010/08/31221202/Fertilizer-industry-set-for-wa.ht> (retrieved on 24.02.2012)

129 According to the Indian Department of Fertilizer 'The Retention Price Cum Subsidy Scheme (RPS) for indigenous nitrogenous fertilizer units was introduced by the Government of India in November 1977 to ensure a reasonable return on investment and to facilitate healthy development and growth of fertilizer industry. The Scheme was later extended to phosphatic and other complex fertilizers in February 1979 and Single Super Phosphate (SSP) in 1982. However, from August 1992, the Government has progressively decontrolled the prices and distribution of phosphatic and other complex fertilizers. At present, farmgate price of Urea is controlled by the Government whereas its distribution has been partially decontrolled from 1 April 2003'.

At present, however, only Urea is covered under the statutory price control and is regulated in terms of the new pricing scheme for urea units. In addition, the government of India provides subsidies for other, 'decontrolled' fertilizers.

See: Government of India. Ministry of Chemicals and Fertilizers. Website:

<http://fert.nic.in/page/more-about-ficc> (retrieved on 17.10.2012)

130 Sharma & Thaker claim that in 2008-09 indigenous urea, imported urea and the subsidies for decontrolled fertilizers together amounted to 75.849 crore rupees or almost 11 billion Euros.

Other sources even estimate the Indian fertilizer subsidy cost in 2008 to have amounted to around \$24 billion.

See: Sharma, V.P. & Thaker, H. 2009.

See also: Pandey, S.; Byerlee, D.; Dawe, D.; Dobermann, A.; Mohanty, S.; Rozelle, S. & Hardy B. (eds.) 2011.

131 Government of India. Ministry of Chemicals and Fertilizers. Department of Fertilizers. Indian Fertilizer Scenario 2010. <http://fert.nic.in/sites/default/files/Indian-Fertilizer-Scenario.pdf> (retrieved on 28.02.2013)

132 See: Sharma, V.P. & Thaker, H. 2009: 16

133 'Low subsidized prices for urea unmatched by similar levels for P and K created a situation of unbalanced



fertilizer alone as the soil could provide much of the other nutrients needed by the crop. However, within a few years, the soil reserves of many nutrients were gradually exhausted, and high yields were no longer possible by applying N alone<sup>134</sup>.

However, it is not just the massive use of chemical fertilizers that substantially contributes to the severe ecological crisis Indian agriculture is currently experiencing, but also the use of pesticides which jumped hundred folds from 154 tonnes in 1954 to 88,000 tonnes in 2001. Here also, unsurprisingly, the state of Punjab is one of the largest users of pesticides. And it is also from Punjab that 'villagers are reporting a high incidence of cancer and other illnesses like skin rashes, which was until recently almost unknown in the rich state'<sup>135</sup>. Nevertheless, pesticides are indispensable to the farmer in fighting plant pests and diseases as well as protecting the crops both during plant growth and subsequent storage and transport, and Indian farmers draw on a rich fund of traditional methods of pest control. Despite the enormous increase in chemical pesticide use in the wake of the green revolution, India's current share of worldwide pesticide consumption represents just 3.75%<sup>136</sup> and amounts to a usage of merely 0.5kg/ha. In comparison, the US and Europe alone consume almost 70% of all chemical pesticides which again points at the limitations and asymmetries within the Indian agriculture scenario: First, pesticide use is high within green revolution states where the industrialization of agriculture is relatively advanced. It is also here that today, after some decades of rather reckless pesticide use, massive health problems arise. Those are not just limited to direct contamination of human beings, for example through unprotected application of pesticides due to insufficient safety instructions or farmers' poor understanding of inherent health hazards, but have also indirectly started to surface through high concentrations of dangerous chemical residues in animal products, ground water and human breast milk. Second, the use of chemical pesticides is also high within certain limited agricultural sectors focussing on the production of rather susceptible cash crops which are usually grown in disease-prone monocultures where the use of chemical pesticides is virtually inevitable. Here, the most prominent example is the so-called 'Indian cotton belt', an area which has of late come to be known as the 'suicide belt' - an allusion to the high risks inherent in highly specialized and industrialized agriculture to Indian farmers.

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fertilization, with excessive use of N and underuse of P and K. The N-P-K ratio in India in 2007 is estimated at 6.6-1.1-1.'

Pandey et al. 2011: 14

Sharma notes that the state of Punjab shows the most distorted N-P-K ratio at 27.8:7.3:1 as against the generally recommended 4:2:1 ratio. See: Sharma, V.P. & Thaker, H. 2009: 23

See also: Chand, R. & Pandey, L.M. 2008: 14

134 Tiwari, K.N. 2001.

135 Indiatogether. Website: <http://www.indiatogether.org/2005/jun/agr-bloodcide.htm> (retrieved on 28.02.2013)

136 Gupta, P.K. 2004: 84

However, as has already been mentioned above, it is not just the immediately evident effects of pesticide use on the lives and health of Indian farmers but, to an even greater extent, also the long-term chronic risks for the environment that pose a severe threat to the future of agriculture in India. Just like in the case of chemical fertilizer usage, extensive use of chemical pesticides is a severe intervention into natural processes and, in the long run, triggers dangerous side-effects. Some of them, such as the contamination of natural water resources or the accumulation of potentially harmful residues in plants and, subsequently, also in animal and human organisms, have already been mentioned and can be termed as 'direct' repercussions. However, the 'indirect' effects arising from long-term pesticide (over-) use can be linked directly to the ecological crisis Indian agriculture is currently facing. Here, the most prominent example is the rapid loss of biodiversity which, again, is especially prominent in industrialized agricultural scenarios where single-crop monocultures in combination with massive use of pesticides have resulted in serious disruptions of natural life cycles. In India, out of the total consumption of pesticides, more than 80% are insecticides. Only 15% are herbicides and the remaining five percent is fungicides and others<sup>137</sup>. In a scenario where pest control is done by application of chemical substances alone, naturally local factors that play important roles in a complicated ecosystem are being neglected. This is all the more true for the Indian scenario where poor public awareness of health and environmental hazards goes hand in hand with a serious and persistent lack of transparent information distribution on behalf of both pesticide companies and the responsible authorities. Besides, uncontrolled marketing has escalated the misuse of pesticides and often it is poorly trained or even unlicensed dealers and retailers who are aware neither of the toxicity nor of the correct application of the pesticides who are being sold<sup>138</sup>. The most common disturbing ecological consequence of continual and liberal use of chemical pesticides therefore neglects the fact, that 'pesticide resistance is a dynamic phenomenon dependent on biochemical, physiological, genetic and ecological factors'<sup>139</sup> and frequently leads to what, in 1978, Robert van den Bosch has called the 'pesticide treadmill'. The term denotes three simultaneously operating forces, namely pest resurgence, pest resistance and secondary pest outbreak which van den Bosch combined into a coherent theory<sup>140</sup>.

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137 Since, in the overall picture, external inputs are much more limited than human labor, weed control is mainly done by hand weeding which explains the extremely low share of herbicides.

138 See: Shetty, P.K. 2004

139 Shetty, P.K. & Sabitha, M. 2009: 119

140 In short, what he says is that, just as plants have evolved the ability to produce toxins to protect themselves from herbivores, so are insect pests able to rather quickly develop resistances to these toxins. It is this million-year old evolutionary force which severely limits the effectiveness of any chemical pesticide to a very narrow time frame – a process which is inevitably leading towards the use of either more, stronger or completely redesigned pesticides. Moreover, wiping out the entire population of primary pests frequently triggers unpredictable side-effects such as the occurrence of previously unnoticed secondary pests which, in the absence of their former competition, now rapidly multiply and may cause even more damage than the initial target. Furthermore, quite disastrous imbalances occur when natural predators are killed whose populations take much longer to recover than the actual pest.

Immediately the connection between chemical fertilizer and pesticide use becomes very clear: The reductionist focus on enhancing productivity through industrialized methods creates not only severe dependencies of farmers on ever increasing amounts of external inputs but also triggers severe long-term developments causing great damage to the environment. It is also through this persistent need for more and more pesticides that substantial imbalances in various animal populations are induced. When naturally-occurring populations of predatory insects are being killed, not only are unforeseeable shifts in pest outbreaks bound to occur but also are natural food chains heavily distorted, entailing unpredictable consequences for local animal species and thus seriously threatening local biodiversity. The contamination, degradation and exploitation of natural habitats further aggravates the situation by destroying or severely limiting ecological niches.

Thus, the success of enormously increasing the nation-wide production of food-grains through modern and industrialized methods of agricultural production came at a high ecological price. At this moment in time, it seems that Indian agriculture witnesses the negative repercussions of almost half a century of extensive use of green revolution technologies: While in the past, spectacular achievements in crop performance were based on favourable environmental starting conditions, continuous and excessive overuse of water and chemical inputs – especially nitrogen-rich fertilizers – have presently resulted in massive degradation of farmland and an overall loss of micronutrients from the soil. There is increasing evidence that, as decades of reckless and extensive overuse and pollution take their toll on the environment, the area suitable for agricultural production actually is rapidly decreasing. According to the Indian 'Department of Agriculture and Cooperation' almost 44.6% of all agricultural land in India is reported to be affected by various kinds of land degradation. This basically means that the fertile top soil layer is severely damaged, contaminated or perhaps even completely lost. It happens through water erosion, wind erosion, water logging and water flooding, soil salinity, alkalinity and acidity<sup>141</sup>. The rehabilitation of degraded and polluted land, though, is such an extensive operation that virtually all of the officially proposed and currently implemented schemes to fight hunger and consolidate food security resulted in one way or the other from enhancing crop productivity and yield gains rather than from an expansion of the area under cultivation. The development of previously completely untapped areas holds an even poorer prospect since it is common knowledge that the limits of expansion of cultivated land in India have

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See: Van den Bosch, R.. 1989.

141 For a detailed and state-wise account for the problem of land degradation see:

Government of India. Ministry of Agriculture. Department of Agriculture and Cooperation. Land Degradation Scenario of India and Programmes/Schemes for development of degraded lands.

<http://www.agricoop.nic.in/nrm/statnrm.pdf> (retrieved on 02.11.2012)

long been reached<sup>142</sup>. To highlight the volatility of the situation further: Due to rapid population growth, the per capita availability of agricultural land declined from 0.48 hectares in 1951 to 0,27 hectares in 1998/99<sup>143</sup>, a trend which, in the light of what has just been outlined, leaves no other option but to further increase cropping intensity on the already available land. But here, too, the situation provides little reason for euphoria: Although cropping intensity has increased during the last three decades for more than 20%, production seems to have reached an upper limit and an increasing number of scientists give warning of the far-reaching environmental consequences of 'overcropping'. The term perfectly describes the overall axiom of industrial agricultural production by secretly pointing at the various one-sided dependencies underlying this system: In an output-oriented agricultural axiom, ecological factors are subjected to the necessary inputs. It is against this background that, while natural resources such as groundwater and micronutrients are becoming rapidly depleted, both soils and crops are getting 'addicted' to external inputs.

### **2.3 Political Shortcomings**

The sections above identify factors which provide substantial ground for declaring that the Indian agricultural sector is currently facing another major crisis. It was expounded in detail how, over the past half-century, massive efforts were undertaken to support, stabilize and ensure a steady supply of the required agricultural inputs in order to maximize food production, thus ensuring stable supply of crops in order to feed India's massively growing population. Clearly, these efforts quite unilaterally focussed on the pushing forward of macro-projects, the most prominent and far-reaching definitely being the substantial implementation of green revolution technologies. While at the one hand, through the promotion of the latter, India managed to officially reach self-sufficiency in terms of the nationwide production of foodgrains, at the other hand this could not alter the fact that millions of Indian citizens are still facing massive poverty and food insecurity. As if to add insult to injury, extensive irrigation and the large-scale use of chemical inputs have meanwhile caused massive ecological problems, so that the very foundation of India's agricultural - first and foremost land and water - is currently subjected to massive erosion. Since access to these resources is absolutely constitutive to the livelihood of a majority of the country's population, the currently

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142 Explaining the reasons for the introduction of green revolution technologies some 45 years back, Parayil writes about the situation in the mid-1960s: 'As there was no more land to be brought under the plow, increasing the productivity of the land using modern technology became the most viable means of providing food for the near one-fourth of the world's population dependent on only one-sixteenth of its land area.'

Parayil 1992: 738

143 Ray, S. 2011: 75

ongoing process of degradation is tantamount to the comprehensive loss of the means of existence for millions of rural people and leads to a vicious circle of marginalization, poverty, hunger and rural underdevelopment.

In this context, it is currently possible to observe the rapid opening up of an ever-widening gap within the Indian agricultural scenario that can be directly related to the above outlined trends in the adoption, implementation and expansion of highly resource-intensive agricultural practices. For some time now, there has been occurring the development of strong asymmetries between whole rural areas and populations being underprivileged, living under marginal conditions of heavy dependence on various factors beyond their control on the one hand; and the formation of relatively big agricultural enterprises located in regions which anyway enjoy beneficial climatic and environmental conditions on the other. While the former are largely excluded from the benefits of agricultural development and therefore live on a sustenance-oriented basis within a sphere of fragility and severe limitations, the latter exhibit features of industrial dimension and are characterized by increased levels of mechanization, high external input levels and market-oriented cropping patterns. At the same time, marginal farmers are often forced to increasingly turn towards the cultivation of lands that are somewhat unsuitable for agricultural cultivation, thus causing long-term damage to more and more areas. There is every indication that the country's current output of foodgrains must be largely attributed to a combination of the above mentioned factors which, however, has already reached a critical level of overcropping. That is why there is now growing concern that India might again turn into a major importer of basic foodstuffs within only few year from now<sup>144</sup> and supply-and-demand-based forward-looking assessments are usually quite negative about the issue.

Furthermore, in India - as in most other countries, too - there exists an 'Agricultural Pricing Policy' (APP) at various stages of the processing and marketing process<sup>145</sup>. The main and frequently declared objective of this tool of market intervention is to 'ensure remunerative prices to the growers for their produce with a view to encourage higher investment and production'<sup>146</sup>. Towards the end of each year, minimum support prices for major agricultural products are announced. They

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144 See for example:

DNA India. Website: [http://www.dnaindia.com/money/analysis\\_more-food-imports-are-inevitable-for-india\\_1391482](http://www.dnaindia.com/money/analysis_more-food-imports-are-inevitable-for-india_1391482) (retrieved on 29.10.2012)

145 There exists a whole range of APP instruments. For a brief overview see:

Mitra, S. & Singh Sareen, J. 2006. Adaptive policy case study: agriculture price policy in India. In: IISD Research Report November 2006. *Designing Policies in a World of Uncertainty, Change and Surprise. Adaptive Policy-Making for Agriculture and Water Resources in the Face of Climate Change*. Winnipeg, Manitoba: International Institute for Sustainable Development, pp. 69-78

146 <http://agro.indiamart.com/agricultural-price-policy/>

see also: <http://www.mospi.gov.in/Manual-on-Agricultural-Prices-and-Marketing.pdf>, p.4

<http://india.gov.in/citizen/agriculture/index.php?id=8>

are fixed after taking into account the recommendations of the 'Commission for Agricultural Costs and Prices' (CACP)<sup>147</sup>. The CACP's assignment is to carry out state-specific analysis for the cost of production in respect of various commodities taking into account all major factors<sup>148</sup>. After consultations with state governments and meetings with the state Chief Ministers, Minimum Support Prices (MSP) are declared. This price support policy was initiated by the Government to provide protection to agricultural producers against any sharp drop in farm prices – an objective which has gained even more urgency since the encompassing deregulating measures implemented in the late 1980s. At present, twenty-five agricultural commodities come under the MSP<sup>149</sup>. However, many typical cash crops of mountain regions – for example kidney beans or potatoes - are not included. Here, again, *productivity* is emphasized, the ultimate objective being not just the provision of a 'safety-net' in view of the generally weak position of farmers but rather creating incentives for higher investments within a certain direction. As Mitra and Singh Sareen put it:

'MSP has been highly favourable to rice and wheat production and has resulted in the shift of good quality land and resources to these crops, away from pulses, oilseeds, and coarse grains. Lack of crop diversification and heavy dependence on a few major cereal varieties has led to a significant loss in crop biodiversity. Inadequate extension and training, (...) and subsidy policies that made modern input too cheap and encouraged excessive application, have, collectively, created negative environmental impacts'.<sup>150</sup>

What has to be made plain here is this: There exist certain mechanisms on the part of the Indian government which are implemented with the aim of consolidating retail prices of major agricultural products. Through focussing exclusively on certain crops, however, not only are major changes in agricultural production being caused but, more importantly, these changes commonly do not respond with local requirements. Those policies are perfectly in line with the hegemonic, reductionist orthodoxy of assessing development solely in terms of growth of output. However, unidimensional schemes focussing on growth and investment, clearly show vital deficits in taking into account India's extremely divergent agro-ecological conditions and therefore, it is often the cash crops cultivated by marginal farmers – and thus precisely the most vulnerable communities in marginal areas where climatic and environmental conditions still set the limits of agricultural

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147 The 'Agricultural Prices Commission' was set up in January 1965 to advise the government of India on price policy of major agricultural commodities. Since march 1985, the Commission has been known as CACP. It is a statutory body.

148 Such as changes in input prices, e.g. fertilizers, pesticides, electricity; input/ output price parity; trends in market prices; inter-crop price parity; demand and supply situation etc...

149 Government of India. Ministry of Agriculture. Department of Agriculture and Cooperation. Website: Directorate of Economics and Statistics. [http://eands.dacnet.nic.in/msp/MSPStatement\\_%282012.03.08%29\\_latest.pdf](http://eands.dacnet.nic.in/msp/MSPStatement_%282012.03.08%29_latest.pdf) (retrieved on 05.03.2013)

150 Mitra, S. & Singh Sareen, J. 2006: 76

productions – which are excluded from official backup schemes. Uniform instruments of market influence such as can be found under the paternalistic precepts of the Indian ASP therefore are no adequate means to bring off long-term solutions for highly fragile and marginal agricultural regions but, on the contrary, are under strong suspicion of being contributive to the worsening of the food supply situation.

In this connection, the recurring subject of the Indian central government stockpiling huge amounts of grains that are simply left to rot – an affair largely owed to the concept of MSP and severe mismanagement in terms of both storage and distribution - is usually brought in to seriously put a question over official body's expertise and authority to effectively deal with even the most elementary challenges in terms of India's food problems<sup>151</sup>.

Apart from the looming ecological crisis - which is increasingly threatening the livelihood of especially small and marginal Indian farmers through plunging them ever deeper into marginalization and dependency - and the prevalence of serious mismanagement in the handling, storage and distribution of food grains, it is also the increasing withdrawal of state support from agriculture which has massively affected and further exacerbated India's overall agrarian situation: In his study on 'Investment and Subsidies in Indian Agriculture 2007', Jha shows that public investments since the 1980s decreased drastically and that it was not until 2000 that they have been again slightly increased<sup>152</sup>. This happened to such an extent that some even suspect systematic neglect of the agriculture sector by the government<sup>153</sup>. At the same time, the agricultural sector's share in India's GDP dropped fairly precisely by 100% over the same period to below 17.5% in 2006<sup>154</sup>. Naturally, this grave neglect was followed by an all too visible deceleration in agricultural growth: Had India's agricultural sector grown more than targeted during the 1980s and 1990s, it clearly fell short of the targeted growth during the 9<sup>th</sup> and 10<sup>th</sup> Five Year Plan from 1997 to 2007. During the latter, the agricultural GDP grew at an annual rate of only 2.1% as against the announced 4%<sup>155</sup>. As has been mentioned earlier, the same period saw a significant decrease in total public investment in agriculture from 20% to 5%. In total, expenditure on agriculture and allied sectors, irrigation and rural development have shrunk more than three-fold during the last five decades<sup>156</sup>. In

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151 See for example: HindustanTimes. Website:

<http://www.hindustantimes.com/News-Feed/India/India-lets-grain-rot-instead-of-feeding-poor/Article1-577688.aspx>  
(retrieved on 02.11.2012)

See also: The Times of India. Website:

[http://articles.timesofindia.indiatimes.com/2010-07-27/india/28316273\\_1\\_lakh-tonnes-grain-egom](http://articles.timesofindia.indiatimes.com/2010-07-27/india/28316273_1_lakh-tonnes-grain-egom)  
(retrieved on 02.11.2012)

152 Jha, R. 2007:7

153 See: Wiggerthale 2009: 20

154 See: European Commission. Directorate-General for Agriculture and Rural Development. MAP. India's Role in World Agriculture. [http://ec.europa.eu/agriculture/publi/map/03\\_07.pdf](http://ec.europa.eu/agriculture/publi/map/03_07.pdf) (retrieved on 19.03.2012. Here: p.2

155 Sharma, V. P. 2007

156 See: Mathur, A.S.; Das, S. & Sircar, S. 2006

this light, to claim that agriculture has been systematically neglected by the government, gains much more meaning. On the other hand, to this day India is a country that does not have a comprehensive land-use policy. Constitutionally, agriculture comes under the responsibility of the states rather than the central government and therefore most of the land-related policies are evolved at the state-levels rather than at the center. Although the central government's role lies in formulating overall policies and providing financial resources to the states, the final realization and implementation is a federal responsibility – a fact which accounts for large variations across the states and puts the term 'systematically' somewhat into perspective. What this development implies is that, instead of intensifying efforts to improve and develop rural access to markets, infrastructure, agricultural means of production, education etc. which is the very precondition for combating poverty, hunger and insecure livelihoods, the continuous cut-back in investments has even further exacerbated the situation.

Moreover, not only has the agricultural sector's overall significance declined notably, but latest developments also suggest that the implementation of neoliberal measures in the 1990s has since then caused massive agrarian distress and has plunged millions of individual farmers and their families into even deeper crisis. According to the National Crime Records Bureau 2010, already more than 250,000 Indian farmers have committed suicide within the last 15 years<sup>157</sup>. While some attribute these incidents to the complex interaction between agro-economic factors like crop failure, indebtedness or failure of traditional crisis management strategies, others directly blame government official bodies for failing to provide adequate assistance to farmers, thus highlighting politico-economic issues. It is nevertheless largely agreed that the rather radical change in agricultural production and management - the most fundamental aspects of which have been explained above - has affected and altered individuals, families and rural communities in such a profound way that many times, socio-economic strategies of approved crisis-management are unable to provide solutions for the distressed<sup>158</sup>. However, since this phenomenon of an extraordinary increase in suicides is almost exclusively constricted to areas who had witnessed rather radical shifts of cultivation patterns from traditional (food)grains to input-intensive High Yielding Varieties of commercial cash crops such as cotton or oilseeds, this extreme scenario fortunately is still very constricted. Yet is quite suitable for pointing out the massive destructive potential of distortions in India's agricultural practice and rural society. It is therefore rather

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157 See: The Hindu. Multimedia Archive:

[http://www.thehindu.com/multimedia/archive/00820/Farm\\_Suicides\\_\\_All\\_\\_820598a.pdf](http://www.thehindu.com/multimedia/archive/00820/Farm_Suicides__All__820598a.pdf) (retrieved 04.04.2012)

For detailed data see: Government of India. Ministry of Home Affairs. National Crime Records Bureau. Accidental Deaths and Suicides in India 2010. <http://ncrb.nic.in/ADSI2010/ADSI2010-full-report.pdf> (retrieved on 04.04.2012)

158 See: Vasavi, A.R. 1999.

See also: Mohanty, B.B. & Shroff, S. 2004.



apparent that, at the most extreme borders of the encounter of traditional forms of cultivation and industrialized agribusiness, political awareness and problem-solving approaches of this development lag far behind.

It also becomes clear that, despite major achievements in the field of overall output of foodgrains over the last four decades, India's enormous problems concerning high food insecurity, widespread poverty and the further marginalization of large parts of its population are still far from being solved. Whilst the provision of comprehensive assistance to marginal rural populations and the stabilization and sustainable buildout of the country's agricultural production should be the main focus of national development agendas, the Indian government keeps on sending out contradictory political and economical signals: Although the agricultural sector forms the country's very backbone in that it provides the basis of existence to the vast majority of India's population, drastic cut-backs in public investments and the increasing withdrawal of state support from the agricultural sector have massively affected and further exacerbated India's overall precarious agrarian situation. While this increasing neglect of the agrarian sector is rarely made public, instead special emphasis is frequently placed on the urgent need to shift ever more attention towards newly emerging domains like the service and information sector. Based on the argument of neoliberal, market-oriented measures that required such a fundamental reorientation, at the same time the agricultural sector witnessed and still continues to witness not only the ongoing reduction of development efforts, but also undergoes further regulating measures<sup>159</sup>. While it is true that India's recent strong growth in GDP has been fuelled especially by the services sector, at the same time this insight goes hand in hand with the deeply rooted, simplistic assumption that the overall increase in economic growth would automatically translate into human development. However, with all the above-mentioned fundamental problems becoming ever more present, the question of whether organic agriculture might hold the urgently needed key to efficiently addressing the country's pressing rural development issues, is moving ever more into the spotlight of various agendas.

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<sup>159</sup> The drastic increase in nitrogen-based fertilizer subsidies, for example, has surely significantly contributed to further deteriorate the anyway poor condition of soil matter, thus having counter-productive effects on adequate and reasonable efforts concerning rural development.

### 3. Organic India

#### 3.1 Zooming Into the Locality

'The National Commission of Farmers considered organic agriculture as a tool for the second green revolution in the rain fed and hilly areas of the country. Reports by the National Commission on Farmers indicate that the multi dimensional crisis in agriculture has made it necessary for India to make a paradigm shift in agriculture development.'

(Partap, T. & Vaidya, C.S. 2009: 11)

In India, it was not until the beginning of the new millennium at the latest, that both the Indian central government as well as various state governments started to intensify their efforts to promote and consolidate organic agricultural production, and yet it has already become one of the major buzzwords in the context of rural development. During this period, however, organic farming has received considerable degrees of attention on the part of various actors whose motivations, expectations and interests in the subject have come to encompass a rather wide spectrum - from purely economic interests to environmental objectives to the genuine promotion of human development in the country's marginal and underprivileged regions. In contrast to the introduction of green revolution methods, however, when the well-developed state of Punjab was chosen as the initiation site and its relatively large and wealthy farmers became the first to receive the green revolution packages<sup>160</sup>, the first attempts to introduce organic agricultural practices concentrated on very marginal agricultural scenarios. So, the earliest official efforts that were made in this respect came under the 'Diversified Agriculture Support Project' (DASP) scheme – a World Bank assisted, five-year agricultural pilot project which was carried out as a step towards creating sustainable rural economies with the objective of enabling the respective farming communities in diversifying their agricultural enterprises, so as to result in increasing productivity and farm incomes within the context of self-help groups. As part of this program, in 1998, the concept of 'bio-villages' and organic agriculture was introduced in selected regions of the state, including also two purely mountain districts in what was then still the state of Uttar Pradesh. Following this, in 2000, the National Planning Commission recommended an expansion of organic agricultural practice in marginal areas, and then, already by may 2001 the 'National Program for Organic Production' (NPOP), which had been devised by the Committee of the Indian Ministry of Industry and Commerce in record time, passed legislation<sup>161</sup>. However, it is already the involvement of the latter

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160 See: Dhanagare, D.N. 1987

161 As a matter of fact, the first-ever 'official' seminar on organic farming in India was held in Jawahar Lal College of

body which rather obviously reveals the program's strong alignment towards the development of market prospects of organic products - and thus the fundamentally commerce-oriented change of direction within only a few years after the initial introduction of organic production. Also, from the very beginning, the NPOP's design closely followed existing guidelines such as the aforementioned IFOAM-Standards on organic production and accreditation as well as several other regulations and requirements of the European Union, thus bringing itself more into line with international requirements. In addition, the 'Agricultural and Processed Food Products Export Development Authority' (APEDA)<sup>162</sup> was appointed the central agency concerning the nationwide promotion of organic production and the swift development of international marketing opportunities. In this regard, within the scope of the 10<sup>th</sup> Five Year Plan (2002-07), the Indian government allotted the sum of Rs 100 crores in order to support the development and implementation of a unified national system for organic accreditation and recognized certification bodies. Finally in June 2006, as a result of those intense efforts in combination with the anyway close reference to international guidelines of Indian organic standards, the NPOP's standards of production and accreditation were classified by the European Union as being equivalent to their own regulations. In march of the same year, the same procedure was approved by the United States Department of Agriculture. This made it possible to from now on supply the rapidly growing markets in both Europe and the United States with organic products that were produced in compliance with internationally recognized standards. Top export products are organic tea, spices, fruits, Bāsmati rice, cotton and coffee and the international premium prices in the organic sector usually fluctuate between 20 and 30 percent above the average prices for commercial products<sup>163</sup>. Regarding the overall alignment of India's NPOP as well as the promising economic revenues that currently can be expected from expanding international sales, it is hardly surprising that the overall focus is clearly set on developing international exports<sup>164</sup>. Quite naturally, as a consequence of the currently ongoing expansion of

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Agriculture in Indore, Madhya Pradesh, in 1993. This event was followed by the formation of the 'All India Organic and Biodynamic Farming Association' in Indore in 1995. It comprised of retired scientist and activists. Also, during the second half of the 1990s, the fairly well-known 'Bio-Dynamic Association of India' (BDAI) – which is closely related to anthroposophical principles - was founded in Tamil Nadu but it wasn't until 1999 that it was formally registered. Furthermore, during the early and mid-1990s, the central Indian state of Maharashtra saw the first small-scale experiments on the cultivation of organic cotton. By and large, however, these efforts went largely unnoticed by contemporary policy-makers and therefore proved relatively insignificant. Recognising this, the establishment of the Indian National Program for Organic Production (NPOP) was not the very first step in this direction but certainly gave official endeavours the initial spark.

162 For more information on APEDA see: APEDA. Website: <http://www.apeda.gov.in/apedawebsite/index.asp> (retrieved on 05.02.2013)

163 See: Garibay, S.V. & Jyoti, K. 2003. Market Opportunities and Challenges for Indian Organic Products. <http://orgprints.org/2684/1/garibay-2003-Market-Study-India.pdf> (retrieved on 29.08.2012)

164 This was also explicitly confirmed by Sanjay Dave, APEDA director, during an interview conducted at the BioFach fair in Nürnberg, Germany, 15. - 18.02.2012  
See: Oneco. Organic News Community. Website: <http://oneco.biofach.de/de/news/?focus=165466b4-4fb3-4bd6-a919-bb5e11b67293> (retrieved on 16.11.2011)

export of organic products, also the area under organic production has increased massively during recent years. Scientists from the Indian Institute of Soil Science in Hyderabad estimate the increase in certified cultivation area between 2008 and 2010 to have exceeded 200 percent<sup>165</sup>. Although the initial proposals of the Planning Commission saw the main opportunities of organic agriculture in the sustainable long-term development of marginal, disadvantaged areas, India's NPOP was in effect largely guided by rather narrow export-oriented interests. Especially during the 10<sup>th</sup> Five-Year-Plan (2002-07), efforts were strengthened in order to support the development and implementation of a unified national system for organic accreditation and recognized certification bodies which shows the dominant orientation towards international exports and the tapping of different market potentials. Alongside the rapidly growing export market for organic premium products, there has also developed a domestic market for organically produced and certified foods which, however, until now has played a relatively minor role. It seems to be the case that, at least on behalf of official bodies and agendas, organic farming's domestic potential in terms of increased food security, malnutrition or more environmentally sustainable agricultural production so far has hardly received the necessary attention. Rather, the overall export orientation of the organic sector in India is so extremely dominant that domestic sales potential can still be found only in the country's megacities, if any<sup>166</sup>. It is against this background that the Indian domestic organic market generally can be described as being somewhat rudimentary and incoherently structured - maybe even unorganized, showing fundamental structural deficits. Data and information on domestic production, marketing, distribution and consumption are practically unavailable and details on the various actors within this sector usually amount to nothing more than quite superficial and shallow information where local initiatives commonly emerge through the efforts of individual farmers and cooperatives that often receive assistance from various private and non-governmental sides. Nevertheless, as of late, a noticeable increase in the domestic marketing of organic products can be observed and 'organic' is becoming more and more visible. At present, for example 'fabindia' - one of the companies with the richest tradition in advertising traditionally manufactured and fair traded products - has started offering a comprehensive range of organic foods<sup>167</sup>. Also the demand for textiles and clothing made of organically grown cotton - so called 'Khadi organics' - is growing

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165 See: Ramesh, P.; Panwar, N.R.; Singh, A.B.; Ramana, S.; Yadav, S.K.; Shrivastava, R. & Subba Rao, A. 2010.

However, probably due to the rapid and often disorganized acceleration of this organic boom, basic data generally fluctuates greatly. Thus, while the Indian Institute of Soil Science for the year 2010 assumed the area under organic cultivation to amount to 528.171 hectares, already in 2007/08 APEDA had indicated the organic cultivation area to have risen above one million hectares.

166 See: FAO Corporate Document Repository: Greening Agriculture in India: An Overview of Opportunities & Constraints [http://www.fao.org/DOCREP/ARTICLE/AGRIPPA/658\\_en-05.htm#TopOfPage](http://www.fao.org/DOCREP/ARTICLE/AGRIPPA/658_en-05.htm#TopOfPage) (retrieved on 24.02.2013)

167 Fabindia. Website: <http://www.fabindia.com/organics.html> (retrieved on 17.01.2011)

continuously both within and outside India.

It becomes clear that also Indian policy makers and development planners are paying increasingly attention to the expansion of organic agriculture, allotting large sums for its propagation and dissemination. While initially, organic agriculture was implemented within very marginal mountain areas, it has long since reached other, more favorable agricultural regions. Although marginal agricultural scenarios are still attracting attention in terms of promoting and implementing organic production, within a few years the overall focus seems to have fundamentally shifted: Following the international orientation of developing organic products for the global market, Indian government policies and initiatives almost exclusively pay attention to the further development of international marketing prospects and so, the organization of the country's domestic organic market still seems to be of little official interest and is largely left to the private sector. Against this background, despite the frequent affirmation of applying a much more sophisticated and multilayered development approach to the propagation of organic agriculture, 'well being of the people' is still much too often being equated with an increase in agricultural production and market expansion. With the newly emerging Indian organic sector having a strong propensity towards commensurability and leveling and the real focus being almost exclusively on the premises of the uni-linear growth of international organic trade, this orientation is clearly dominating other fundamental aspects relating to the issues of environmental sustainability, local food security and socially just human development. And with the NPOP's latest advancement having been the development of an internet-based traceability system for organic products<sup>168</sup>, the question arises of how small and marginal farming households can fit into this picture of global standards, technology and highly promising market opportunities of international dimension.

### **3.2 Organic Uttarākhāṇḍ**

Although the above-mentioned DASP scheme represented the first official endeavors to introduce organic agriculture to Indian farmers, R.S. Tolia - then principal secretary of the Forest and Rural Development Department of Uttarāncāl<sup>169</sup> - was not entirely right in stating that 'organic agriculture in Uttaranchal owes its existence to this small but significant scheme'<sup>170</sup>. In fact, while these latest

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168 According to S. Dave, it went online in June 2010. See: Oneco. Organic News Community. Website: <http://oneco.biofach.de/de/news/?focus=165466b4-4fb3-4bd6-a919-bb5e11b67293> (retrieved on 16.11.2011)

169 It is important to note that, what is today Uttarākhāṇḍ state, earlier was part of the northwestern territory of the adjoining state of Uttar Pradeś. It wasn't before November 2000 that the new state was carved out of Uttar Pradeś and, at the time of its formation, was given the interim name 'Uttarāncāl'. Finally, in January 2007, the name of the state was officially changed from Uttarāncāl to Uttarākhāṇḍ.

170 Tolia, R.S. 2007: 191

developments on behalf of official bodies are today hardly a decade old, early efforts to promote organic agriculture on the part of private and non-governmental actors date back almost thirty years and back then chiefly involved the area around Dehradūn as well as some of the country's north-western districts - that is to say parts of the plains and mountains of what is today Uttarākhāṇḍ state. These early efforts – similar to the intentions of the original DASP scheme - hardly were economically oriented but rather were characterized by quite unconventional motivations that emerged out of particular historical political and ecological circumstances. However, the use of several key terms - empowerment, participation and sustainability – at that time already constituted a major part of their agendas. They had come into the picture in the mid- and late 1980s, almost a quarter of a century after the broad introduction of green revolution methods in India. They did not come about coincidentally but at a time when the first negative social and ecological effects of this massive agricultural transformation became rather apparent. Apart from the official success story of comprehensive food safety and national self-sufficiency in the production of food grains, there now also surfaced an increasing number of tales of impoverished farmers, crisis-ridden rural farming communities, massive degradation of natural resources and extensive ecological damages in various parts of the country. As was explained at length during the previous chapter, since then, these impacts on the environment and - as a direct consequence - also on the very basis of livelihood of millions of Indian households in rural areas, have become even more serious and evident. In addition, over the same period, there were growing signs that the Indian central government was moving away from its hitherto pursued 'highly dirigiste economic policy management style'<sup>171</sup> in favor of opening up its markets for foreign investments. In the middle of the decade, the country's persistent budget deficits forced rather drastic austerity measures and minor reforms were introduced by the government, then led by Rajiv Gandhi<sup>172</sup>. These paved the way for the far-reaching political change of direction, when, in 1991 a foreign exchange crisis pushed India near bankruptcy and brought off major shifts in public policy thinking with a particular focus on the development of an 'innovative capability in the economy'<sup>173</sup>. Thus, extensive measures liberalizing trade and capital flows were implemented<sup>174</sup>: Industrial licensing was dismantled; trade barriers

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171 After Independence, Indian economic policy under the influence of the colonial experience rather strongly adhered to socialist ideas and strategies and was strongly inclined towards protectionism and import substitution where state intervention in both financial and labour markets played a major role. In this 'guided economy' the public sector was large with industrialization and business regulations under state monitoring. Also, central planning – with 'Five-Year Plans' resembling central planning in the former Soviet Union - occupied a central position in the country's economic policy.

See: Denoon, D.B.H. 1998.

See also: Kelegama, S. & Parikh, K. 2000.

172 Shastri, V. 1997

173 See: Krishnan, R.T. 2003

See also: Cerra, V. & Saxena, S.C. 2002

174 See: Aghion, P., Burgess, R., Redding, S. & Zilibotti, F. 2006.

were progressively lowered; restrictions on technology imports were removed; the economy was opened up to trade and foreign capital and investments. In short: State monopolies were to a great extent broken, controls were removed, competition and private sector enterprise were officially encouraged and the paradigm of global liberalism was embraced. Down to the present day, despite the recent successes and rapid growth of various nationalist movements all over the country, this overall orientation towards economic liberalization continues to be a major political force in India<sup>175</sup>. It therefore comes as no surprise that official efforts in the field of organic farming many times follow the determining influences of this rather dominant course, focussing strongly on international markets, certification standards and global sales prospects of Indian organic products. However it is indeed essential to realize that, while during the last decade an increasing number of official bodies have jumped on the organic bandwagon - usually driven by the general prospect of triggering rural development through economic growth resulting from international trade - earlier efforts of promoting organic agriculture in India were exclusively made by – albeit at times supported by foreign official departments - non-governmental actors. Therefore it is often the case that initially, farmers in Uttarākhand did not learn of organic cultivation through government departments and official extension workers but usually through NGO employees who, of course, promoted particular organic approaches according to their organizations' respective agendas. Most notably one specific organization has been extensively involved in this process and might rightly claim to have pioneered the organic movement in Uttarākhand: Navdanya. It was the two above touched upon overall developments – the broad manifestation of serious environmental damage in the wake of the Green Revolution and the far reaching embracement of the paradigm of global liberalism – that provided the breeding ground of the organization early endeavors to promote and establish organic agriculture in the region in question – almost fifteen years before the first efforts from official side. However, more extensive information on Navdanya - its fundamental ideas, functioning, schemes and effects - will be given at a later stage.

For now, suffice it to point to the fact that, while Navdanya's well-known and rather charismatic leader Dr. V. Shiva had made the first efforts already in the mid 1980s and her organization's work by the mid 1990s had gained her wide international reputation, it was not until the beginning of the new millennium that bringing 'organic' to small and marginal farmers started to receive considerable acknowledgment and concrete support from official side. For five years - which was exactly the proposed length of the DASP pilot project - no further major initiatives were taken up

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175 'Despite strong statements favouring the pursuit of the nationalist 'swadeshi' ideology of the Bharatiya Janata Party (...) policies favouring economic liberalisation and investments by foreign multinational corporations have not been altered drastically. In fact, ministers of the government repeatedly assure investors that economic liberalisation in India is irreversible.' (Panini, M.N. 1999: 721)

and so it was only in 2003, the very year in which the first national seminar on 'Organic Farming for mountain States' was held in Dehradūn, that the 'Uttarakhand Organic Commodity Board' (UOCB) came into existence. Registered as an independent body, it is controlled and partly funded by the state government<sup>176</sup>. Its main mission is to act 'as the nodal agency of the state to enhance *organic activities in agriculture* and allied sectors like Horticulture, Medicinal Aromatic Plants & Herbs and animal husbandry through out the state<sup>177</sup>. However, the UOCB is not very much visible in the districts or villages since, according to internal statements, its primary task is to merely develop the technical modules for capacity building and farmers' trainings in organic agricultural methods and control and certification systems<sup>178</sup>. The UOCB is generally unconnected to local NGOs, but has recently taken up working with a very small group of non-governmental grassroots organizations in order to intensify efforts in the field of social mobilization and on-site group formation of organic producers. Extension workers are not sent to the villages but rather, the schemes that are prepared are then implemented and carried out in the districts by the extension departments of the respective sector. In matters of agricultural training and practical demonstrations, the UOCB also runs a training center and farm near Ranikhet in Almora, one of the eastern districts of Uttarākhānd. At present close to 60,000 farmers who are working on over 40,000 hectares come under the UOCB's wing and it is clear that the UOCB's main objective is pushing forward the development of mountain farmers' communities in the state. Since mountain populations in the area are quite poor and there is hardly any scope for worthwhile development of conventional agriculture - as will be shown during the following in detail - organic is seen as a means of enhancing rural livelihood security and increasing farmers' households stability. The sustainable and resource-protecting use of soil, water and biomass becomes an increasingly important issue and it is accepted that a broad introduction of organic agriculture heavily fosters important ecological aspects which are closely interwoven with mountain farmers' livelihood security. However, positive development is still largely associated with generating additional incomes. The 'rhetoric of development as growth'<sup>179</sup> is applied in the same way to both conventional and organic agriculture. Generating additional income and creating more employment is seen as the strategy of rural development per se and the terms 'premium prices', 'surplus' and 'production' are frequently used<sup>180</sup> in the vocabulary of the UOCB's agenda. In view of this, although the Board is not involved in direct trading and marketing, it aims at systematically facilitating buyer-seller contacts through creating direct

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176 Funds are also raised from different funding agencies at what the 'Sir Ratan Tata Trust' is the most important.

177 Uttarakhand Organic Commodity Board. Website: <http://www.organicuttarakhand.org/aboutus.html> (retrieved on 14.01.2011)

178 See: Methodological Appendix I/1: Excerpt from interview with B. Shaw on November 29<sup>th</sup> 2010

179 Ghai, R. & Kumar, S. 2011: 20

180 See: Methodological Appendix I/2: Excerpt from interview with B. Shaw on November 29<sup>th</sup> 2010



procurement connections and with this model has been able to market products worth approximately 10 crores of Rupees in 2010. Since at this point in time, there does not exist any domestic market potential worth mentioning, it is tacitly accepted that this produce was largely made up of internationally marketable goods, possibly also niche products to cater to the needs of domestic high-profile customers.

Apart from Navdanya and the UOCB there exist, of course, a number of other organizations – be they official departments, commercial bodies or non-governmental entities – that until today have included the promotion and dissemination of organic agriculture in their agenda<sup>181</sup>. And it is important to realize that each organization has its particular tendencies, views and opinions on organic agriculture which shape the latter's particular local manifestations and give weight to different aspects - from the development of economic progress to promoting regional socioecological stability to the participation in political issues of global dimension.

While the last chapter dealt with the historical development of India's agricultural sector, linking it to actual discourses on food insecurity, poverty and environmental threats where - closely related to these issues - an ever growing sense of urgency has become a major driving force behind the promotion of organic farming, the fundamental reflections presented in detail at the end of the first chapter showed it to be a necessity to 'ground' the comprehensive investigation of organic agricultural production in narrowly limited local 'fields of practice' for several good conceptual and methodical reasons. At this point of the here presented study, however, it must be added that in order to understand what organic farming really means in its different contexts and manifestations, one has to acknowledge the fact that local sites, however marginal and remote, are far from being homogeneous and easily accessible and comparable but rather that they are complex fields comprising different agendas and interests which neither do not all originate there, nor are they all played out there. Being ultimately entangled in global nets of significance and thus charged with a multitude of political, economical, social and environmental objectives and meanings, localized forms of organic agriculture are quite naturally subjected to the influence of various bodies and organizations that are involved in the different activities concerning the dissemination, promotion and consolidation of their respective ideas and objectives. In fact, it is the overall interplay between external and local forces and their particular characteristics that give shape not only to specific configurations of certain agendas, but also to individual farmer's approaches towards organic agriculture. As illustrated above, it was primarily through the influence of Navdanya that organic

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181 For example also the 'Info International Educational and Welfare Society' (IIEWS) in Rishikesh:

<http://www.iiews.com/activities.html> (retrieved on 24.01.2011)

Or the 'Ambuja Cement Foundation' (ACF):

[http://www.ambujacementfoundation.org/statewise\\_spread/uttarakhand\\_activities.html](http://www.ambujacementfoundation.org/statewise_spread/uttarakhand_activities.html) (retrieved on 27.02.2013)

farming has come to play a role in local agricultural communities in western Uttarākhand. One might even say that Navdanya, through its substantial and practical involvement in this context, has assumed a crucial leading role in preparing the field for other organizations and agencies, and it is certainly thanks to the organization that, in comparison to the rest of the country, Uttarākhand has a rather long tradition in organic farming. Over the two and a half decades, the state has been some kind of open air laboratory for different kinds of agendas related to organic agricultural production - and surely Navdanya has come to play a major role in that. Today, the organization has managed to establish a rather extensive network of farmers, seedbanks, activists and other organizations which extends even beyond national boundaries and is quickly expanding. The researcher can easily trace the organization's 'footsteps', thus following the movements of organic agriculture in the region in question. Therefore, the hill areas of Uttarākhand provide the optimal basis for the comprehensive investigation of the transformative potential of organic agriculture since there already exists some kind of 'organic historic archive' - both in the experiences of local organic farmers and Navdanya's employees. However, even if there are important key figures such as Dr. V. Shiva - who has profoundly influenced the way organic agriculture is perceived in various contexts - it cannot be considered to be mainly the product of a single person's agenda or creativity. Rather, the here presented study suggests, that organic agriculture must be seen as the result of distributed action and evolution over time where multiple local, national and transnational connections and influences - which in turn are based on heterogeneous historical processes and developments - are shaping particular configurations of organic agriculture. However, there exists a specific point of physical 'grounding', a moment and circumstance of transfer. At this juncture, the rather abstract term 'organic' ceases to be a mere concept or idea and enters the sphere of physical implementation with the soil being prepared, seeds being put in the ground, plants nurtured, crops harvested, harvest stored, food eaten. From this perspective, it is the rural communities, households and individual farmers of particular mountain villages in the state and their direct and actual experiences with organic agriculture, who will be at the very core of this research. They represent the crucial point of intersection, where it is their unique expertise and specific needs, emerging from and tailored to suit particular environmental and socioeconomic conditions that actually fill up the term organic agriculture with concrete meaning and living content, thus keeping it from turning into a stale, interchangeable and lifeless label. The here presented study presumes that it matters what people do and during its course it will be shown how also marginal rural farmers are invested with a certain agency which plays a decisive role in the process of generating, adopting, translating, disseminating and transforming organic agricultural practices. Moreover, it perceives an essentially actor-centered perspective to be an adequate starting point and tool of analysis since human development can only

be measured in light of individual statements, experiences and actions. However, with the mountain state of Uttarākhand as focal point of this study for the above outlined reasons, accordingly, as a next step, I shall zoom closer into the locality, thus making the reader familiar with the exceptional and highly important and influential geographical characteristics of the area in question.

### **3.2.1 Saur Village: Vertical Topography & Fragmentation**

Out of the corner of my eyes, high up above the narrow path amongst big yellow boulders and thorny scrub, I observe something moving. Looking up, I have to shade my eyes against the bright afternoon sun pouring its light over the splendid alpine landscape. In this altitude, at almost 2,500 meters above sea level, one catches a sunburn as easy as if one was spending the day on the beach. Although by now, I have already spent a considerable length of time up here, I still have to be permanently aware of the increased solar radiation and its effects on European skin – even on slightly cloudy days. Today the weather is exceptionally good though, and I estimate the way back to the safety and comforts of my new home and family-for-a-time in Saur village not to exceed another three or four hours. After adjusting my eyes, I identify the moving thing up the steep slope to my right as one of those sturdy little cows which are kept in these regions and which look so much more clumsy and ungraceful than the cattle they keep in other, flat regions of India. The milk of those mountain cows however is exceptionally rich and tasty and when being asked about why that is so, people immediately refer to the fresh and aromatic grass and herbs those cattle would feed on. Many times, they let them wander freely through the mountains and the cows would stay outside and graze for days or sometimes weeks without anyone taking care of them. It is for this reason that cows are being killed rather frequently by wild animals in these areas and more than once have I seen carcasses of cows and goats which had been cleaned neatly by both vultures and insects. The vast and mostly uninhabited forests of the western Himalayan region of Gaḍhvāl are home to a number of mammals that are feared because they can be quite dangerous but even more so since they frequently destroy fields and crops and cause great damage.

It must be early afternoon now and even though there's not a single cloud in the brilliant blue sky, I am fully aware that mountain weather is quite unpredictable – so I want to take the opportunity to head for home whilst the narrow mountain paths are still dry and safe to walk. I stop watching the cows grazing on their meager and rocky pastures, and I gaze out over the magnificent landscape, down into the valley to my left. An estimated 800 metres in altitude further down, a small river meanders its way through light forests of 'Devdār' that cover the lower slopes of the valley. Now, in mid-march, the whole woodland scene is dotted with bright red spots of lushly blooming, wild

hibiscus trees. Exactly opposite, higher up on the other side of the valley, I can see the apple orchards and potato fields which the residents of this area have terraced four hundred metres above their village. In another months time, they will also drive most of their cattle up there to let them graze on the sunny and green adjacent alpine pastures. A little further down, at an altitude of almost 2000 metres, lies today's hike's goal: Saur village to which I am now returning after having spent two days visiting the amaranth-growing people of a neighbouring village. Being taken in by the beauty of the surrounding mountains, I decide to rest for a little while before continuing my descent. I put down my backpack, settle myself comfortably on a tiny patch of grass and taste a few sips of springwater from my bottle, all the while still enjoying the fantastic view over the other side of the valley.

The single most characteristic feature of Saur is, hardly surprising, its embeddedness in the imposing mountainous landscape prevailing in many parts of the Indian Central Himalayan region. The village is part of Uttarkashi district which in turn is located in the north-western corner of Uttarākhāṇḍ state. Here, lofty mountains and high hills ranging in altitude up to 3500 metres above sea level dominate the scenery. However, to describe this mountain scenario in concrete, definite terms turns out to be a quite difficult task since mountain regions in general are far from being uniform. On the contrary, an ecosystem that qualifies as a mountain typically is characterized by a relatively sharp vegetational variation along a sloping terrain and contains several narrowly juxtaposed ecozones which are governed by a complex of highly varying factors. These ecozones – or biomes – are horizontally layered down a mountain while, at the same time, also correspond to vertical factors such as precipitation, sunlight intensity or soil conditions. Moreover, they are affected by quite harsh climatic conditions and extreme natural phenomena such as hailstorms, strong winds, erratic rains, snowfall and great temperature fluctuations which occur over very short distances. Due to their dynamic and unstable nature, mountain environments tend to be extremely fragile and highly vulnerable. Resilience to ecological imbalances - caused either naturally or by humans - is very low and arises primarily from steepness, isolation and low temperatures. Endemic species which have evolved in relative isolation are easily threatened by introduced species and the time scale of ecosystem recovery is much broader than in the lowlands.<sup>182</sup> Needless to say that the performance of agriculture in mid- and high-altitude mountain areas is severely affected by these rather difficult and challenging conditions. Moreover, mountain soils by and large are problematic soils. Since soil formation occurs very slowly, they tend to be thin, young and vary greatly in texture and depth, often containing high proportions of gravel. They are highly vulnerable to

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182 Byers, E. 1995. Byers, E. 1995. Mountain agenda: Environmentally sustainable and equitable development opportunities. <http://www.mtnforum.org/sites/default/files/pub/1012.pdf> (retrieved on 25.03.2012). Here: p.3

erosion and eluviation and the build up and maintenance of fertile soil layers is far more difficult and time-consuming than in the plains. In addition, exposure to sunlight, for example, over the mountain slopes remains crucial for cultivation activities since the absorbed amount of sunlight directly affects soil temperature, snow cover, moisture retention and crop maturation rates.

It is not surprising, then, that there exists no universally agreed upon definition of a 'mountain'. In fact, if it comes to adequately describing the geocological characteristics of mountain regions, rather than to draw back on generalisations or – even worse - stereotypes, it is much more important to carve out regional environmental key features and particular local ecozones. Thus, mountain ecosystems are highly complex and it is precisely these individual ecological settings and particularities that make it both difficult but all the more interesting to deal with mountain agriculture. Being surrounded by rather steep hills, native forests and hundreds of tiny plots of terraced agricultural land, Saur looks identical to most other villages of the region. The surrounding mountain landscape holds unique ecological niches and seasonal and locally restricted resources which have to be exploited over a wider range of different climatic zones and ecosystems. Thus, the bulk of the village's farmland is concentrated at mid-altitudes<sup>183</sup> since this ecozone provides the most suitable niche for cultivating most of the food crops. The latter include rice, wheat, millets, a wide variety of vegetables like tomatoes, potatoes or peas and almost all temperate fruits such as peaches, apples, apricots and plums. High-altitude<sup>184</sup> agricultural conditions cater for the supply of still different foodgrains and fruits, typically less common cereals such as amaranth, barley, buckwheat or chenopodium and a great diversity of nuts, berries, and temperate fruits. Alpine meadows in the Greater Himalayas just adjacent to snowline are used for transhumant pastoralism and for the collection of wild-growing aromatic and medicinal herbs.

By far the largest proportion of crops in the region are raised in rainfed conditions and usually, there is abundant rainfall. The main source of planned irrigation are natural streams and – where topographical features permit - water is conveyed to the fields via diversion channels.

Uttarkaśī's area under agriculture amounts to a meager 3.4% while forest area constitutes 88.8% of the whole region<sup>185</sup>. In the district, the average landholding is only 0.95 hectare while as much as 67.5% of all agricultural holdings are marginal with an area of as little as 0.3 hectares. In addition, even though the bulk of agricultural land tends to be located at certain favourable sites - that is to say in terms of steepness of slopes, solar radiation and subsurface conditions – individual holdings always show high degrees of fragmentation<sup>186</sup>. When being asked about how much cultivable land

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183 Roughly between 1200 and 1800 metres in altitude.

184 Roughly between 1800 and 3000 metres in altitude.

185 Mittal, S. Tripathi, G. & Sethi, D. 2008: 24

186 See above: 15

there is in their possession, the farmers of Saur village regularly indicate widely differing data. Of course, in this matter it is the potential and fertility of the land that is of crucial importance to the farmers – i.e. they would rather refer to matters of quality than quantity. It is also true that, since virtually all cultivable land in the area is terraced land and therefore each plot quite unique in shape and size, even approximative estimations must not only be doubted for their accuracy but also challenged for their actual relevance. Nevertheless, the point to be made here can be demonstrated thus: When requested to outline his families' landholdings, a farmer skilfully draws a rather detailed map of his property<sup>187</sup>. As can be seen clearly from it, the family owns several plots of land scattered over numerous slopes all around the village. However, most of the fields are located well below the village, some of them almost as far below as the river at the bottom of the valley. The family even owns a little house there because, as the farmer explains, it would be way too stressful to climb all the way daily. Instead, whenever there is work to be done on the fields near the river, he stays there for a couple of days. It is for this reason that not just regions or villages encompass different ecozones but even individual farmers' holdings are fragmented in such ways that quite frequently, they are situated within different ecological environments and ecological niches. Thus even individual farmers' lands are subject to extreme variations in environmental conditions and - therefore – levels of productivity. It becomes evident that in this scenario, agricultural land constitutes an extremely scarce resource which in addition is characterised by high levels of fragmentation.

### **3.2.2 Saur Village: Inaccessibility & Subsistence Agriculture**

The water tastes very good and fresh as usual and out of my small backpack I take a pair of binoculars in order to take a closer look at the numerous ant-sized men, women, children and bullocks who are busily at work on the countless fields surrounding Saur village. From my excellent vantage point it can be seen very clearly that the houses of the village nestle to the steep flanks of a broad valley as if seeking protection from the harsh weather and how the whole village is criss-crossed by narrow, roughly paved alleys and slippery walkways.

It is not until one looks at the village from a distance that one realizes quite how much arable farm land there exists on its slopes, or rather, how generation after generation of farmers must have made incredible efforts in order to wrest metre by metre of level ground from those mountains; how their wives and daughters must have carried basket after basket of cow dung, straw and rotten leaves in order to build up layers of fertile soil; how they built rough stone walls to support the fields' edges

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187 See: Methodological Appendix II/ Picture 1

or drained the ground year after year in avoidance of landslides and erosion. The whole village of Saur is surrounded by hundreds of small pieces of terraced land which are constantly being worked and the deep shades of brown and beige, speckled with fields of lush green colour make the scene look very friendly and leisurely<sup>188</sup>. To cultivate these plots, though, is very hard work and hardly romantic. The great steepness of the slopes makes an efficient, mechanized cultivation impossible. The fields are plowed and levelled solely through the use of animal power, that is, bullocks. Any other agricultural operation, be it sowing, spreading manure, weeding, harvesting or threshing, is done in the most elementary way there is – by manpower. Of all the hill districts, Uttarkaśī has the maximum livestock<sup>189</sup> with lots of cows, bulls, sheep and goats.

Moreover, the circumstance that virtually all agricultural land around Saur village is not only quite difficult to cultivate but usually also fragmented into small and smallest segments points to the area's high level of inaccessibility where the concrete manifestations of remoteness have a profound and encompassing effect on not just the social systems but also the overall socio-economic situation of mountain communities. Byers gives a very useful summary of the situation:

‘Infrastructure and services are generally lacking, especially in education, health, and agricultural extension. Transport costs are high, markets are distant, and the value-added cost of goods and services severely limits production flow both in and out of mountain areas. High investment costs further limit infrastructure and economic development.’

(Byers, E. 1995: 3)

However, Saur is not really a typical example in this respect: Even though Byer's assessment is largely applicable to the here introduced context, Saur village is located only a few minutes on foot from the last stop of the official bus line to the state's capital city of Dehrādūn - which puts it in a much more favourable position than most other mountain villages within the region. There are two daily buses but only the first one, leaving the village around 6.30 in the morning, will take you all the way down to Dehrādūn since it takes at least ten to twelve hours to cover the distance between the two. The road is in a very bad condition pretty much all the way, especially, so I was told, after 2010's heavy monsoon rains which have caused great damage and reconstruction is painfully slow. Most sections of the route lack proper road surface and long distances are just covered by debris, gravel and medium-sized rocks, punctures therefore being a common reason for delays. Over large parts of the year, the road is closed due to snowfall and danger of erosion which cuts off the affected villages from the rest of the world for several months at a stretch. And even if the road is passable to buses, the journey still is a dangerous undertaking and extremely uncomfortable. Traveling in one of

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188 See: Methodological Appendix II/ Picture 2

189 See: Mittal, S. Tripathi, G. & Sethi, D. 2008: 23

those extremely overcrowded Indian public buses in the plains is a very annoying and, yet, rememberable experience; A busride in the mid-altitude mountain regions of Uttarākhand, however, is a very undesirable venture altogether. The vehicle rolls and pitches rattling down the steep slopes and narrow bends, neither antilock brakes nor power steering supporting its weight and manoeuvrability while the driver smokes and talks on his cell at the same time; far too many passengers are cramped together, people even sit on the roof of the vehicle or hold on to the aluminium rails at its back; While several children cry at the same time, their mothers have animated conversations about how to prepare certain dishes or feverishly discuss the local marriage market. Older people groan from the effort of sharing a single row of seats with four other adults and seven children who are fast asleep in all kinds of awkward positions while the young ladies, whose delicate stomachs are not used to being thoroughly shaken, are busy making miserable faces which they stick out of the windows regularly. And every now and then, out of the hidden depths of this chaos of limbs, bundles, voices, screams, snores, smells and moans, there would bleek a lonely sheep. If one wants to travel to another village further down the road after 8 o'clock in the morning – which is when the second public bus leaves – one has to wait for one of the off-road-vehicle share taxis that connect the villages during the day. In order to make their work pay, the drivers cram as many passengers as possible into their vehicle which is why they never leave before the car is fully packed and thus operate at highly irregular intervals.

But in spite of the unsteady, troublesome and perhaps even dangerous transport connection, it is nevertheless this poorly maintained road which makes a big difference to the people of Saur when compared to other mountain villages in the area. Thanks to its close proximity to the public transport connection, it is still relatively well connected and therefore somewhat exceptional in terms of inaccessibility. Although it still is an exhaustive and time-consuming venture to travel there, Saur is much easier to reach than many other villages in the area - even though over large periods of the year, even the connected villages become nothing less than impossible to reach. It is nevertheless the case that the above-quoted situational classification applies to most of the tiny mountain villages which are quite numerous in the area. Most of them, even if their distance from Saur village does not exceed a few kilometres as the crow flies, can be reached only by strenuous trekking on foot or horseback and even if the conditions are good – that means if there is no snow, no hail, no rain, no slippery, frozen or otherwise damaged trails, no landslides and no eroded slopes, it might take days to finally reach there. It is for the same reason that each and every 'external' good that is consumed in those villages – be it sugar, tea or plastic chairs – has to be carried there either on animal or human back. The same accounts for the – mostly agricultural – products that are transported *from* those village to the next place having access to public transport networks.



Therefore, due to its direct connection with the 'outside world', Saur village has not only gained the reputation of being the starting point for tourist trails to the famous 'Har ki dūn'<sup>190</sup> and an extensive network of mountain paths winding through wide pinewood forests from village to village, but has also become the nucleus of organic agricultural activity within the region.

This remoteness, in connection with the dense juxtaposition of ecozones and ecological niches usually implies less disturbances by external influences. Mountain regions therefore often act as a sanctuary for plants and animals and hence an increased biodiversity<sup>191</sup>. On the other hand, however, if any disruptions occur its effects become more noticeable and more difficult to correct. In addition, the compulsion to cope with difficult environmental conditions while being largely self-dependent, over time has promoted local innovative activities and thus contributed further to an increase in local crop diversity and livestock breeds. For example, in the area of Saur and its neighbouring village Sānkrī alone there exist about a dozen different varieties of Rājma<sup>192</sup>.

The commonly high degree of inaccessibility and isolation also sets the conditions for the predominantly subsistence-oriented economic system prevalent in the area in question. Chiefly, the people of Saur live on what they harvest. True, they also import a certain number of goods which are then mainly sold in the local convenience store, but most of the foodstuff that is being consumed comes from the villagers' own local cultivation. Also, one must not forget that, due to its close proximity to the public transport connection, the village is relatively easy to reach and therefore rather well supplied with various commodities. However, many other villages in the state are accessible on foot only and all kinds of goods - from pop star posters right up to additional foodstuff - are taken there solely on animal and human backs. Therefore, by and large, mountain farmers in Uttarakhand survive on subsistence agriculture. Being, as Frohberg and Abele remark, 'probably the least understood and the most neglected type of agriculture'<sup>193</sup>, however, undoubtedly of the greatest importance for the understanding of local economical structures within the given context, it might be quite helpful to have a closer look at this concept:

The 'Britannica Online Encyclopedia' defines subsistence farming as a 'form of farming in which nearly all of the crops or livestock raised are used to maintain the farmer and the farmer's family,

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190 'Har ki dūn' is a cradle-shaped valley at the base of the mountain Fateh Parvat in the very north-western part of Uttarkaśī district. The valley is located at an altitude of about 3,500 metres and, starting from Sānkrī, it can be reached (only) on foot within three to four days.

191 Rhoades, R.E. 1992 argues that: 'Mountains provide the life support systems that contain virtually all of the wild species and ancestral landraces of the major crops (potatoes, maize, rice, barley, and wheat) providing over 80 per cent of the human caloric intake and nutrition'. p. 257  
for further reading see also: <http://www.icimod.org/>

192 Kidney beans.

See also: Methodological Appendix II/ Picture 3

193 Frohberg, K. & Abele, S. (eds.). 2003: 7

leaving little, if any, surplus for sale or trade (...)’<sup>194</sup>. The first and most prominent characteristic of this kind of sustenance is thus the high degree of own consumption of produce, typically allowing the farmer’s family only a marginal standard of living. This is attributable to various factors in varying degree which concern the means of production. Subsistence agriculture is not capable of producing a considerable surplus because it is usually practised on little land with simple methods and low capital endowment. In addition to its low degree of productivity, subsistence agriculture typically is also characterized by a low-external input level<sup>195</sup>. This basically means that the farm productivity is supplemented either by reuse of on-farm inputs such as dung and straw, or by incorporation of locally available and cost-free biomass, for example leaves or grass collected on common properties. Subsistence holdings are thus of very low competitiveness – a fact which is often bolstered by remoteness to urban centres and poor market access which again means two things: First, in physical terms such as transportation routes, public transport or telecommunication facilities; And second in terms of access to capital markets, yet another prerequisite for successful market-oriented production. Therefore, generally speaking, subsistence agriculture is practised predominantly within structurally weak, poorly developed regions where there exists a scarcity in alternative sources of income, let alone the very fundamental means of significantly advancing agricultural production beyond the level of own consumption. Brüntrup and Heidhues provide a concise summary: ‘In these situations agriculture is generally the dominant economic activity, thus allowing subsistence and agriculture to appear identical’<sup>196</sup>. This situation is clearly applicable to the present context of Saur village and even more so to other, remoter villages in the area where a large proportion of all agricultural activities are subsistence-oriented. Nevertheless, of course, virtually all farmers are working towards the production of a surplus of marketable cash crops, for example potatoes, Rājīmā or apples. They depend on monetary income largely for the arrangement and hosting of marriages and for buying agricultural inputs or additional livestock. They also pay relatively large sums for their childrens’ education for which the latter are sent to the larger towns or, for higher educational purposes, to one of the mushrooming engineering colleges in the middle of nowhere, or maybe even to the state capital itself. It goes without saying that people also spend money on supplementary foods – for example edible oils and fruits – and consumer goods. These expenditures, however, are of limited magnitude and by no means as substantial as marriage

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194 Encyclopaedia Britannica. Website:

<http://www.britannica.com/EBchecked/topic/570994/subsistence-farming> (retrieved on 20.10.2011)

195 Brüntrup, M. & Heidhues, F. 2002. *Subsistence Agriculture in Development: Its Role in Processes of Structural Change. Discussion Paper No. 1/2002*. University of Hohenheim: Department of Agricultural Development Theory and Policy. [https://entwicklungspolitik.uni-hohenheim.de/uploads/media/DP\\_0\\_2002\\_Bruentrup\\_02.pdf](https://entwicklungspolitik.uni-hohenheim.de/uploads/media/DP_0_2002_Bruentrup_02.pdf) (retrieved on 20.10.2011)

196 See above: 1

expenditures, education fees and investments in agricultural productivity. And even though the people of Saur village definitely focus on generating monetary revenues through their agricultural activities, at the same time by far most of the local produce is in fact eaten by themselves and their families and there is only very little vendible surplus.

### **3.2.3 Saur Village: The Multi-Component Farming System**

Suddenly, the sound of distant chatter and soft laughing reaches my ears. I turn my head and notice, a little further up the path, a small group of women in colourful clothes, each of them carrying strapped to her back a huge bundle of green twigs or gnarled firewood. The loads are strapped to their backs which is why the women are walking hunched-over, albeit chattering away in a lively way. Apparently they belong to one of the more isolated villages I have just passed on my way back to Saur, and, moving in the opposite direction, they quickly disappear from my sight.

In virtually all mountain villages of Uttarkaśī district - and Saur is clearly no exception here - the dominating farming system consists of four major components, all closely interwoven with one another: Common lands - such as forests, meadows and pastures -, agricultural land for crop cultivation, livestock and households as part of the village community. This 'multi-component farming system', with each component as an integral, indispensable part of the whole, constitutes the basis of livelihood for practically all of the agriculturists in the district. In the multi-component farming system, due to the above-described challenging environmental conditions, all elements are highly interdependable and fundamentally sustain each other through contributing both directly and indirectly to the overall stability of the whole system.

Common public resources or 'support lands'<sup>197</sup>, for example, are a constant source for directly extractable products such as timber, fodder, fuel wood, fruits, berries and herbs and the women of Saur village almost everyday swarm out into the surrounding forests to collect one or the other in endless hours of strenuous work. Basically, forests constitute the principal source of green foliage of trees and other perennial plants which are used for animal fodder, bedding and composting. Roots of trees and shrubs bring up minerals and other important micronutrients to upper soil layers, thus supplementing and increasing soil fertility and providing micronutrients to more shallow-rooted crops. Apart from nutrient cycling, however, forests also support large parts of the local plant and animal biodiversity – including wild foods, mushrooms and medicinal plant for human consumption

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<sup>197</sup> The term 'support lands' actually pictures quite well the dimension of high mutual interdependence between various integral parts of the multi-component farming system. Kumar writes: 'Each hectare of agricultural land requires sufficient amounts of support lands (forests, grazing lands, pastures, etc.) for sustained productivity. Thus these lands form an interlinked system'. (Kumar, P. 2005: 156)

- and are responsible for moisture circulation and the lowering of evapotranspiration rates. Tree canopies can lower the impact of heavy rainfall, thus reducing runoff and increasing water absorption into the soil. In addition, since usually located on upper slopes, forest cover many times acts as windbreaker and provides protection to crop lands and villages against landslides and soil erosion. At least equally important are the common lands' indirect contributions: When mixed with animal excreta, forest biomass turns into organic compost manure – the major source of soil nutrients for agricultural land in the hill districts.

Livestock, another of the four major elements of the multi-component farming system, as a direct contribution provides provides milk, draught animal power, wool, meat, eggs and so on. However, of even higher significance to the overall stability of the multi-component farming system are again its indirect contributions: Livestock constitutes the 'bridge link' between common lands – forests, meadows and pastures – and agricultural land. Via the agency of livestock, nutrients are transferred from 'uncultivated' to 'cultivated' land – a process which guarantees sustained productivity of the anyway problematic and less fertile mountain soils. Through the incorporation of otherwise useless organic matter, this process does not only increase the proportion of biomass within the system but also provides the soil with various forms of nitrogen<sup>198</sup>. Since plant material is not only used as animal fodder but also as bedding material in the livestock shed, the above described transfer does not only materialize in the form of manure but, more frequently, in the form of a manure and organic-plant-matter mix which is typically collected in some kind of rudimentary composting facility - usually in a pit or heap - before it is transferred to the cultivated lands. Further increase in efficiency of this concept is achieved when the different strategies of both roughage eaters (cattle, buffalo) and intermediate feeders (goats, sheep) are integrated into the system<sup>199</sup>. As a result of this, the efficiency with which resources are used is substantially increased and biomass resulting from the exploitation of two different nutritional niches flows to the agricultural land<sup>200</sup>. Moreover, the supply of farm animals with feed in turn does not only supply manure and thus urgently needed recyclable nutrients but also the draft power required for crop production. These mechanisms and inter-related processes contribute to the health and fertility of the agriculturally productive areas while at the same time fundamentally stabilizing the fragile mountain environments. Kumar quite rightly remarks: 'Keeping this interlinked nature of the Farming System in mind is very important

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198 According to Pell, 'N in manure is present in several forms: (1) urinary nitrogen that is subject to volatilization and leaching, (2) fecal nitrogen of metabolic origin that is readily available for soil mineralization, and (3) fecal nitrogen that consists of the undigested feed'. (Pell, A.N. 1999: 35)

199 Tainton, N.M., Morris, C.D. & Hardy, M.B. 1996

200 While roughage-eaters eat unselectively and are equipped with considerable fiber-digesting capacity, intermediater feeders have a specialized lip structure, the philtrum, and produce a special kind of protein-rich saliva. Therefore, cattle and buffaloes are ideally suited for feeding on large quantities of foliage and crop residues while goats and sheep can easily grab the nutrient-rich leafy material from thorny scrubs and high-tannin legumes.

in understanding why a single intervention in a particular field may not yield the desired results<sup>201</sup>. It now becomes evident how not only the directly extractable products obtained from forests, meadows and livestock are valuable and useful, but how it is above all their deeply interconnected indirect contributions, which is of the highest importance to the overall stability and sustainable functioning of the agricultural scenario in question. There is no need to explicitly mention that both afore explained components' indirect repercussions are directed towards the long-term stabilization of agricultural lands which in turn do not merely yield foodgrains but also animal fodder and bedding material. Therefore, through their contribution to the permanently required maintenance of healthy and fertile soils, both the surrounding common lands as well as the livestock of Saur village form an integral part of the multi-component farming system - and thus also of its inhabitants' very basis of livelihood.

It is however essential to take an introductory look at the fundamental importance of the fourth segment of the multi-component farming system: the individual farming household. Although this usually remains implicit, the individual farming households primary assignment constitutes the overall management of the above mentioned indirect contributions - a fact farmers and household members are usually well aware of as will be shown later on. Farming households do not merely exploit particular niches in a targeted manner or make selective use of specific parts of the system; Rather, they exercise the most vital role of managing the various operations in order to provide optimal linkage between the system's individual components. Through effectively directing the flows that exist between these components - which means, in light of what has been established above, first of all the channeling of biomass flows out of support lands towards agricultural areas - farming households represent the crucial point of intersection between the system's different segments. They play the key role in the overall management of the system's components and are thus directly responsible for its overall stability and hence the sustainable productivity and proper functioning of the underlying agricultural scenario. With the farming household assuming not only the responsibility of collecting, distributing and channeling nutrient-flows but also attending to adequately balancing them in order to maintain and improve the overall stability of the total system where all components are integral and inextricably interlinked, this fundamental interrelatedness between people, soil, animals and the surrounding environment constitutes the most essential constant of agricultural production in the here investigated locality of Saur village.

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201 Kumar, P. 2005: 160

### 3.2.4 Saur Village: People

Although the nights can still be freezing cold in mid-march up here at this height, during the day the afternoon sun blazes down rather intensely on the mountain landscape which is why, after a short rest, I feel a little dizzy and therefore decide to move on.

A couple of hours later, after a quite demanding hike, I reach Sānkrī village from the east - with the slowly setting sun in my back. The narrow trail I have been following for the last few kilometres takes me past the village temple, through a cluster of the solidly built houses and finally leads me to the village's bus stop where it merges with the main road. From here, I can easily reach my present home within ten minutes of comfortable walking. The reason for this is that, as a matter of fact, Saur and Sānkrī are two separate villages that, however, lie at the same back of a mountain and are thus located very close to each other. Also, to be quite precise, the aforementioned bus connection to the state capital actually terminates in Sānkrī – not in Saur. At any rate, the people of the two villages live in close proximity and most families have close relatives in both communities. Also, in the evenings, the men of Saur village regularly take leisurely walks to Sānkrī in order to participate in the above described social life there. Therefore, shortly before it gets dark, one can regularly observe several groups of farmers deep in conversation returning from Sānkrī to their homes in Saur village. Small wonder, therefore, that suddenly I notice my host father C. S. as he unhurriedly strolls down the village street, his hands casually clasped behind his back, watching his surrounding with lively eyes. While I emerge from between the various small wooden shops and stalls lining the paved road, C.S. stops in front of the village's central convenience store. Here, one can buy everything under the sun – metal hooks and lumps of jaggery and plastic combs and rubber bands and distilled water and aluminium nails. During the day, mostly women and children come here to make additional purchases of flour, sugar or edible oil. However, after five o'clock in the afternoon, the broad pavement in front of this 'shopping mile' becomes the social center and the men of the village enter the scene. They walk up and down, they exchange greetings and cigarettes, they buy nails or pieces of wire or whatever their wives have told them to bring for dinner. They smoke, chat, drink tea and eat deliciously greasy pakorā. They exchange information. Walking up to C.S. to greet him, I realize that he is engaged in conversation with another farmer, the latter gesticulating over some kind of metal hook which C.S. is holding in his hands. So I decide not to disturb him and instead leave Sānkrī and head home to Saur. Crossing a small stretch of Devdār forest, I reach my final destination already after a couple of minutes. While Sānkrī largely spreads out on two adjacent plateaus, Saur village is nestled to the steep flanks of a mountain. Thus being laid out like a typical remote mountain village in the region, it is also criss-crossed by narrow, roughly paved alleys and slippery walkways which are transformed into small streams when it rains. Moreover, in contrast to

its neighbouring village whose houses - depending on which plateau you look at - are either grouped along the last few metres of the paved road or clustered around a main square, Saur does not have a real village 'centre'. Most of the village's houses are rather typical examples of the traditional architecture of the region and will be explained in detail a little later. But also from the perspective of local livelihood activities, Saur village is quite exemplary in that agriculture constitutes the single most important economic sector and means of livelihood for the largest part of its population: each of the nearly three dozen households lives off agriculture. The people of Saur are part of a substantially self-sustaining community which is, and always has been, essentially preoccupied with agriculture and animal husbandry. They are deeply rooted in agriculture, they have grown up in an agriculture-based society. The main topic of conversation here is agriculture and most people perceive their personal identity being essentially related to agricultural activities and the working of the land. Apart from the great majority of households who directly live on farming, thus earning the largest portion of their livelihood through agricultural activities, in Saur village there also live three carpenters and their families who attend to the numerous construction works and production of furniture and all sorts of tools. In addition, on the periphery of the village, there have settled two Nepalese families who do whatever lower-paid work there is - excavating construction pits, carrying building materials and so on. They do not own farmland. However, they cultivate vegetables on little kitchen gardens around their houses. Also, everybody keeps some livestock and even behind the Nepalese labourers' cottage, there's a cow and its calf, both tied to low wooden posts. Therefore, even if people also engage in other activities like woodworking, public transport, construction work, mule-driving or the few local government services such as education or health support, they still cultivate a piece of land, however small it may be.

As it happens, while crossing the village, I see B.S. and his brother S.S. sitting in front of the latter's house. Both being farmers whom I have come to know rather well over the last few weeks they seem to be quite pleased to see me and the moment I agree to their invitation, as if by command a young girl emerges from S.S.'s house carrying a steel tray and a small woven basket containing some fresh and appetizing apples. Having placed the items on the narrow wooden bench on the building wall in the typical modest and obedient way that befits young Indian girls when serving their father's guests, she disappears as silently as she has emerged. Meanwhile, S.S. pulls close one of the plastic chairs which are common in every household and which I am supposed to use as seat. Apart from me, B.S. and S.S., there is another farmer present whom I don't know yet. Soon, everybody is happily munching away on juicy slices of fruit which are especially delicious when sprinkled with a little red chili powder. So while we are enjoying our healthy fruit snack, the men enter into conversation with one another and soon are busy discussing prices for agricultural

products. In the course of the conversation, B.S., who not only is a very energetic and communicative person but who also has just returned from an inspection round of his most recently laid out apple orchard, delivers to the listeners a speech on home-made organic pesticides and how to naturally increase pollination efficacy. As is his habit, he quickly gains momentum and, because I already know most of the story, my eyes wander towards the other side of the village where now, with the day drawing to a close, also the last farmers are returning from their adjacent fields. To be precise, the term 'farmer' here is somewhat misleading since it is actually women who do most of the work. That women are usually responsible for the household, raising children, nursing sick or old family members as well as collecting firewood and fodder leaves from the surrounding woods, is usually taken for granted; Moreover, in the here presented context, women are furthermore involved in most agricultural activities to a very substantial degree. With the men usually taking a leisurely stroll to Sānkrī already in the late afternoon, many farming women return from the fields not until shortly before sunset. As Binita Shah, Program Manager of the Uttarakhand Organic Commodity Board in Dehradun, puts it:

'And let me tell you the women of this place are very different. They, in fact, are the ones who are the farmers. Excepting for plowing the field, they're doing everything else. ... Whether it is the seed... whether it is...ah...you know, the...they...the composting part, the animal part, the bringing in of biomass part...the...the harvesting part. The women have...ah... loads of knowledge'<sup>202</sup>.

It is this the fundamental reason for the fact that quite often, while the village men tend to enjoy themselves in the role of farming experts, it is actually their wives and daughters who not only possess much deeper theoretical knowledge than their husbands and fathers, but who are also endowed with lots of practical experience. Therefore, when investigating the agricultural scenario of Saur village, womens' role in and influence on agricultural activities and operations can hardly be overestimated, and it is thus not only absolutely justified but to a certain extent also necessary to 'genderize' the practical research approach. Thus, in the following, it is important that this fact be kept in mind when there is talk of 'farmers'.

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202 See: Methodological Appendix I/ 3: Excerpt from interview with B. Shaw on November 29<sup>th</sup> 2010



### 3.2.5 Saur Village: Marginality

According to the 2011 census, Uttarkashi district has a population of 329, 686<sup>203</sup> with 92,65% of the population living in villages. From a very pragmatic point of view, since there clearly exists a connection between the socio-economic status of a farming household and the area of agricultural land that is cultivated, the Government of India identifies farmers who own less than two hectares of land as 'small and marginal farmers'. In fact, if one adheres to this threshold figure, small and marginal farmers make up 80.3% of all farmers in India! With the average landholding in the area comprising only 0.95 hectare, clearly the overwhelming majority of all agriculturists in the district officially fall into the category of 'marginal' farmers. Agricultural land is by far the most precious and at the same time also the most scarce resource. Due to it being not only very limited but also highly fragmented, in the hill regions of Uttarākhāṇḍ there even exists a specific measuring unit of agricultural land: the nālī. The fact that it comprises only a very little fraction – approximately one fiftieth<sup>204</sup> – of a hectare goes to show just how valuable even tiny pieces of arable land are. Official approaches towards identifying marginal scenarios frequently rest upon quantitative data and are usually closely associated to production capacity. Thus, with most Indian farmers living on subsistence agriculture and extremely little land, according to FAO statistics, a marginal Indian farmer does not work even on one but rather on an average of less than 0.4 hectares.

However, even though it is clear that agricultural land constitutes the key resource and primary basis of livelihood for millions of Indian agriculturists, it should have become clear by now that in the present scenario, agricultural success and, associated therewith, the cover of basic needs such as food security, housing and education, depends on more than just the quantity of farmland or agricultural output: The mountain farmers of Saur village are facing massive difficulties posed to them by their natural surrounding. So very high is their dependence on stable and favourable natural conditions in so very unpredictable, dynamic and sometimes hazardous an environment that, even without the impact of greater unforeseen natural calamities, crop performance and agricultural success at its very base becomes a risky enterprise. It is not just the sheer number of influencing climatic, geographic and meteorological factors, but rather their unpredictable combinations and amplified impacts on highly delicate and interdependent ecological networks which may lead to extreme fluctuations in the productivity of mountain crops. Here, ecological fragility stands in direct proportion to economic vulnerability, agricultural success, crop performance and - ultimately - also food security.

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203 Population Census India. Website: <http://www.census2011.co.in/census/district/574-uttarkashi.html>  
(retrieved on 21.02.2012)

204 While other traditional measuring units – for example the bighā - partly show great variations, the nālī seems to be used quite uniformly. This may be because it is used only within a very limited geographical area where, in addition, agricultural holdings and suitable land for construction is an extremely scarce resource.

In order to take into account these highly complex and interconnected local conditions, it was pointed out how the locally prevalent basic farming system depends on four major components that are all essentially interrelated with one another and where each component must be viewed as an integral, indispensable part of the whole. In this multi-component farming system, environmental and social factors are closely interwoven and directly constitutive for each other's functioning. At this, the individual farming household represents a crucial point of intersection and it is its first and foremost task to effectively direct the various flows that exist between these components, thus providing optimal linkage between them. The reason behind this closely interlinked perspective on agricultural operations points to the overly powerful environmental susceptibility of the scenario in question, where also the interaction of various geocological factors accounts for high levels of unpredictability in crop productivity, thus putting at risk local food security. The agricultural produce is thus generated within a highly complex setting where farmers are permanently seeking to sustainably stabilize their overly fragile basis of livelihood through the adequate channelling and monitoring of nutrient-flows. In addition, due to land holdings being scattered and fragmented, environmental conditions vary a great deal even within individual farmer's properties, which causes increased uncertainty in terms of agricultural planning and scheduling.

It was also shown how by and large, mountain agriculturists in the region of Saur live on subsistence agriculture - which basically means that most of the local produce is in fact eaten by their families and there is only little vendible surplus. However, it is the generating of monetary income through agricultural production, which is an ever-present topic and discussed frequently and at great length. Also when being asked about agricultural production and yields of different crops, farmers would immediately calculate how much money eventually could be earned by growing them. This does not just account for agriculturists who live in the plains, near large cities and big markets, but is also true for the vast majority of the mountain farmers. Interestingly enough, even in quite remote villages where environmental conditions are even more unfavourable, market access even more restricted and, consequently, subsistence-orientation even higher, agricultural production is widely perceived as a means of earning money, of accumulating economic capital. From this perspective, the term 'subsistence agriculture' comprises a kind of 'hidden' dimension - which is the lack of alternative economic activities: In 2003, the Indian 'Ministry of Agriculture and Programme Implementation' initiated a comprehensive socio-economic survey of the nationwide situation of farmers<sup>205</sup>. The collected data shows that, on an all-India average, the income from

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205 The 'Situation Assessment Survey of Farmers' (SAS) was conducted in India in 2003 by the 'National Sample Survey Office' (NSSO) under the Ministry of Agriculture. The SAS was intended to generate the data base on the socio-economic condition of farming households, thus providing ample material for the setting up of a 'National Farmers' Policy' (NFP) in 2007.

cultivation accounts for only 46% of the total income per farming household while the remaining income is from other sources including wage income<sup>206</sup>. Therefore, in case of a basically subsistence-oriented household, even a low market wage might be sufficient to – at least initially – attract some of the households' labor into alternative work if that labor is otherwise completely idle or is engaged in domestic production of no real value even to the household. Since the situation in rural India does not at all correspond with an 'ideal economy'<sup>207</sup> but rather is characterized by serious underemployment, people are prepared to commence alternative activities as soon as the market wage exceeds the least productive of their various activities. This is especially true for regions where extra-agricultural activities are scarce<sup>208</sup>. In Saur village, apart from the few above listed activities, there exists hardly any possibility of earning additional money. Thus, another problem that arises due to their substantial environmental disadvantages is, that the people of Saur are greatly restricted from access to alternative sources of income and, as a result, almost exclusively depend on earning money from their only potential source of revenue: agriculture. Their basis of livelihood is therefore quite bounded and arable land becomes an even more important factor in that it constitutes farming households' chief resource both in terms of food supply and monetary income. It has been explained at length how, in an environment as fragile and complex as the one concerned here, human interference with nature constitutes an all the more sensitive task and how a multi-component farming system essentially relates to this fact.

However, while climatic and environmental circumstances - such as precipitation, climate and soil conditions - set the obvious limits of agricultural production, entrepreneurial success depends on a wider set of factors, stemming from both ecological fragility and spatial remoteness of the here investigated locality. It goes without saying that, in a scenario as remote as most of the mountain villages of Uttarkashi district, transportation becomes a major factor in terms of calculating both the expenditures as well as the expected revenue of agricultural production and even the farmers of Saur never tire of pointing to transportation costs as another major hindrance they are facing due to

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206 See: National Sample Survey 2005. 59<sup>th</sup> round. NSS Report No 496. *Situation Assessment Survey of Farmers: Some Aspects of Farming*. National Sample Survey Organisation, Ministry of Statistics and Programme Implementation. New Delhi: Government of India [http://planningcommission.gov.in/sectors/agri\\_html/some%20aspects%20of%20farming%2059%20round%202003.pdf](http://planningcommission.gov.in/sectors/agri_html/some%20aspects%20of%20farming%2059%20round%202003.pdf) (retrieved on 23.02.2013)

207 In theory, an 'ideal economy' is in a state of perfect competition and full employment. According to Hayes & Moore, there is 'competition between employers for labour and sufficient demand for everyone to be employed in market work for as many hours as suits them. The market wage would rise to what we call the "competitive rate", and would reflect the value that workers would place on their spare time'.

Hayes, M. & Moore, G. 2005. *The Economics of Fair Trade: a guide in plain English*. [http://www.fairtrade.at/fileadmin/user\\_upload/PDFs/Fuer\\_Studierende/FL\\_HayesMark\\_2005.pdf](http://www.fairtrade.at/fileadmin/user_upload/PDFs/Fuer_Studierende/FL_HayesMark_2005.pdf) (retrieved on 25.02.2012). Here: p.5

208 In this context, it should be noted that the situation of farming households in what at the time of the survey was then Uttaranchal is different from the all-India average, with still more weight on the generation of earnings from crop cultivation. In the mountain areas, households generated very little of their total income from sources other than cultivation – a fact which again points at the severe lack of alternatives of additional sources of income.

the remoteness of their village. However, owing to the effectively direct connection to the public transportation system, they are still doing rather well. In most other villages of the region, the crops have to actually be transferred on mule- or horseback to the next village and from there via bus or jeep down to the market towns or big cities. When one talks to farmers there, even the most modest guess would estimate transportation costs to amount to at least twenty-five percent of the selling price. Some of the men even indicate an ultimate loss of nearly fifty percent due to transportation expenditures. While thus already the performance of crops is to a large extent unpredictable and involves a good many factors well beyond farmers' control, massive transportation costs further erode farmers' incomes and thus weaken their basis of livelihood.

Finding themselves already in a relatively weak position, the seasonal fluctuations of crop prices is yet another risk factor that has direct repercussions on the situation of many farming households in Saur village: When one inquires about average market prices for certain cash crops, the farmers have severe difficulties in assessing their value. To reach an agreement on the market price of potatoes in the previous year, for example, seems to be simply impossible. The information given by different farmers vary as much as 100 percent and also a lengthy discussion between them does not even approach a concrete result. While farmers quickly and unanimously agree on transportation expenditures, they are quite unable to even make a rough guess on the money they can expect from the sale of their produce. There are two major reasons for this, both closely related to the remote location of the village: First, as was already indicated in chapter 2.3, the cash crops that are grown in the area do not come under the Indian government's APP. While the purchase prices of other crops such as wheat, rice, cotton or sugarcane are subsidized and stabilized by certain official control mechanisms<sup>209</sup>, most of the cash crops sustaining the farmers of Saur village – including Rājma, potatoes or amaranth – are subject to free market forces and hence also to frequent, substantial and continuous fluctuations. Price levels for these crops are thus generally characterized by rather quick and sudden changes in current market-rates, which results in an overall high instability. Here, especially seasonal fluctuations are of particular importance: Compared to the plains, crops in mid- and high-altitude regions come to maturity at various times and sometimes, due to reasons explained above, a single farmer reaps a harvest that has ripened within different ecological zones. Hence, his crop comes onto the market at very different points in time and rather often, due to off-peak season prices, losses are generated. For mountain agriculturists, the harvesting and selling of certain crops within a particular and advantageous period of time when they can be sold at best, therefore becomes a game of pure chance.

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<sup>209</sup> Here, I am referring to the scheme of Minimum Support Prices or 'floor prices' which, from a farmer's position, amongst all the APP instruments is the most important one and has been introduced in chapter 2.3, too.

Second, while delays in the time of maturing and harvesting of crops are of course largely due to the above described unfavourable and unpredictable environmental conditions inherent in mountain agricultural enterprises, when it comes to selling or trading their crops, mountain farmers are at a disadvantage for yet another reason owing directly to their remote location: Even if the village is equipped with direct access to transportation networks, hardly ever the farmers themselves bring their crops to the market. Usually they are left in the hands of somebody who takes care of them during transport, unloading and sale. This may be some relative in another village, some trustworthy carter or some paid middlemen. Many times also the farmers take turns in bringing their harvest to the market. From this it follows that individual farmers hardly ever sell their crops themselves but would have to trust others with this task. In addition, due to the substantial transportation costs, crops that have once reached the market can neither be held back nor brought back. If, for whatever reason the bargain price is unsatisfactory the very day the produce reaches the market, there exists no option - for whoever is in charge of the crops - but to sell them on whatsoever terms. At this, since the crops are bought by middlemen, these are of course aware of the farmers situation and often try and take advantage of the latter's position of dependence.

It becomes evident that for the farmers of Saur village, agriculture is a very risky enterprise right from the outset of their agricultural activity and they very often find themselves in a relatively weak position characterised by a high degree of dependency. From unpredictable environmental influences to exceptionally high transport expenses to strong fluctuation of price levels for the crops they produce, they are subjected to various aggravating factors putting them at a serious disadvantage. While official approaches towards identifying marginal scenarios typically merely point at the scarcity of agricultural farmland as the major key resource and principal means of livelihood and thus implicitly assume economic 'underperformance' to be the major indicator for marginality, it has however become clear that there exists a fundamentally important qualitative dimension to the issue<sup>210</sup>. Against the here investigated local setting this qualitative dimension is essentially related to two major characteristics, namely environmental susceptibility and spatial remoteness. Rather than pursuing the limited and unidimensional perspective of official approaches, it therefore seems to make much more sense to look for conceptualizations of marginality which take into account this more complex starting situation. Following Sommers, for example,

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210 However, what can be stated in general is that certain areas are more likely to be threatened by marginality than others which implies that, in all likelihood, these regions will show higher levels of poverty and the population will be more dissociated from government regulations and interventions. This is especially true for primarily rainfed regions with unfavourable conditions for agricultural production which are located far away from centers of business and employment.

See also: Gurung, G.S. & Kollmair, M. 2005.

marginality can best be described by two major conceptual frameworks, that is societal and spatial<sup>211</sup>. However, the scale and type of marginality differs depending on the various settings under which marginality occurs. In developed regions, for example, marginality is more prevalent in the context of societal than spatial issues. In less developed regions, due to poor access to infrastructure, technology or communication, both spatial and societal marginality are widespread. Seen in this light, marginality assumes a somewhat more fluid character that evolves with time in various types and scales within different environments<sup>212</sup>.

Therefore, coming from what has been explained above, clearly most households in Saur village must be labelled as marginal - not merely in terms of the size of farmland they work on, but also due to their holdings being scattered, inaccessible, spread across different ecozones and far away from market places. In this particular setting, farmers quickly encounter their limits where agricultural production itself seems to become not only unprofitable but often not even practicable. There is a marginality which is closely bound to spatial aspects and existing social marginalization must usually be considered from this perspective. Therefore, although literacy is quite high, due to the extreme scarcity of land, the low output and profitability of agricultural holdings, poor market access and very limited sources of alternative income, more than 45% of the population of Uttarkaśī district are living on subsistence agricultural activities below poverty line<sup>213</sup> – even though the hill districts are especially rich in genetic variability among plants, domestic animals and the whole spectrum of biodiversity. That most of the crops that are produced here don't come under the structural support of the government's APP appears almost ironic in light of the fact that it is this particular instrument's fundamental purpose to stabilize the income of underprivileged farmers. It is therefore hardly surprising that the chronically low and insufficient income levels have 'lead to a sizeable out-migration of male members that leaves only women headed families behind, and the role of women in the household economy becomes more important'<sup>214</sup>. Indeed, in numerous villages in the area, it is especially women and old people who are responsible for virtually all agricultural operations and also here, Saur village clearly is not an exception.

It is becoming clear that the here presented marginal rural scenario is very complex and is first and foremost characterised by high levels of interconnectedness. At this, not only are the farming

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211 See: Sommers, L. M.; Mehretu, A. & Pigozzi, B. 1999.

212 See: Gurung, G.S. & Kollmair, M. 2005.

213 Here, 'poverty line' refers to the long held World Bank standard which indicates poverty by reference to the amount of money available per person per day, i.e. 1.25 US-\$ and is used here for the purpose of giving the reader a very approximate and elementary picture. Naturally, the causes and effects of poverty are far more complex and there exist further, more profound concepts for the purpose of in-depth examination – for example the MPI – which was already discussed.

214 Watershed Management Directorate. 2009. Uttarakhand State Perspective and Strategic Plan, 2009-2027. Dehradun: WMD.

[http://dolr.nic.in/dolr/downloads/spsp/SPSP\\_Uttarakhand.pdf](http://dolr.nic.in/dolr/downloads/spsp/SPSP_Uttarakhand.pdf) (retrieved on 08.03.2013). Here: p. IV

households of Saur village tightly interwoven with their immediate physical environment, but also is the latter a decisive factor for the farmers' agricultural and economic success. Thus, marginality must above all be associated with spatial factors that, in the form of particular local conditions, impose a multitude of restraints, uncertainties and risks on the farmers of Saur village and that also entail features of social marginalization such as poverty, high emigration levels and the long-term problems this development involves.

## 4. Access to the Field I

### 4.1 Navdanya

‘Problems with soil erosion, loss of soil productivity, chemical contamination of wells and waterways, overproduction, depletion of genetic stock, and a variety of others suggest that the modern system has run its course and is due for an overhaul. In response to this general feeling, a movement for an alternative agriculture has emerged. It is small and politically weak, but it is worldwide and growing.’

(Vandermeer, J. 1996: 343)

It now also becomes apparent why, in the present scenario, to consider the success of agricultural activities from an exclusively economic viewpoint - which associates agricultural success with productivity and competitiveness and an increase in overall crop output with efficiency, progress and modernity - must certainly be considered reductionist, perhaps naive. While official development rhetorics boast with so-called ‘farmer first’ approaches, ‘empowerment’, the strong inclusion of ‘culture’ and declare organic to be the long awaited turning point in order to reinvent bottom-up development, at the same time the promotion of organic farming is almost exclusively aimed at supplying international target markets. From this perspective, it is evident that marginal rural scenarios, in terms of their potential contribution to the overall orientation on global export markets, can function merely as suppliers of organic niche products - for example particular herbs, fruits or cereals. Therefore, while on the one hand considerable attention on part of official development bodies is still paid on the promotion of organic farming, on the other hand it seems to be almost the norm that Indian organic farmers and organic communities are at best treated as mute variable, as a prerequisite necessary for lubricating the wheels of export production.

However, the here investigated context points at the fact that agricultural productivity, economic competitiveness, local food security and the satisfaction of individual and social needs are closely interwoven with various highly localized factors that cannot be explained in terms of purely quantitative measures. It follows from this that, in order to successfully generate a local field of practice which allows if not for the breaking open of local farmers’ current state of multiple dependencies then at least for the latter’s substantial softening, what is needed is an approach that takes into account specific local conditions, thus putting emphasis on more particular, more localized, more individualized considerations.

Against the backdrop of these considerations and in light of the description of the specific socio-ecological scenario given above, it becomes rather apparent that the conceptual essence of organic agriculture might actually be really able to make an important contribution to the marginal situation



of the farming households of Saur village. Through its fundamental orientation towards the inclusion of locality, organic farming might indeed provide a more context-sensitive and therefore more sustainable basis of rural livelihood where both local resources and local knowledge act as the major means of culturally sensitive empowerment from below. Thus it also comes as no great surprise that in Saur, over the last decade, there has developed a lively community of organic farming families. In fact, organic agriculture has come to play an increasingly important role in the life of many local households where most of them are cooperating closely with the aforementioned non-governmental organization Navdanya. Not least through the organization's previously explained early appearance on the Indian organic scene - accompanied by its almost trend-setting incorporation of both local and global forms of collective action through the establishment of new linkages transcending local and even national boundaries at the time - has Navdanya significantly shaped an especially influential configuration of 'organic' which has had even global impacts, but also does the organization claim to pursue an especially context-sensitive approach of organic agriculture. That is why it attaches great importance to its particular relationship with its producers. It is repeatedly emphasized that the organization doesn't operate on a classic contract-farming base but rather is constantly working on bringing a special agenda to fruition which aims at maintaining ecological stability and local food security through the promotion of sustainable agricultural practices that are fundamentally based on local resources and the application of context-sensitive knowledge.

To investigate the historical development and implementation of Navdanya's conceptual basis is therefore highly interesting for two principle reasons: First, a closer examination of the organization's operating principles will enable the researcher to understand to what extent it might actually contribute to the concrete and effective realization of an environmentally and socially accountable and sustainable approach of organic agriculture in the area being investigated. At this, through understanding both the basic conceptual ideas and practical implementation of Navdanya's approach to organic agriculture and effective rural development, the researcher hopes to be able to identify some key aspects which may turn out to be of particular importance to the issue. Moreover, this investigation could substantially contribute to the question how Navdanya seeks to realize its much acclaimed, highly actor-oriented strategy of providing local farmers with substantial practical assistance tools that draw on the latter's own cultural repertoire of agricultural knowledge and practice. Since Navdanya has been a pioneer on the route of introducing, promoting and further developing organic agriculture not only in a pan-Indian context, but especially in the hill areas of Uttarākhand state, it was above all the influence of this particular organization's activities that have shaped the generation, dissemination and actual configurations of organic agricultural practice in

the area in question. At this, tracing the historical developments and processes from which the organization has emerged and on whose basis it operates, surely will contribute to a more thorough understanding of how agriculturists in Saur village have come to speak of themselves as being organic and how Navdanya's approach has shaped and influenced this view.

Second, as was explained in detail in the introductory chapter of this study, the concept of organic agriculture must be understood as consisting of multiple discursive fields and translocal conceptual flows that frequently show an amazing elasticity and mutability. It is entangled within different fields of political significance and is often instrumentalized, thus pointing at various underlying agendas and objectives. In the present case, it was Navdanya who has come to play a key role in interlinking discourses and actions on multiple levels, basing its particular schemes and agendas of investigating, inventing, reinventing and promoting organic knowledge on its own particular ideological background. The organization plays a key role in that it interrelates both local and translocal contexts, thus creating a particular and distinct image of and practical approach towards organic agriculture. Therefore, through conceiving Navdanya as 'an arena within which battles from society at large are internalized'<sup>215</sup>, through its closer examination, there might emerge certain overlaps where particular local configurations of organic farming acquire broader meaning that can be related to wider discourses of human development. Looking into the sociopolitical and economical context of such 'internalizations' will also point at the emergence and evolution of local and translocal interrelations that enable or constrain flows of concepts, ideas, knowledge and people that move through these different sites and spheres<sup>216</sup> and which are thus also contributing to the particular shape of organic agriculture within the present scenario. Therefore, associating Navdanya's ideologies, activities and practices with translocal discourses is in line with Fisher's remark that 'unpacking the micropolitics of NGOs is dependent upon placing these associations within larger contexts, understanding them not as local wholes subsumed within larger national and global political contexts but as fragmented sites that have multiple connections nationally and transnationally'<sup>217</sup>.

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215 Clarke, G. 1998: 5

216 See also: Appadurai, A. 1991.

217 Fisher, W. 1997: 450

## 4.2 Unpacking Navdanya: History & Ideology

With that said, in what is to follow I will 'unpack' the most essential elements of Navdanya's history, ideological background, sociopolitical agendas and present-day micropolitics: When in 1984, Dr. Vandana Shiva founded the non-governmental forerunner organization 'Research Foundation for Science Technology and Ecology' (RFSTE), her stated goal was to bring off a change of paradigm both in agricultural practice and public awareness. Originally intended to be a 'participatory research initiative, established to provide direction and support to Seed, Food and Water Rights'<sup>218</sup>, the organization soon expanded their scope through launching a comprehensive and ambitious program which, under the name of Navdanya, achieved worldwide recognition and included biodiversity and seed conservation as well as the development and promotion of organic farming concepts. In 1991, however, following the previously explained implementation of extensive measures concerning the liberalization of trade and capital flows, during a subsequent second phase of reforms, the focus of economic liberalization was shifted from the central government to the states with an emphasis on encouraging the latter's governments to compete for investments by multinationals and large industrial groups. This overall development also made a huge impact on the Indian Seed Industry which, like many other industries, also witnessed a paradigm shift with the newly liberalized seed policy<sup>219</sup>. Thus, while until the mid 1980s India's seed supply had been restricted to either traditionally produced seeds from farmers or seeds from research and breeding facilities in the public sector, towards the end of the decade the private sector was added as a new source. Neither did the new policy withdraw all restrictions on the import regulations on seeds nor did it away with the two established sources. Nonetheless, it substantially contributed to the accommodation of great private participation, widely opening up the sector<sup>220</sup>. As a consequence, the world's largest private seed producers entered the Indian market and very quickly established a powerful seed lobby. In view of these developments, Dr. Shiva declared - and until today declares - the 'colonization' and commodification of natural resources through the global and totalitarian reach of giant corporations to be the most serious threat to India's rural population and their agricultural basis of livelihood<sup>221</sup>. Against this background, the organization claims to focus strongly on the preservation of local resources while at the same time working towards the political and economical reinforcement of rural communities. It aspires to do so by

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218 Navdanya. Website: <http://www.navdanya.org/> (retrieved on 24.11.2012)

219 Revathi, E. & Ramana Murthy, R.V. 2005.

220 In fact, this liberalizing reform was so comprehensive in scope that only in order to foster the privatization of the national Seed Industry, the Indian government took out a loan of 150 million dollars from the World Bank for the purpose of making the sector more market responsive.

See: Saggi, N. 2006: 3

221 Navdanya Team. 2007.

means of creating public awareness and promoting organic agricultural practices, based on the free production and distribution of regional organic seeds and knowledge as well as the in situ<sup>222</sup> conservation of genetic plant material<sup>223</sup>. At this, Navdanya draws on M.K. Gandhi's ideas on the creation of small and largely autonomous local village communities<sup>224</sup>. In this light, not only is the 'revitalization' of local indigenous knowledge and traditional agricultural methods and practices of central importance, but also is a particular focus being put on the creation of a worldwide network of sympathizers, activists, researchers and farmers and the increase of international awareness concerning the potential threat emanating from global agribusiness within an economically liberal general framework<sup>225</sup>. In this context of permanent struggle against the 'totalitarian structures of international agribusiness', Navdanys approach of promoting organic agriculture takes on a highly politically activist and alternative character with a particular emphasis on the issues of food sovereignty and biopiracy<sup>226</sup>.

However, the work of the organization is not confined to ideological shouting or political networking but also comprises numerous practical approaches that quite substantially have contributed to the formation, development and dissemination of organic agriculture not only in the state of Uttarākhāṇḍ but throughout the whole of India. Thus, as early as 1996, a fairly large organic model and experimental farm was set up at Ramgaṛha, a small village near the state capital of Dehrādūn. The farm's name 'Bījā Vidyapīth' - Seed University - is already pointing at its main purpose of making possible a more comprehensive in situ conservation of all kinds of plant species than had hitherto been possible. There, the organization has collected, cultivated and preserved and hundreds of indigenous varieties of crops such as rice, wheat, millets, and corns as well as a large number of vegetables<sup>227</sup>. In addition, the farm has come to serve as an important 'open air laboratory' where, over the years, researchers, volunteers and local farmers have conducted and evaluated numerous experiments on organic techniques of composting, seed breeding, melioration, soil enrichment and crop rotation and sequencing. Moreover, in special workshops and training units which usually last several days, the results and insights of these experiments are then passed

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222 The term 'in situ' literally translates to 'in position' and here indicates the preservation of plant genetic material in natural surroundings, preferably as close as possible to the former's place of evolutionary origins. In contrast to 'ex situ' or 'off-site' conservation techniques where genetic material is usually 'stored' in a quick-frozen condition, the strategy here referred to aims at allowing the genetic material to remain under conditions of natural outside influences and evolutionary pressure. The plant is thus given the chance to also in the future react and adapt to steadily changing environmental factors, thereby achieving 'progressive conservation'.

223 Miller, M. 2010: 39

224 Navdanya Team. 2007.

225 Shiva, V. 2000: 7

226 It is for this reason that in 1993, Dr. Shiva has been awarded the 'Right Livelihood Award' which is also referred to as 'Alternative Nobel Prize'.

227 See: Methodological Appendix II/ Picture 4

on to groups of interested farmers<sup>228</sup>. In analogy to the much-feared 'global reach' of multinational corporations, Navdanya to date has built a pan-Indian alternative network of 65 regional community seedbanks or, to be precise, in joint initiatives has supported their setup and maintenance. Through this network-building, apart from lively exchanges of information and plant genetic material, the organisation hopes to create broad alliances that are able to effectively organize political resistance as well as firmly pushing ahead public education and awareness, in short: conscientization. This network has already proved most effective during the 'Neem Case'<sup>229</sup> which, in the mid 1990s, has made a crucial contribution to boosting Navdanya's international reputation or during the only recently started nationwide campaign opposing the official approval of the 'Bt Brinjal'<sup>230</sup>.

Initially, Navdanya's base was set up in Delhi where Dr. Shiva's father owned a building which then was used as a base and accommodated the organization's office. Telling me about his first encounter with Dr. Shiva in this very building, a senior employee recalls 'a big room with a rather big table on which there was a large display of books and seeds'. Some of the latter reminded him of his childhood days in a small mountain village in Kotdwara district, Uttarākhnd, which at that time was pretty much all that came to his mind since previously, he 'had not heard anything about seeds'. He was used to farmers storing their own seeds from his childhood days and so his view on the recent developments on seeds and the global agribusiness was fairly limited. In the course of their conversation he learned that Dr. Shiva also had a strong connection with the mountain areas of Uttarākhnd since she herself had been born and brought up in the area. She also had experiences in organizing activist work in the area and held close ties to important figures of the famous 'Chipko-movement'<sup>231</sup>. He recalls being impressed by her outstanding personality, especially when she explained to him thoroughly why it was necessary to 'save' seeds and the local biodiversity and to campaign against multinational corporations. 'I wondered' he says 'why Vandana Shiva – as a non-

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228 See: Methodological Appendix II/ Picture 5

229 Together with IFOAM and the then Belgian Minister of Environment, Navdanya at that time spearheaded an 'international coalition' of NGOs from India, Europe and North America who had filed a lawsuit against representatives of the US-based chemical company WR Grace and the US Ministry of Agriculture who held six patents on various products of the neem tree. The lawsuit was directed against the patenting and restricted licensing of genetic resources and moreover included accusations of so-called 'biopiracy' and 'intellectual colonialism' - particularly on the part of the Indian activists and Navdanya.

Third World Network: Website: <http://www.twinside.org.sg/title/pir-ch.htm> (retrieved on 27.11.2012)

See also: Shiva, V.; Bhar, R.H.; Vijayalakshmi, K. & Radha, K.S. 1995.

230 See for example:

The Times of India. Website: [http://articles.timesofindia.indiatimes.com/2011-08-12/india/29879909\\_1\\_bt-brinjal-legal-action-mayhco](http://articles.timesofindia.indiatimes.com/2011-08-12/india/29879909_1_bt-brinjal-legal-action-mayhco) (retrieved on 08.02.2012)

Navdanya. Website: <http://www.navdanya.org/news/82-press-release-moratorium-on-bt-brinjal-a-victory-for-gmo-free-movement> (retrieved on 29.11.2011)

231 The Chipko-movement is a socioecological movement that draws strongly on the Gandhian principle of non-violent resistance (satyāgraha) through the act of 'hugging' trees to save them from being felled. While the roots of this particular kind of resistance to deforestation lie in the early 18<sup>th</sup> century Rajasthan, the modern Chipko-movement as an organized resistance to the destruction of native forests started in the early 1970s in the eastern parts of Uttarākhnd.

farmer – would worry about seeds and farmers and it occurred to him that she might be right. He remembered the big variety of seeds which could be found in the villages in his youth and it seemed to me as if this was the kind of good work that he had been looking for. So he joined Dr. Shiva's organization. Over the next few years, he says, he gained lots of experience, knowledge and also interest in his new work and so, in 1995, he asked Dr. Shiva for permission to leave their 'Delhi office' since this kind of work wasn't really his cup of tea. Instead, he wanted to work directly on the ground, directly learning from and working with farmers since he felt this to be the most essential – but hitherto also unpardonably neglected – part of their work. Thus, when Dr. Shiva had agreed on his plans, he established a base at Kotdwara which he felt was a very central spot in terms of travelling both to Delhi and Dehrādūn as well as to the various mountain areas and villages he intended to visit. He had grown up in the area and therefore considered his chances promising to convince farmers to switch to organic farming in this particular region. Thus, within a three-year period, he systematically converted some 20 villages to organic agriculture and the area became the first core region of Navdanya's activities. He emphasizes again and again that, apart from teaching local farmers, his second most important reason for travelling the mountain villages of his homeland was learning from them. In the beginning of his work in the field, he says, even though he was a farmer's child he himself did not know have much 'practical knowledge' about agricultural methods and therefore many times felt somewhat uncomfortable when talking to village farmers. He thus felt the need to become thoroughly acquainted with the requirements of his task which meant that he had to learn more about local agriculture. This was also fundamentally in line with Dr. Shiva's view of grounding organic agriculture on the various local methods that already existed in their respective particular contexts: While she felt that the urgent need for action had been provoked by the unleashing of neoliberal, deregulated market forces on a global scale and thus had generated a worldwide maldevelopment, at the same time she was convinced that the implementation of alternative measures had to take place in particular contexts, based on specific local cultural features. For her, the underlying causes of India's agricultural crisis were basically of global origin and dimensions whereas solutions had to be sought in local traditions. Out of this emerged the organization's strong focus on local knowledge which, as the senior employee perpetually affirms, constitutes the very basis of their perspective on organic agriculture. Gathering knowledge from village farmers and redistributing it, he says, has become the very foundation of what his organization today understands by 'organic agriculture'. He recalls that in the early stages of his work on the ground, he quickly realized that especially older people still had extensive knowledge of particular local cultivation methods while there already existed a huge gap between them and the following generations who had long been exposed to the rather homogenizing

influences of commercial agricultural practices. Therefore he specifically picked out older people to learn from and even started smoking in order to better integrate into the old mens' gatherings where it was somewhat mandatory to smoke beedee cigarettes during conversations. In addition, as it happened, his pursuit of local and sustainable agricultural knowledge came in handy at the right time when, in 1996, Dr. Shiva acquired the first twenty acres<sup>232</sup> of Navdanya's model and experimental farm. However, before starting organic cultivation, the newly bought land had to be refertilized and the structure of the terrain adapted to slow down and spread the flow of water during monsoon season so as to minimize soil erosion since previous mismanagement had left it almost barren<sup>233</sup>. Based on the knowledge he had previously gathered from farmers in the villages around Kotdwara, he and his team set out to work on improving the heavily damaged soil. He recalls that, considering the poor quality of the soil where even weeds did not grow, even the farmers from the neighbouring villages told them that their efforts were futile and that there was no hope for refertilization. So he thought it best to resell the land again and instead buy a smaller piece of more fertile acreage somewhere else. However, Dr. Shiva would hear nothing of such measures but insisted on increasing their efforts to make the wasted soil fertile again since she was determined to 'practically' demonstrate that it was in fact quite possible to achieve substantial improvements in both soil and crop quality through organic methods. He then also started to carry out observations and experiments himself, amalgamating and putting his newly acquired knowledge to the test. At this, again, he emphasizes that the whole team did not have much practical experience with agriculture. 'Only a little knowledge was there' he says and remembers his mother taking him with her to the family's fields where he learned basic techniques. He for example knew that planting lentils was beneficial for the soil. But it wasn't until much later, when he had started to systematically collect farmers' knowledge and become really interested in the subject, that he learned that lentils actually fixed nitrogen in the soil and thereby contributed to future plant growth. It is thus that his knowledge originated from local sources – which he tapped through sitting, watching, listening and talking – but that it was not quite complete until he himself had practically worked and experimented with it and put it into a different, more scientific perspective which served to supplement his knowledge. Only then, he remarks, would he come to fully understand the

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232 At present, the domain's size has grown to more than double that figure and consists of some 25 acres of arable fields as well as another 20 acres of mango and lemon orchards.

233 According to various internal sources, infertility and heavily eroded topsoil were the main problems that had to be dealt with before organic cultivation could be initiated. Apparently, infertility had resulted from previous overexploitation through sugarcane and eucalyptus monoculture while the overall structure of the terrain was conducive to an increased water run-off and soil erosion during monsoon seasons. Moreover, the area's close spatial proximity to the nearby Shivalik mountains – a geological formation characterised by increased velocity water flow during the rainy season – had added further to the latter. According to some of the workers at the farm, the overall condition of the soil was poor to such an extent, that despite great efforts, the first few harvests proved to be altogether unsatisfactory and it seemed that the land had been irreparably damaged.

meaning of what people had previously told him. Through his own findings and insights, he became increasingly aware of the crucial importance of the organization's model and experimental farm where – just like himself – agriculturists could see for themselves what Navdanya meant by organic agriculture and the various ways it could work successfully.

Finally, in the third year, the team's efforts were rewarded with visibly improved soil quality and acceptable crop yields and from 1999 onwards, the farm became a big success in terms of attracting neighbouring farmers who came to see with their own eyes the results of organic cultivation. Also, Navdanya increased its efforts in terms of on-site trainings in local villages, thus making its practical approach popular with a wide circle of farmers at a supraregional level. Fuelled by these results and Navdanya's fast-growing renownedness in the wake of the 'Neem Case', the organization took up work in other national states while more and more farmers and interested visitors from all over the country came to see the farm. Some sought inspiration, others received training in the application of organic methods of crop cultivation, fertilizing, intercropping, pest control and adequate storage as well as other relevant up to date information on organic agriculture. From this growing success emerged the need for a 'Seed University' which provided the facilities to attract a wider – possibly international - audience from all different kinds of backgrounds. While the organic model farm and the 'Biodiversity Conservation Center' – the organization's seedbank had been the very first infrastructural construction on the newly bought ground – above all provided the learning and educational terrain for practical biodiversity conservation work, the establishment of the 'Seed University'<sup>234</sup> aimed at contributing to greater public awareness and the strengthening and extension of Navdanya's network. Thus, both the practical dissemination of knowledge about organic farming methods to interested and associate farmers from the area and the bringing together of many different sympathizers, scientists, activists and students from all over the world are aimed at ultimately contributing to the organization's self-appointed mission of conserving biodiversity through the promotion of bio-diverse organic agriculture.

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234 For this purpose, starting from 2001, a 'campus' was set up. It today includes various smaller complexes such as the dining hall-kitchen complex, the storehouse-registration-office complex, dormitories, a lecture hall and small library as well as a laboratory and a rain-water well.



#### 4.2.1 Unpacking Navdanya: Distributing Knowledge & Seed Material

The organization attaches great importance to measures of practical assistance to local farmers. Its goal is to support and contribute to the broad dissemination of organic farming through a number of essential capacity-building activities that are supposed to provide farmers with practical help during various stages of agricultural production – from specific conversion strategies to the acquisition of organic seeds to eventually processing and selling their produce: The organization's biodiversity conservation farm being the nodal point of practical activity, it is here that most of the teaching and learning takes place. At a later point in time, it will be explained at length in what ways adequate knowledge and information are vital factors for local farmers' conversion to and success with organic agriculture. For now, it shall suffice to make clear that Navdanya provides rather comprehensive information on crucial aspects of organic farming, both in theoretical as well as in practical terms. It offers a wide range of classes, projects and activities – from extensive lessons on specific issues to broad introductory courses. As has already been mentioned above, the farm provides both the teaching staff as well as the participating farmers with the facilities for practical lessons and demonstrations. Here, the latter are taught the preparation of organic fertilizers and tonics, the manufacturing of effective and environmentally safe plant protection products or how to increase crop yields through using synergistic effects resulting from the combination of particular crops. In addition, farmers are provided with deepening information on the presented techniques such as ecological correlations or potentially beneficial interactions with other methods. However, not all training units are conducted on the organization's farm. Rather, depending on the availability of staff and external financing, field workers are regularly being send out to villages and requesting organizations and agencies in order to provide on-site training courses as well as talks and presentations on various subjects<sup>235</sup>. Had Navdanya, following the impacts of the financial crisis in 2008, in the following years concentrated on providing trainings and courses chiefly in the vicinity of its biodiversity conservation farm, at the time of the research for this study, on account of an overall improved financial situation in combination with strategic realignments, the organization was in the process of redirecting the bulk of its activities towards strengthening its on-site support in order to make the attempt of establishing organic 'model villages'. Internal estimates suggest that over the last two decades, as many as 500,000 farmers – mostly from marginal and climatically disadvantaged regions – have been given lessons in efficient organic cultivation<sup>236</sup>.

Another vital and very immediate support activity on the part of Navdanya is not only the collection and in situ conservation of genetic seed material, but also its distribution to and circulation amongst

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235 See: Methodological Appendix II: Picture 6

236 Navdanya. Website: <http://www.navdanya.org/> (retrieved on 24.11.2012)

farmers. As has been made explicit above, fighting international corporations' policies of commercializing and thus controlling natural resources which are understood to be common property – for example plant genetic and seed material – is Navdanya's major self-imposed missions - as is frequently emphasized by its charismatic founder Dr. Shiva. In this connection, reference is usually made to the fact that in large parts of the country, biodiversity in local crops and vegetables has already been seriously eroded by green revolution measures, which means that today, a large part of India's small and marginal farmers have turned to purchasing seedmaterial rather than producing it themselves<sup>237</sup>. Therefore, in order to fight this development, over the last decade the organization has provided local communities all over the country with assistance in the build-up, development and maintenance of more than fifty seed banks where primarily local seeds are kept and preserved<sup>238</sup>. However, Navdanya has made it a rule for the respective 'seed-keepers' to not merely store the material under their responsibility, but to first of all circulate it within regional farming communities. Through this, the organization aims at achieving to main goals: First, spreading the respective seed genetic material amongst as many local farmers as possible ensures in situ conservation in the proper sense, which means that genetic crop material is not only preserved under natural conditions, but, also being exposed to the latter, is also given the chance of developing according to present-day environmental influences. Through this approach, seeds of local crops and vegetables are given the chance to actively adapt to ever-changing climatic and environmental factors and to develop robustness and specific local traits. Second, local farmers are provided with the opportunity of actively participating in breeding and producing their own genetic seed material. This, as Navdanya affirms, would not only give them back a very fundamental part of their agency as farmers, but would also contribute to the overall creation of a strengthened sense of community and cooperation amongst each other, the latter having been substantially eroded simultaneously with the disappearance of the need to generate, breed and exchange adequate seed material. Of course the seeds which are distributed to the farmers from the respective local seedbanks are intended to function as an initial start-up and are generally handed out for free. The only condition is to restore a certain amount of the same material in the succeeding year so that facility cannot run out of the respective seeds. There is no need so say that, moreover, in all subsequent years, the thus generated seed material comes to the farmer absolutely free of costs.

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237 There hardly can be found reliable data on the use of 'improved seeds' on behalf of Indian farmers. Also, naturally, it would fluctuate significantly between different regions. Nevertheless, indications for the increasing use of externally purchased seed material is given here:

National Sample Survey 2005. 59<sup>th</sup> round. *NSS Report No 496: 19/20*

Moreover, the permanent upsurge of India's seed producing industry might also be indicative for this development.

238 See: Methodological Appendix II/ Picture 7

#### 4.2.2 Unpacking Navdanya: Direct Marketing & Certification

While it becomes clear that Navdanya's objectives concerning the promotion of organic agriculture are quite encompassing in nature and aim at much more than mere economic profit, the latter clearly is an important aspect – for both farmers as well as the organization itself. The organization's motivation draws in large part on certain political convictions and ideological backgrounds which gives its work an all the more alternative character. This is quite intentional since Navdanya generates a major share of its now global support through its particular agendas. However, the generation of income is of course essential to local farmers, and therefore also has a central place in the practical implementation of the organization's approach. First of all, it is thus the constant development of direct sales channels for organic products, which is constantly pressed ahead with. It is made explicit, that this approach of marketing was launched under advice from local farmers who were searching for possibilities of generating premium prices for their produce. Meanwhile, the sale of organic crops, vegetables and processed products has been firmly anchored within Navdanya's ideological fundament. In this way, the organization does not just exclusively focus on the improvement of small and marginal farmers' situation, but also includes customers' 'right to healthy food' into their overall agenda. However, being legally registered as a trust, Navdanya is not entitled to carry out operations on the basis of generating profits. Therefore, in 2001, the organization's decision-makers opted for the establishment of 'Agrotec' – a business-oriented enterprise with the main field of activity consisting of the marketing of organic products<sup>239</sup>. At this, while international sales definitely play a role concerning the organization's financial fundament, there also exists a growing domestic sales-structure whose further development is considered to be of particular importance. At present, Navdanya operates a small number of organic shops and restaurants in New Delhi, Bombay and Dehrādūn which cater particularly to the growing demands of urban upper class customers. In accordance with internal sources, in 2010, the organization's domestic sales for the first time had reached the volume of one crore Indian rupees, showing an increase of almost 65% against the previous year's amount<sup>240</sup>. Also, at the time of this research, the organization was in the thick of the planning process of a rather extensive processing, packing and logistic centre in Gurgaon, one of New Delhi's major suburban satellite cities. In addition, there were made first practical attempts to develop a scheme of opening up a limited number of franchised stores in major towns of Uttarākhand state, namely Purola, Uttarkāśī, New

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239 Not only was this step taken to enable the organization to actively engage in the marketing and selling of agricultural products, but also is this measure intended to guarantee financial long-term support to Navdanya's main political objectives. The idea here was, that after the initial phase of the development and consolidation of distribution channels, sales facilities and consumer potential, Agrotec's profits should be used for the sustenance of its 'parent organization'. Eventually, both bodies would thus be able to mutually support and reinforce each other.

240 See: Methodological Appendix I/ 4: Excerpt from interview with A. Jani on April 28<sup>th</sup> 2011

Tehrī and Rudraprayag. However, while the selling and marketing of local organic produce is indisputably a major factor, Navdanya frequently assures that as a rule, the allocation of food and nutrients follows an 'ideal hierarchy', which is to ensure that food will only reach international markets once the producing households and the local demand – and eventually also the domestic markets – have been saturated<sup>241</sup>. The primary objective of this agenda is thus the enabling of farmers for the successful organic cultivation of various local foodstuff for household consumption while merely harvest surpluses are supposed to be released to the markets. The fact that the organization claims to not maintain typical contract farming relationships with its producing members must also be seen from this perspective. Rather, it is alleged that efforts are made to procure smaller quantities of organic produce from the maximum number of farming households – even though this might ultimately turn out to be more costly and time-consuming. This strategy is seen as the most direct way of reducing some of the earlier discussed, most prominent risks threatening farmers households in rural India: food insecurity, malnutrition, rapid degradation of livelihood resources and high levels of indebtedness<sup>242</sup>.

In order to be allowed to sell organic products in the first place, Navdanya also supports farmers during the process of legal certification. The organization provides combined- or group certifications where its employees arrange for the obtainment of most of the information and documents required<sup>243</sup>. This includes detailed protocols or 'field histories' concerning the past and present cultivation of organic fields as well as schemes regarding the intended future cultivation including specific indications such as the intended time of sowing, plowing, mulching or harvesting<sup>244</sup>. Today, an increasing number of certification agencies also demand detailed GPS data on particular stretches of fields where organic crops are being cultivated. Thus, on a regular basis, selected staff members are dispatched in all directions in order to raise, collect and update related data, which is true for even very remote villages. Especially small and marginal farmers benefit greatly from this intermediating assistance since it is virtually impossible for individual farming households to raise the often exorbitantly high sums which are necessary for this purpose.

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241 Shiva, V. & Pandey, P. 2006: 103

242 See for example: Sustainet. 2006. *Sustainable Agriculture. A Pathway out of Poverty for India's Rural Poor*. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit  
[http://www.sustainet.org/download/sustainet\\_publication\\_india\\_part1.pdf](http://www.sustainet.org/download/sustainet_publication_india_part1.pdf) (retrieved on 24.02.2013)

243 For some time now, Navdanya has been co-operating with the Société Générale de Surveillance (SGS). The SGS India Private Limited is one of the affiliated companies of the SGS group worldwide and started its own organic program in India in 2001. It is engaged in inspection, testing and certification services. Its 'Organic Production Standard' complies with a number of national and international requirements and has been developed with reference to standards of the NSOP, IFOAM and the Codex Alimentarius Guidelines. Moreover, it is in line with the European Community Regulation (EEC) No 2092/91 and USDA rulings on the issue.

SGS Group. Website: <http://www.sgsgroup.in/> (retrieved on 27.02.2013)

Agriculture & Industry Service. Website:

<http://www.agricultureinformation.com/mag/2008/03/s-g-s/> (retrieved on 27.02.2013)

244 See: Methodological Appendix I/ 5: Excerpt from interview with Dr. V. Bhatt on January 11<sup>th</sup> 2011

### 4.2.3 Unpacking Navdanya: Transport & Womens` Groups

Apart from providing small and marginal farming households with substantial assistance concerning the financing and administration of organic certification as well as offering them direct access to the market by means of developing a small but growing network of chiefly domestic sales points, Navdanya gives valuable support through yet another measure: The organization is also directly involved in facilitating or even taking over completely the procurement and transport of organic produce. Being equipped with a small number of off-road vehicles as well as storing facilities at its biodiversity conservation farm, Navdanya on a regular base collects the currently needed or harvested organic produce from the selected farmers. Through connecting individual farmers, households and whole farming communities to Navdanya`s wider network, it often becomes possible to more effectively link and combine these individual elements, thus fostering and making use of symbiotic relationships and effects. Just as organic certification is becoming affordable for all participants through focussing on groups of farmers rather than individual households, so does - through efficiently pooling together different farmers` produce - transport become more economical for everyone involved. At the time of the research for this study, the organization had only recently started to sell fresh organic vegetables in one of their shops in New Delhi – an advance which had sparked off an internal debate on the future management and streamlining of direct procurement and transportation of quickly perishable goods.

Already at a relatively early stage in Navdanya`s history, women had come to play a crucial role in the organization`s way of approaching the realization of sustainable and effective agricultural alternatives. As was already briefly discussed in chapter 3.1.4 with regard to the particular sociocultural background of farming communities in Uttarākhand state, women play a fundamentally important role when it comes to agriculture and related activities. Once a couple of days have been spent in a mountain village of the area in question, this realization becomes obvious very quickly and it thus comes as no surprise that also Dr. Shiva quite rightly considers women to be the primary know-how carriers of both agricultural knowledge and practical expertise and, following this, to play a vital role in terms of local household food security and malnutrition issues<sup>245</sup>. On these grounds Navdanya is constantly working towards the strengthening of womens` position and has, since a few years, taken up working on establishing self-governed, local womens` groups in marginal and peripheral areas – above all, of course, in the organization`s core region Uttarākhand. Revealingly, this scheme is called `Mahīlāe Anna Swarāj Samūh` - `Women Food Sovereignty Group`<sup>246</sup>. It focuses on a number of objectives and is based on the idea of creating a

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245 See: RFSTE. 2009.

See also: Shiva, V.; Singh, V.; Dankelman, I.; Negi, B. & Singh, S. 2005: 12

246 See Methodological Appendix II/ Picture 8

sphere of local solidarity and self-organization amongst group members. In this regard, 'empowerment', 'liberalization' and 'self-determination' are catchwords that are frequently used when the organization's employees refer to this scheme. In addition, the groups are explicitly entrusted with the task of actively collecting, implementing and passing on local knowledge and techniques concerning the traditional management of seeds and crops, thus contributing to the keeping alive of cultural heritage, authentic knowledge and local traditional practices – concerning both materialistic as well as idealistic aspects. While these assertions and expectations are quite grand-sounding and ambitious, once again they are not merely empty phrasemongering – although, of course, in reality the respective groups' performances and internal cooperation are not going all that smoothly<sup>247</sup>. Rather, Navdanya's efforts of substantiating the aforementioned purposes of its agenda of Mahīlāe Anna Swarāj Samūh are based on certain concrete measures of capacity-building. The setting up of microcredit networks, for instance, is aimed at encouraging the participants' self-responsibility and initiative. Here, the joint management of common financial resources – whose initial capitalisation and organisation is initiated by Navdanya's regional field coordinators – should enable the future realization of potentially important acquiresments too large for single community members, while at the same time imparting to them money management skills. The setup and maintenance of local seed banks – another vital function of Navdanya's womens groups – is also meant to familiarize selected members with the independent execution of particular responsibilities concerning the interests of the whole organic village community. After all, local organic farming households are thus given the opportunity of benefiting greatly from an extensive supply of free seed material which, if the seedbank is managed responsibly and constructively, might moreover contribute to encourage local farmers' creativity in breeding and the cultivation of a broader range of crops and vegetables. Another practical measure of capacity-building is the gradual transfer of the planning, managing, procuring and processing of the respective community's seasonal organic produce to the relevant womens' group. In doing so, Navdanya intends to substantially facilitate and straighten their basis of procurement so that the respective organic communities are also directly in charge of their produce. It is a declared objective to eventually place in the hands of local womens' groups virtually all aspects related to crop production, processing and handling – from the gathering of information on expected demands of particular crops to the internal allocation of quantities cultivated to the scheduling and management of the crops harvesting, grading, cleaning and processing. In addition, Navdanya plans to remunerate the respective groups for this extra work by paying an extra premium, thus killing

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247 As is frequently portrayed in the organization's reports.  
See for example: RFSTE. 2011: 4-11

two birds with one stone. While the realization of most of this currently is still lying in the future, there can however be no doubt that the successful implementation of these plans has indeed the potential to greatly contribute to local farmers' context-sensitive empowerment and self-determination. Yet another practical aspect of steadily working towards the latter consists in the transfer of practical knowledge and methods concerning certain techniques of value-adding and the adequate, value-improving processing of locally produced organic grains, fruits and vegetables. At this, especially product processing and refinement at the very site of production play a major role, for example the preparation of oils, juices or jams, pickles, squashes and other preserved foods – preferably at farmers' homes or in small, decentralised processing facilities. This is not only intended to transfer the profits of value adding directly to the agricultural communities who, being the producers of rawmaterial, should thus be enabled to also profit from the further and usually quite profitable processing and refinement of their products, but in addition also aims at developing supplementary means of income – an approach that is of elementary importance in marginal agricultural scenarios. Especially over the last few years, Navdanya has increased its efforts in this respect, its field coordinators and extension workers focusing more intensively on the provision of both initial assistance and subsequent on-site monitoring and organization. Through offering training courses on financial management and matters of planning and scheduling crop production, harvesting, cleaning, processing, procurement and transport, the organization aims at actively encouraging and supporting local farming communities in becoming more self-confident, self-determined and self-organized.

It becomes clear that Navdanya undertakes a broad and rather ambitious range of measures in order to encourage and efficiently foster organic agriculture in the region in question. The organization is not merely attempting to develop profitable business, but rather has developed a comprehensive concept including various key factors that are of particular relevance to local farmers, their households and village communities. At this, particular emphasis is placed not merely on providing efficient assistance to local farmers, but also on the essential issue of actively integrating them at various stages. This is to be pursued through a rather comprehensive range of measures: The theoretical and practical distribution of fundamental knowledge on organic agricultural principles and techniques; the establishing of local seed banks and the free distribution of local seed material; providing organizational and financial assistance in terms of obtaining organic certification; the on-going development of direct market access with particular emphasis on domestic sales channels; facilitating procurement and transport; the setup of village womens' groups. Therefore, the organization does not merely aim at maximising local farmers revenues through minimizing their overall expenditures. Rather, through context-sensitive capacity-building, does its overall strategy

focus on the creation and stabilization of largely self-determined 'pockets of local prosperity' where local farmers – and here in particular women – are being equipped with sets of empowerment tools aimed at enabling ecologically sustainable and socially just development from below. Ultimately, however, Navdanya tries to achieve a genuine and universal change not only in the mindset of Indian smallholder producers, but also consumers, politicians and civil society as a whole. In this respect, the promotion of organic agriculture represents a fundamentally important module, aiming at achieving household food security, rural poverty reduction, biodiversity conservation, the strengthening of farming communities and the careful use of natural resources all at once.

## **5. Access to the Field II**

### **5.1 Farmers**

'This study is defined as an inquiry process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting'.

(Creswell, J.W. 1998: 2)

By now it should have become evident that Navdanya is attempting to pursue a quite comprehensive approach towards sustainable and stable rural development in the current Indian scenario. It is quite remarkable that at its very core, there is a strategy which is essentially based on the local promotion of organic agriculture, backed however by the building of broad awareness through global networks. Navdanya is a fine example of how global and local discourses and fields of action are translated, mediated and brought together and it is partly against this background that the 'unpacking' set out above has to be understood. It also has become clear that individual influences, too, are playing a vital role and must not be underestimated. What emerges from this complex process is a particular configuration of organic agriculture, the pursuance of which generates particular local fields of practice. From this perspective, not only is it the building of a deeper understanding concerning the complex and wide-ranging linkages, transnational policies, ideological backgrounds and translocal agendas within which Navdanya operates, that is of particular interest, but also and – even more interestingly – it is the particular configuration of 'organic' that the organization has brought forth in the area in question. Therefore, the making visible and rendering tangible of the historical processes, root concepts and particular measures



underlying the generation, promotion and dissemination of organic agriculture in the here investigated local context, is an essential step towards understanding why and how local farmers have come to speak of themselves as being 'organic', i.e. how local fields of practice are generated. Moreover, not only does this help to elucidate the process of how organic agriculture is comprehensively unfolding within the here chosen fields of practice, but also is it of vital importance for the meaningful investigation of individual farmers' agency and in this process – an issue which will be discussed at length in the further course of this study.

The approach which is being followed by Navdanya considers the context-sensitive promotion of organic agriculture, where not only particular environmental parameters but also the sensitivity towards culture and local agricultural knowledge is viewed as a fundamental element, as a key tool for the successful initiation of sustainable and actor-centered rural development. For achieving this goal, the organization claims to follow a comprehensive and multi-dimensional approach which builds on a broader range of supportive measures rather than following the hitherto widely pursued reductionist paradigm of equating rural development with increasing monetary income. One of the basic assumptions of Navdanya's approach is that there exist substantial similarities between its own concept of organic agriculture and the actual situation of marginal agricultural scenarios – which is maintained to be especially true for the here investigated context. The organization claims that there existed some kind of congruency between its own basic motivations, concepts and strategies on the one hand and local marginal farmers' interests and cultural repertoires – such as the long-term stabilization of local agroecosystems, the fundamental ability of households to access and control local resources or the inclusion of local farmers' cultural expertise in the form of knowledge, livelihood options and strategies – on the other. It is alleged that the underlying accordance of these overall objectives eventually allowed for culturally and ecologically sensitive organic agricultural production – although, of course, the latter usually had to be sort of 'triggered' through the transfer of several supporting actions.

In order to find out whether these allegations – whose conceptual basis has previously been presented fairly detailed - live up to their promises, it is imperative to take a close look at the microlevel and to follow organic agriculture very closely into the local society, households and - eventually - into the lives and agricultural practice of individual farmers. Only through the linking with local farmers' motivations, experiences, opinions, expectations and concrete activities can local fields of practice be made visible and become alive with solid meaning, thus also contributing towards a more comprehensive perspective on human well-being in general and on marginal mountain farming households interests and objectives in particular. It is therefore vital to find out what local farmers think about the concepts which are propagated by Navdanya, whether they find

it easy to relate to or even identify themselves with the organization's approach, what they eventually make of the organization's impetuses. Since organic farming is maintained to be a context-sensitive tool for rural development which not only takes into account the sustainable use of local resources but also the sensitive incorporation of local cultural elements, it will be of great importance to identify crossing points where the latter may indeed become part of a localized mode of organic agricultural production. Maybe it will be even possible to reveal concrete examples of participatory development or to show how local farmers, building on their own cultural expertise, have been able to trigger reverse flows of innovations.

In light of all these considerations, in what follows great attention will be devoted to farmers' voices and activities around the issue. In order to develop an increased understanding of whether it is reasonable to assume that the above introduced promotion of organic agriculture might indeed have the potential of emerging as an adequate measure of context-sensitive development, it will be essential to not only closely *listen* to what farmers have to say - but also to *observe* what they are actually doing, thus fundamentally relating to their everyday activities and daily lives. So, the presented results are based on extensive experiences and the broad collection of data during two consecutive phases of long-term fieldwork in the years 2009 to 2011. Based on the application of various qualitative research measures, this in-depth investigation took place mainly within the above-described, geographically clearly defined scenario and is therefore a case study within a rather fixed local setting. Also, it constituted a quite exhausting and time-consuming task<sup>248</sup> - as is commonplace for the collection of significant and meaningful data through the carrying out of research which is grounded on qualitative premises. Above all, it was the active participation in local farming families' everyday lives - staying with them for weeks and even months until, in the truest sense of the word, the researcher becomes 'familiar' with local people - which constituted the fundamental qualitative base of this research. Hence, the material that was collected during the period of fieldwork largely consists of extensive fieldnotes, resulting from all kinds of personal observations, reflections, experiences and informal conversations. There also exist notes and comments on informal interviews as well as a number of direct questionings, some of them edited afterwards. Planned interviews were hardly conducted and in no case does the here applied material result from any sort of pre-structured questionnaire. Instead, when talking to mountain farmers and their families, the researcher always took great care not to create a somewhat rigorous and 'artificial' situation of interrogative character, thus trying to adapt to the situation to the widest extent possible.

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248 'When used as a method, ethnography typically refers to fieldwork (alternatively, participant-observation) conducted by a single investigator who 'lives with and lives like' those who are studied, usually for a year or more'.  
Van Maanen, J. 1996: 263

The 'interviews' that were conducted for the purpose of this research were unstructured in the sense that they didn't follow a detailed plan set up beforehand; nor were the categories for interpreting what the participants said and how they acted pre-given or fixed - which in turn does in no way imply an unsystematic research approach. Much rather, the researcher is of the firm conviction that the single most important prerequisite for genuine qualitative interviewing is a framework that allows for improvisation and spontaneity and that becomes only possible within a setting within which participants can express their own understandings in their own terms – that is in an environment, ambience or situation the participants feel familiar and at home with. Data was thus collected rather broadly and as raw material which usually underwent subsequent editing. However, conversations were not held at random but rather did the researcher listen supportively, trying to be reflexive in terms of framing and re-framing questions and insights in accordance with the participants' responses and their categories and opinions that emerged during the course of the interlocution. Staying permanently focused and preventing the participant as smoothly as possible from wandering off the fundamental issue thus constitutes an absolute imperative when talking to people in a supportive way. Nevertheless one has to consciously be aware of the fact, that the data gathered from whatever kind of conversation, interview or discussion only constitutes just one individual, albeit important aspect, and that the much-vaunted 'local point of view' can only be uncovered within an inquiry *process*. This process comprises all kinds of actions and talks and many times moves within a 'tacit' realm. The resulting analysis thus refers not only to what is being explicitly stated, but also takes into account all kinds of sensory and behavioral data as well as other relevant and constitutive background information<sup>249</sup>.

## 5.2 The Use of Chemical Inputs

'Posla' is an alpine pasture, located some 300 to 400 metres above the village of Saur. In spring and autumn, the people of Saur drive their cattle up there almost daily in order to let it feast on fresh grass and herbs. When the night draws in, cattle and cowherds return back to their shelters in the village since night-time temperatures during that time of the year are still far too cold to spend the night at this altitude. However, there's one family who almost permanently resides at Posla and the only time they take refuge in their little house in Saur is during the frostiest periods of the winter months. I meet V.S. and his wife on a warm and sunny april afternoon on one of their potato fields on the steep slopes of Posla where, together with another ten or twelve people, they are planting

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<sup>249</sup> Apart from specific atmospheres, moods or feelings on behalf of the participants, during the course of this inquiry process even the researcher himself might discover own shortcomings or preconceptions that prevent him from allowing participants to tell things as they see them.

potatoes. Amongst the workers is also M.D, the mother of the household I am presently accommodated in as well as her 18-year old daughter R. Immediately after breakfast, the two of them had left Saur in order to help V.S. planting his potatoes while I, after having attended to some other issue, had set out to follow them only a couple of hours later. On my way up, I am joined by my hostfamily's youngest daughter who had been told to drive the cattle up to Linguri<sup>250</sup> – yet another alpine pasture situated halfway between Saur and Posla. Due to the cattle slowing us down, it takes us almost an entire hour to reach the grazing grounds at Linguri where the little 'gopika'<sup>251</sup> happily joins a small group of other village women who are all going to spend the day up here, chatting, dozing, every now and then yelling at their animals. I promise the little girl to be back from Posla with her mother and older sister before dusk so that we all can return back to the village together, and proceed on my way up. Although walking quickly now, I am still careful as to where I put my feet. Sometimes, the narrow path is covered with pine needles, providing a very safe, non-skidding surface; elsewhere, rain and cattle hooves have turned the soft stones on the ground into a steep and slippery chute. All along the way, the bright red of blooming rhododendron trees flashes through the undergrowth and the fresh mountain air is filled with the smell of wet pine needles. Suddenly, right in front of me, a little up the way, a fallen tree comes alive. Having seen me approach, two huge Langur monkeys, each of them the size of a small human being, hastily take flight into the thickets. It happens so fast that I can only get a glimpse of them. Then, they're gone and only some vibrating branches of the surrounding trees suggest the direction of their escape route. Without further unexpected incidents I cover the remaining distance to the upper pastures in less than half an hour. Leaving the jungle behind, a fairly large hillside covered with steep terraced fields opens up. Further up, the slope is crowned with orchards of young apple trees. Busy working on one of the fields, I meet M.D. and her daughter R. as well as V.S, his wife and the rest of the working party, most of them middle-aged women. We briefly exchange some formal greeting, V.S's wife hurries to their little hut to get me some tea, and, while the others resume working the soil, I sit down on the edge of the field to take in the magnificent view and catch my breath after the demanding ascent. A fairly small but rather wild and shaggy-looking dog rushes up the hill and starts jumping around me, wildly wagging his tail. Returning with a cup of tea in one hand and a heavy sack of potato seedlings in the other, V.S.'s wife rigorously shoos the filthy animal away and

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250 Linguri is another minor stretch of land about half way between Saur village and the alpine pasture of Posla, located some 200 metres above the village. Here, the land has only been partly made into fertile ground and most of it has been left somewhat unchanged to serve as seasonal grazing grounds for many of the village's cattle. Both the poor state of Linguri's soils and climatic constraints due to its higher situatedness do not allow for the cultivation of an extensive variety of foodcrops but traditionally has been limited to potatoes. As of recently, some farmers have also started to grow apples there.

251 Cow herding girl

apologizes for the dog's behaviour: 'He's still very young' she says, smiling, handing me the cup. 'We only brought him up here two weeks ago.' A little thoughtful expression comes to her face and she adds: 'Before that, there was another dog, older and stronger. But that one was taken away by a leopard. So we had to get another one.'

Sipping my tea, holding the excited dog down by the neck, I watch one fraction of the working party breaking open narrow ditches while another carefully produces pre-selected seedlings out of several brown jute sacks and, after examining them once more, puts them neatly arranged in the prepared furrows. Before the seedlings are covered with soil, V.S. himself applies a few handfuls of small, brownish pellets. When I enquire about the supplement's nature, he smiles and tells me this was 'medicine from the market'. I ask some further questions about dosage and field of application of the substance but all he tells me is, that 'without the medicine, the plants become disease'. Since he is not using the original bag, I can only guess at his precise intention. However, it seems that he's using some sort of soil-fertility increasing substance, presumably DAP, which of course would have a positive effect on plant growth but not necessarily on plant health. Since in this case, he is very obviously resorting to a preventive-oriented strategy, he might as well be applying some sort of pesticide or fungicide which fights crop loss at a very early stage.

Whatever the case, V.S. does not give even the most rudimentary information as to *why and what exactly* he is doing. Furthermore, as was already extensively indicated in the introductory section of this study, the incident illustrates the high prevalence of chemical additives within the Indian agricultural sector. Even in the above described, clearly highly marginal and remote scenario, agriculturists make use of chemical substances in order to increase crop performance - even though they may not be acquainted with the details of usage, specific scopes of application or the various ways different substances precisely effect and influence crops, soils and the local environment. The use of chemical additives is deeply rooted in agricultural production in India and they are applied even in very remote hill areas and rather frequently, farmers who at first claim that they did not make use of chemicals of any kind would still use some sort of artificial fertilizer or insecticide.

Thus, when explicitly asked about their experiences with chemical inputs and crop performance, the vast majority of small and marginal farmers impresses with rather extensive experience on the subject. It is quite interesting to note here that, similarly to the example of V.S. given above, hardly any of the surveyed farmers were able to precisely indicate which agrochemicals exactly they were or had been using. External inputs - be they fertilizers, insecticides, herbicides or fungicides - are usually simply referred to as 'medicine from the market' and are widely contrasted with 'home-made medicine'. The vast majority of farmers does not possess detailed information on the correct and efficient application of the respective agrochemicals. As has already been extensively presented

at an earlier stage<sup>252</sup>, the subsidization and production of agrochemicals in India is severely lopsided in favour of Urea-based fertilizers. Subsequently, also their application is heavily distorted and it is therefore quite safe to assume that most of those surveyed were broadly referring to urea-based fertilizers, most likely Urea and DAP. Some farmers also pointed this out explicitly. However, this does not mean that farmers are largely uneducated or unwilling to acquaint themselves with the agrochemicals they make use of. On the contrary, as has been emphasized several time so far, farmers quite frequently and regularly exchange information, ideas and experiences on the agricultural techniques they use and their results. That they don't know which agrochemicals they are using and how exactly this should be done implicates two quite simple points: Firstly, due to reasons lying in India's official agricultural policy, it is especially UREA-based agrochemicals that are available on affordable terms virtually everywhere. Hardly ever do marginal farmers make use of other, more sophisticated – and also far more expensive – fertilizer complexes. And secondly it conceals the fact that the kind of knowledge farmers employ and have access to is of a very different nature. What farmers seem to lack in theoretical 'background information' - for example the precise labels of agrochemicals, scientific explanations for their mechanisms of action or the exact dosage and fields of application - they compensate for through practical, empirical experience. Especially in the above described, highly fragile and unstable environmental scenario, productive agriculture requires a constantly changing mix of methods, techniques, inputs and so on. Thus, only few innovations will ever be permanent. Rather it is absolutely essential for mountain agriculturists to continuously and – first of all actively - invent, develop and adapt new technologies and to implement these innovations within their own environmental context. In this respect, their knowledge is of a more direct, more immediate and by far more flexible dimension than the highly uniform prescriptions of commercial agriculture - a fact which will be discussed in more detail at a later stage.

It is however of crucial importance to bring to mind that the promotion, adoption and dissemination of organic agriculture in the here investigated context must be viewed against the background of widespread use of agrochemicals described here. It is impossible to understand the significance of organic agriculture in macrolevel discourses on human development, poverty and food security without historical knowledge of the green revolution and the increasing environmental stress and social tensions resulting from its broad implementation; to comprehend the meaning and relevance of organic agricultural practice in Saur village without examining at least to some extent the corresponding antecedents is just as impossible. In chapter 2, there has already been given detailed information on the historical development of India's official policies concerning rural development

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252 Chapter 2.1.3

and the promotion of new technologies and agricultural inputs. It was explained at length how, over the past few decades, agricultural development policies' main target was to increase farm production by introducing new inputs and technologies, thus eventually seeking to enable farmers to overcome their subsistence level. Moreover, it was demonstrated how agricultural activities were - and often still are - almost exclusively considered from an economic viewpoint which associates the generation of marketable surplus of agricultural products with efficiency, progress and modernity. It is therefore quite obvious that, due to decades of massive efforts from official sides to promote the expansion of agricultural production by means of green revolution measures, also the farmers of Saur village have over time acquired considerable experience in the field of conventional agricultural production, and applying chemically-based additives has long since become a common strategy of attempting to enhance and secure local agricultural production.

From what has been outlined in chapter 3, it has become clear that the environmental setting within which the people of Saur conduct their agricultural activities is very complex, characterized first and foremost by an outstandingly high degree of inaccessibility and ecological fragility. It is an extremely dynamic, unstable and vulnerable surrounding and thus agricultural production within these highly challenging conditions naturally becomes quite risky. Within this particular setting it is absolutely crucial that local agriculturists make intensive use of various biological niches in order to take optimal advantage of different natural conditions and resources as well as to actively enhance the overall stability of what has been called the multi-component farming system. This system's individual elements, due to the challenging environmental conditions, are highly interdependable and fundamentally sustaining each other while contributing both directly and indirectly to the overall stability of the whole ensemble. However, with the schemes and mechanisms of rural development agencies and government institutions still largely being based on the reductionist approach of associating rural development almost exclusively with the increase of agricultural output, many agriculturists in the region have come to rely on the regular application of chemically-based external inputs, especially fertilizers and pesticide and herbicide complexes which bear no relation to these highly specific preconditions.

Despite the widespread application of chemical inputs even in the most remote and marginal areas of Uttarkaśī, though, in what follows it will be shown how local agriculturists themselves are still quite aware of the complexity of the system they mainly depend on. Knowing very well that their basis of livelihood is extremely fragile, with arable land, livestock, forests and grasslands being closely interwoven, they are also widely conscious of the fact that they are the consolidating 'administrators' of this balance. The findings made during the fieldwork period also indicate, that there don't exist considerable differences between organic and non-organic farmers concerning this

issue but rather, that by far the largest part of the farmers share this basic attitude. Due to this awareness, farmers often find themselves caught between the reductionist, yet easy to perform practice of applying external inputs, and the rather complex and labor-intensive management requirements of the environment they live in. Today, a good many reasons why a considerable number of households in Saur village has turned towards organic agriculture, are largely attributable to this situation.

### **5.3 Strategies of Comprehensive Health Management: The Soil**

A couple of days after my visit to V.S.'s place up at Posla, one morning I find myself working on one of my host family's fields on the steep slopes below Saur village. It is the beginning of April now and therefore time to prepare the fields for the sowing of paddy. The day is gray and damp, with an overcast sky and constant drizzle. The weather has been like this for quite some time now. Not a single ray of sunlight within several days. Instead, constant rain and continually wet clothes have given me some kind of mild depression which is quite useful while working silently for hours on end. Normally, working hours on the family's fields are quite joyful – with lots of laughter and chatting – but in this weather, even the usually so much cheerful daughter R. seems to prefer to work by herself. The farmers in the village say that the weather is changing, that in the past, at this time of the year, it never used to rain that much. And, as a matter of fact, it shouldn't since it is high time for sowing and with so much rain, the seeds might just simply rot in the fields. It is due to climate change, they say, that the monsoon rains are becoming more erratic and, as happened last year in the region, even disastrous. It is also due to climate change that now, during the sowing period, the heavens burst open while later, during the maturing stage, the crops will surely suffer from drought. It has always been like that, others say. However, C.S., the head of my host family, can hardly be provoked to give voice to such clear statements. Much rather, when asked for an opinion, his face shows an almost jocular expression and, slightly raising an eyebrow as though he wanted to feign thoughtfulness, he utters a somewhat shallow and detached view. Whether this is a genuine trait of personal character, or simply a strategy he has developed over the years in order not to get into conflict with the female majority of the household, I was unable to conclusively clarify. The fact of the matter is that, apart from C.S., the family consists of his wife, three daughters and two sons. The latter however, are both attending college and return home only during vacation periods which leaves their father in a situation heavily dominated by his wife and daughters. C.S.'s is a quite typical, subsistence-based family who basically lives on what is brought in from the fields. At irregular intervals, C.S. also takes the bus down to the 25 kilometres distant town Morī where he



earns a little extra money doing some casual work at the local veterinary station. For a couple of years now, the family has stopped using chemical inputs and instead has turned towards organic agricultural production, using merely organic on-farm inputs for the preparation of both fertilizer and pesticides. Also they collect their own seeds. C.S.'s wife M.D. maintains the family's 'Koṭhār' - a separate wooden storage structure where both grains for consumption and seeds for next year's harvest are kept<sup>253</sup>. M.D., upon request of her younger brother. B.S., has agreed on collecting and adequately storing in her family's Koṭhār a variety of local seeds. She does so firstly because B.S., who is not only a convinced and enthusiastic organic farmer himself, but who also partly works for Navdanya as a part-time employee, on behalf of the organization has asked her to do so. Secondly, because she anyway saves and stores her own seedmaterial, which, as she says, guarantees not only high seed quality but also, that the seeds come free of costs<sup>254</sup>. In this way, her additional responsibility requires only minimal extra work on her part while at the same time providing her with the opportunity of being able of doing her brother a favour. And thirdly, because she too is convinced that organically grown food possesses some essential qualities that commercially grown crops are lacking. And even though the family's life does not allow for idleness - at least on behalf of the female household members - hardly a day passes when I don't wonder how the family is able to make ends meet.

Thus, on that particular day of April, while taking a short break from manually levelling the field in question, M. D. and I start a conversation of the current financial pressure the family is facing, namely in order to pay for the college fees of the oldest son. Leaning on the long shafts of our wooden tools with which we shatter the heavy clods of soil that were brought up by the plow the previous day, she wipes her wet face with the sleeve of her salvār and tells me that many times, she has already thought of selling some land in order to have more money to spend. Selling land was good business here, she says, since many people from higher situated villages regularly bought property in the area. While in Saur, the climate was suitable for growing a rather big variety of crops, fruits and vegetables, further up the surrounding mountains farmers had to cope with even more harsh climatic conditions which allowed only for the cultivation of a very limited range of crops - commonly potatoes and amaranth. So the issue was neither to find a buyer nor to make a decent amount of money out of it. But rather, that she was too attached to their land. 'What can we do?' she rhetorically asks and in the same breath gives the answer: 'We are farmers. And I have been working this very soil for years now'. She is afraid that, once the land is sold or – even worse – given to somebody on lease, one also gives away one's influence on it. 'You won't know what

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253 See Methodological Appendix II/ Picture 9

254 See Methodological Appendix II/ Picture 10

the new owner will be doing to the land. In only a few years he might completely ruin it while I have worked all my life to keep it healthy` she argues, adding: `Or he might not take care of it at all and it will become overgrown and fallow`. Excitedly, she points at a nearby piece of land which is completely overgrown. `Look at that field over there` she cries, `look how many thorns and briars! It has not been taken care of for years. And now...` bending down she picks up a small piece of soil and slowly crumbles it... `have a look at the soil on our field. How dark and soft! Very good soil. A real farmer takes care of his fields and keeps them in order!`

When being asked about their experiences with the usage of chemically-based agricultural additives, most of the surveyed farmers - be they organic or conventional - tell of a visible decrease in soil quality and fertility when the commonly used agrochemicals are applied over a longer period of time. They report that usually after four to five years, yields start to decline significantly if the crops were not supplied with adequate amounts of fertilizers any more. At the same time, they describe distinct changes in soil characteristics. Here, most of the farmers agree that use of chemical fertilizers over a prolonged period of time significantly `hardened` the soil to an extent that made it noticeably more difficult for them to plow their fields. In addition, this increased degree of compression of otherwise loose and easy to work top soil layers resulted in lower water holding capacity and hence significantly decreased soil fertility and increased `dryness`. The farmers are very well able to give quite precise and differentiated descriptions of the symptoms and effects caused by the use of agrochemicals since virtually all of them had already experimented with them. While their accounts of the effects of the use of chemicals are based on their observations concerning the various changes in soil quality, at the same time they apply pathophysiological attempts to explain the underlying reason for these distortions. Thus, quite a few farmers expressed the belief that, based on their observations, the use of chemical inputs would lead to a rise in temperature within the soil – a commonly applied concept in the context of Indian medical diagnosis, indicating imbalances within the `patient`. Due to the use of chemical fertilizers and pesticides, they say, the soil becomes too `hot` and therefore hard and dry and heavy and a previously healthy and `balanced` organic matter would be converted into a somewhat troubled and distorted dependent. Many of the respondents used rethorics of the human body in order to describe critical developments and individual symptoms of the soils they were working. When they examined the possible root causes for negative distortions that had occurred in the soil due to the application of chemical inputs, they used the very pathophysiological strategy of the binary oppositions of `hot` and `cold` which is applied when disease is diagnosed in a human patient. Thus, imposing the same standards on both entities, the farmers would establish and reveal an almost intimate link between their land and themselves, a very strong `attachment to place` as it so

often can be observed within agricultural communities of South Asia.

If one recalls the immense significance of healthy and fertile arable soil as the most important economic resource - especially for marginal agriculturists in remote or even inaccessible areas - it becomes clear why farmers are compelled to very closely monitor their soil's 'well-being'. In an environment as fragile and complex as mid- and high-altitude mountain areas, where resilience to human and natural ecological imbalances is very low, recovery from environmental degradation happens slowly. If, therefore, natural resources are damaged or degraded, the already heavy dependency of local agriculturists increases even more, subsequently pushing them even deeper into the vicious circle of marginality. In any predominantly marginal agricultural scenario, the protection and conservation of natural resources is somewhat mandatory and degradation or overexploitation of such resources – be they soil, groundwater or biodiversity - has the potential to seriously threaten the health and lives of local populations. For this reason, the above described perception of land as being a somewhat integral member of human community that requires constant care and attention, clearly is part of local farmers' long-term strategy of prevention of major crisis. In the mountain areas of Uttarkaśī, where water availability is not a problem, soil health and fertility become the crucial factors for agricultural success – and thus the central aspect for any livelihood discussion. It is in this regard that a good farmer is also considered to take good care of his fields and to assume responsibility for his property. The here expressed interconnectedness between soil health and human health is deeply rooted and prevailing in the local understanding of social life and an essential key finding regarding the way in which mountain agriculturists perceive themselves and their fundamental relatedness to their surrounding environment<sup>255</sup>.

In this regard, also for M.D, the interconnectedness between her own family's health and the health of her land is a matter of course. Just as she monitors her husband's and childrens' well-being, she also quite naturally takes care and responsibility of the family's most important economic resource and basis of existence - their land. Health is given highest priority and requires special assistance and protection. With healthcare being a scarcity, the nearest hospital far away and medical treatment in general very costly, the close monitoring of health within one's own family and community is somewhat mandatory and includes not only the symptomatic treatment of human diseases but – more importantly – 'strategies of comprehensive health management' which include environmental health issues as an essential aspect. In this regard, agricultural land constitutes the prerequisite not only for the physical health of the individual, but also for the economic health of the household. It is this the reason why local mountain farmers are very much aware of their dependence on healthy soil – a fact which is reflected in the way they perceive and talk about their land. The vital

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255 See Methodological Appendix II/ Pictures 11 and 12

interconnectedness between soil health and human well-being is quite present in everyday life and not only are local farmers quite conscious of the importance of this linkage, but also is it the very reason that many local agriculturists have opted for organic agriculture - or are at least considering to change their principal orientation in favour of a more sustainable approach.

### **5.3.1 Strategies of Comprehensive Health Management: The Body**

In order to be able to come up with a more adequate and detailed analysis of the way local agriculturists perceive their own position within the above described overall framework, at this point it appears useful to briefly reflect on the actual connection, the material and tangible conjunction between soil and human body: Food. Food does not merely act as a bridge link between the land and the human body and self, but – especially after preparation - in addition holds much broader sociocultural implications: Food is the symbolic - yet highly material - medium par excellence<sup>256</sup>. It is 'a liminal substance, standing between nature and culture, the human and the natural, the outside and the inside'<sup>257</sup>. In this light, the intake of food constitutes an act of 'incorporation' of an external substance into the human body, thus becoming a highly liminal substance charged with an abundance of different perspectives, symbols and meanings: 'At the simplest, biological level, by the act of eating and absorption of food, we become what we eat. By taking food into the body, we take in the world'<sup>258</sup>. The practice of cooking hereby represents a transitory process where raw matter is transferred from the state of 'nature' to the state of 'culture', thus domesticating the substance which is prepared and eventually allowing it to become food. It is widely agreed that, while the initial motivations surrounding the consumption and preparation of food in the first place are governed by biological needs, these procedures are then shaped and adjusted according to socio-cultural regulations as well as individual influences: 'Food consumption habits are not simply tied to biological needs but serve to mark boundaries between social classes, geographic regions, nations, cultures, genders, life-cycle stages, religions and occupations, to distinguish rituals, traditions, festivals, seasons, and times of day. Food structures what counts as a person in our culture'<sup>259</sup>. In addition, particularly in the Indian context, food is considered as a highly unstable substance and a source of great ambivalence: Although it is necessary for survival, at the same time it is a source of great pleasure and satisfaction. While freshly prepared food is currently appetizing and delicious, it is only a very short time away from turning into excreta or

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256 Morse, J.M.1994: 95

257 Atkinson, P. 1983: 11

258 Bakhtin, 1984, pp.188-189, as cited in Schultz, E.A.1990: 120

259 Curtin, D. W. 1992: 4

rotting matter. In addition, the preparation of food and the experience of eating it is inseparably linked with close human contact, thus making it a highly contamination-prone substance. Since food, in the truest sense of the word, is permanently 'embodied' into individual selves who, in turn, are understood as dynamic and who are subject to permanent and conscious moulding within specific socio-cultural contexts, the intake of food becomes an act of great vulnerability to anyone who eats since the transition from food to self is fraught with irreversible consequences. Therefore, through the liminal and ambivalent properties inherent in food, the individual person who eats becomes what he or she eats, embodying the 'mortality of human flesh, the inevitable entropy of living matter'<sup>260</sup> and thus poses a potential threat to others. It is for this reason that 'food and culinary practices thus hold an extraordinary power in defining the boundaries between 'us' and 'them'<sup>261</sup>.

Food is therefore much more than just a banal everyday practice of survival; cooking more than rendering raw matter into something more edible. Food, its consumption and preparation encompass a whole cosmos filled with profound and powerful symbols and meanings, many times falling back on highly ambivalent concepts. The intake of food being a liminal and highly 'incorporative' act of both immense personal and social potential, the socio-cultural impacts of food consumption span the whole range from individual survival to collective indulgence to social mechanisms of mass exclusion - which is especially true in the present context where virtually everybody shows particular sensitivity for this very delicate issue.

Following these basic considerations, food constitutes the most elementary connection between agricultural produce and the human self within a wider sociocultural context. Being produced from various field crops, food is directly linked to soil, thus making it the foremost basic prerequisite of this linkage. Just as the soil can become 'too hot' and therefore imbalanced and diseased – for example through the constant use of chemical fertilizers and pesticides – so does the body if food grown on unsound land is eaten. Needless to say that the human body therefore can contract weakness and ailment from crops which were grown on soil of poor health. From this perspective, both entities – with food acting as a liminal substance and connecting link – constitute a closely interwoven synthesis. Whilst the people of Saur village do not express this explicitly, they nevertheless reveal this essential connection through the way they keep on referring to it. It becomes most obvious when they tell of the effects agrochemicals and organic inputs respectively have on the health of their land and thus, in turn, also on themselves and their families. Thus, once this deeply underlying general notion of interconnectedness is realized, one finds that it is an

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260 Lupton, D. 1996: 3

261 See above: 26

essential perception and used quite frequently.

M.D., for example, too, unknowingly applies this categorical classification. When I draw her attention on the fact that also V.S. applies agrochemicals on his potato seedlings, she expresses her hope that in the future he also might do without external chemical inputs, asserting that she is constantly trying to inform him about organic techniques such as composting, the usage of cow urine or the preparation of 'homemade medicine'. When I enquire why, apparently, she thinks so highly of organic, she tells me that organic food simply is healthier – for the moment leaving me in the dark whether this statement relates to the soil or the human body. However, already the next sentence makes it clear that she's actually referring to both entities, drawing up an implicit analogy between them: 'When one takes medication whenever there is a problem, it is not good for the body' she says. 'One gets used to it and the body becomes weaker and gets used to not coping with problems on his own but slowly comes to completely rely on the medication'.

Also another organic farmer's wife in Saur village, when asked about her experiences with the effects of the usage of chemical substances in her fields, immediately indicates the interconnectedness between human beings and the land they live on. Referring to her husband who is a passionate hookah smoker, she explains that, just as people can get hooked on toxic substances such as tobacco or alcohol, in very much the same way the soil can become addicted to chemical inputs, thus becoming weaker and less fertile. She adds that it is only through the constant addition of those inputs that productivity can be kept high and that, once the soil has become used to them, one is obliged to further usage. 'If you keep on taking medications everyday' she says, 'your body will get used to them and they will lose their power. The same is true for the use of chemicals on the soil. You have to use them again and again, more and more of it. This is not good for the soil. It becomes weak and addict'.

An old farmer from the same village tells me that the use of chemicals in the production of food crops bears a great risk for the health of both the soil and the bodies of those who eat them. According to him, this kind of food does not have the same amount of contents as food which is grown without chemical additives. He does not associate the use of chemicals to go along with specific diseases. Rather, he expresses concern about a general state of weakness, of distortion and loss of natural potency within the soil. 'Before the use of chemicals became widespread' he explains, 'people were stronger and more resistant. They were of better health. Even an old person who slipped and fell would get up unharmed. Today, even children break their bones when they fall down while playing. The chemicals in the food make us weak'.

During one of our conversations, C.S. unconsciously, yet at the same time explicitly points to this consistency between the human body, foodstuff and soil. Talking about the advantages and

disadvantages of nitrogen-based chemical fertilizer<sup>262</sup> he explains:

‘Applying Urea to the fields considerably hardens the soil and you have to put more water on it. If grown on hard soil, plants can’t take root properly and therefore underperform. They become short and frail and weak. However, if the soil is loose, it provides the plants with a stable hold in the ground and they grow tall and strong and the harvest will be rich. It is like this: If you provide your child with healthy milk and healthy food, it will become strong and healthy. It is the same with plants’.

All of the surveyed farmers in Saur village have made experiences with the usage of external inputs in the form of chemicals or, as they call it ‘medicine from the market’ and this is true even for very remote areas. Moreover, they all agree on the fact that the use of chemical fertilizers would boost crop performance only initially. However, this effect would soon recede – usually after three to four years - and thereafter, even to maintain the reduced level of output required ever-increasing doses of chemicals. It is because of these observations of steady decline in crop performance and soil fertility and the above explained, deeply rooted connection between human well-being and soil health, that farmers quite naturally detect a relationship of almost direct proportionality between their field’s soils and their bodies, the latter being to a large extent sustained by locally grown crops which in turn will ultimately become ‘embodied’ in the form of food. It is due to the same reasons that a growing number of local farmers is deciding to renounce the increasingly costly and ‘unsafe’ use of external inputs and instead are turning towards organic agricultural practices.

### **5.3.2 Strategies of Comprehensive Health Management: The Livestock**

In the multi-component farming system, however, the stabilization of soil as the foremost basic prerequisite for maintaining the fragile livelihoods of mountain populations, also includes the monitoring of livestock health. In chapter 3.2.3 it was already introduced how, in terms of transferring scarce but greatly required biomass and micronutrients to the fields, the only available option of doing so has traditionally been the ‘interposition’ of livestock. The latter thus constitute the bridge link between ‘uncultivated’ support lands and ‘cultivated’ arable fields with the farmer managing the transfer and recycling of nutrient flows. It is therefore hardly surprising that livestock form an integral part of mountain livelihood and that, apart from directly extractable products, it is especially their contribution to the permanently required maintenance of healthy and fertile soils which makes domestic animals yet another component that comes under local farmers’ strategies of comprehensive health management.

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<sup>262</sup> Here, he is explicitly referring to Urea.

In the mountains of Uttarkaśī district, people and animals literally live under the same roof. The house of C.S.'s family in Saur village, is a quite typical example for the traditional architecture of this region and in its very structure reflects the closeness between farmers and their livestock: While its foundations are made from rough-hewn blocks of stone, the building itself is an entirely wooden construction made of solid beams of Devdār and thick planks of pinewood, the latter being skilfully fitted into one another. The roofs are tiled in dull black slate. Since the village is situated on a hillside, virtually all of its houses have several floors with the entrance door usually being located on one of the upper floors<sup>263</sup>. While C.S.'s house has only two floors, many other properties span over three or even four storeys. Cattle is usually kept in the ground floor shed. If the house of the family provides space for goats and sheep, those reside on the first floor. Rather often, bee hives are attached to the inner walls of the animal sheds. The farmers's family lives in the upper storeys. Similar kinds of architectural structures can be found anywhere throughout the region where usually at least one kind of livestock – mostly cattle – is kept in the sheds on the ground floor. In the case of the household which is taken into account at this point, the household's two cows, calf and ox are kept in two low-ceilinged sheds right below the family's actual living space. Their wooden doors open up to a little courtyard which is paved with black slate and surrounded by a knee-high wall made from layers of roughly worked fist-sized stones. This open space allows for multiple household operations such as cleaning of the stables, drying of seeds, grains and clothes and as 'run' for one of the cow and its calf who usually spend their days there in the open, tied to stakes, munching away on roughage and kitchen scraps. It is thus that the architectural structure itself creates great proximity between people and animals through integrating the latter into the domestic sphere of the household.

Apart from this rather apparent physical connection between the farming household and its animal residents, the importance of livestock for soil health or rather, the interrelatedness between 'cultivated' and 'uncultivated' land via the agency of livestock, is reflected by the single most important day-to-day activity in a mountain farming household: Clearing the dung out of the animal sheds and then carry it off to a compost heap or pit. It is this the very first task of the day and performed with imperturbable routine by the women of the villages where both organic and conventional households hold firmly to this practice. In the above described household, this task is assigned to different household members – there are four daughters - at regular intervals. Even the youngest, 10-year-old daughter is not spared this work. What is being cleaned out of the animals' quarters is broadly called 'gober' and is a mixture of dung, urine, bedding materials and fodder residues, the latter including varying amounts of dried straw and freshly cut leaves depending on the

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263 See Methodological Appendix II/ Picture 13



season's offerings. The result is a rather moist compound of digested and undigested fibre. Without the help of artificially produced fertilizers, the only available option of adding significant amounts of soluble nitrogen and other micronutrients to the usually not very fertile mountain soils is via the application of gober. In order to gain maximum biomass output, the sheds are cleaned thoroughly daily and the animals are provided with new bedding material and fresh fodder. Rather often, a major proportion of the latter is left uneaten by the animals. However, while moving and rummaging their fodder, they spread and dishevel it, thus mixing dung and biomass themselves. Usually, the women work together in order to finish this task quickly and it is only very infrequently that one girl alone has to do this job on her own. However, the activity of cleaning out the sheds and carrying off the gober is *always* performed before breakfast – many times even before the fire in the kitchen is lit. In the very morning, nearly all women in the village are busy carrying gober in open, woven baskets strapped to their backs. Therefore, with the farming household assuming the essential task of managing and channelling the interrelated needs between human beings, livestock and agricultural lands, the collection and processing of manure in order to replenish the predominantly poor soil's content of micronutrients is the most important, most routinely executed task within the present agricultural scenario. It is this deeply rooted activity which, in an exemplary manner, demonstrates how in the local multi-component farming system, farming households actively engage in persistent execution of an overall scheme of comprehensive health management. Although there is no doubt that the practice of actively returning biomass and micronutrients to the soil via the agency of livestock is widely regarded as an absolutely essential prerequisite of agricultural success, there exist quite different opinions on how exactly this should be done: While some farmers dump their gober into pits, others prefer piling it up in heaps and still others spread the gober directly on their fields<sup>264</sup>. However, there exists a certain awareness on the difference between 'processed' and 'unprocessed' manure, that is to say on the results of 'composting', which is largely owed to the influence of external agencies and which will be dealt with in detail later. Furthermore, as has been explained earlier, farmers generally are very much aware of the effects chemical fertilizers have on the 'well-being' of their soils and many times, they would oppose them to the benefits of their own natural gober.

Indeed, just as the households feel committed to take good care of their fields' soil, they with similar affection see to the needs of their livestock. Here, of course, above all cattle is given a special status. Without cattle, in the multi-component farming system, there is no farming at all since they do not only provide considerable quantities of manure but also supply mountain agriculturists with vital ingredients for the preparation of a variety of local pesticides and

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264 See Methodological Appendix II/ Picture 14

insecticides which are all based on cattle dung, cow urine or milk products – thus in turn contributing again to soil health and fertility. Moreover, they provide the draught power required for crop production. This is why a substantial quantity of time and energy is used in order to ensure the well-being of cows, bullocks and calves: Apart from providing the cattle with fresh fodder and bedding material for their sheds, as soon as the season permits, people lead them to graze outside the village by the waysides. A couple of weeks later, they are regularly, if not daily, taken to the subalpine pastures of 'Linguḍī', halfway between Sour village and Posla, where they roam rather freely and feed on fresh grass and herbs. Usually after the bulk of the day's work is done, both men and women bring freshly cut leaves from the surrounding forests, carefully choosing the ones that are considered the most 'tasty' and 'rich'<sup>265</sup>. When I question a farmer of Saur village about the leaves he chooses to feed to his cattle, he tells me with a roguish smile that he prefers the leaves of the 'Morū' tree to those of the 'Bāmñj' tree since the former were 'especially rich in vitamins'. Talking to the same man a couple of days later, I learn that now, with spring bringing new vegetational growth, his cows were having 'lots of fun' feasting on the fresh green grass. Another farmer tells me that, while there are two types of stinging nettle - 'Bicchū Ghās' - that can be found in and around the village, the one with the roundish leaves is prepared as a vegetable dish; The second type's leaves however, that are kind of longish, are pounded and, together with millet flour and whole cane sugar boiled down to a mash. This is fed to the cattle regularly before and during the winter months in order to, as he puts it, 'make them warm and give them health'. Again it is quite striking how people refer to their animals almost as if they were human beings. They can 'have fun'; they can be quite choosy if it comes to food. An older woman tells me that, although it was not really worth taking the trouble of grazing her cattle just a little distance away from the village, she nevertheless had to regularly drive them out. The problem with cows, she explains, is that if they were pampered too much, they'd become spoiled and lazy and they'd refuse to go up the mountain when the time had come to drive them up to the summer pastures around Posla. Just as has been shown above for the case of soil, people also refer to their cattle through linguistic expressions that are used to describe physical needs and traits of characters in human beings. It is for these reasons that the people of Saur village treat their cattle with almost as much care as they bestow upon a human member of the family: They are given special treats for fun; they are fed tonics; they are treated with leniency and rigour.

When, one evening, with the whole family gathered in the tiny kitchen which is filled with smoke as usual, I bring the conversation round to the importance and local value of cattle whereupon M.D, within just a few sentences, expounds the whole dimension of her multi-component livelihood:

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265 See Methodological Appendix II/ Picture 15

‘For us the cow is Lakṣmī Mātā<sup>266</sup>. Without cows you can’t get anywhere here. What would the old ones have done without cows? Where would we be now without them? It’s just that this is our ‘hindu dharm’. The cow gives us milk and ‘gomutra’<sup>267</sup>. When we apply the gomutra on our fields, the soil becomes fertile and the pests die. All the good that comes from the milk – it’s impossible to enumerate! Milk makes us strong, it strenghtens our children. They drink so much of it, sometimes several litres per day and the more they drink the stronger they become! We also eat ‘ghī’ which is good for the brain and very delicious. In the summer, when it is hot, we drink ‘maṭṭhā’<sup>268</sup> which is cool and refreshes. Sometimes, we do ‘pūjā’ and worship our cows. We light ‘dhūp’<sup>269</sup> that comes from high up in the mountains around Kedārkanth and Kedārpatti. The food which is prepared that day will first be given to the cows. It is only after that, that also we will eat. During the pūjā we pray that the cows will keep on blessing us with their gifts and that ‘everything keeps on performing according to its purpose’: The gober, the gomutra, the milk and so on. Here, every family has cows and bullocks. Both are indispensable and much good comes to the people through their cows’.

### **5.3.3 Strategies of Comprehensive Health Management: The Potential for Local Self-Empowerment**

In the previous two chapters, I have stated some general reflections on the environmentally induced interconnectedness between surrounding support lands, livestock, agricultural lands and farming households which I have termed multi-component farming system. In addition, I have described Navdanya’s conceptual attempt to promote a multi-dimensional approach of promoting organic agriculture that claims to take into account specific local conditions, thus putting emphasis on more particular, more localized, more individualized considerations. In consequence, in the present chapter, I have tried to map fundamental points of intersection where, based on local farmers’ perspective, local environmental and sociocultural conditions may indeed be in consistence with the organization’s conceptual approach.

Thus, I have given a rather detailed analysis of how people in the context in question also see themselves as being fundamentally related to both their agricultural land – via the food they eat – and their livestock. Based on the profound evaluation of ethnographic in-depth material it was thus

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266 Although she emphatically points out that there is no difference between male and female cattle, she here explicitly uses the Hindi term ‘gāī’ for cow instead of the word ‘bail’ for bullock.

267 Cow urine

268 Buttermilk

269 Incense

shown how, in the present marginal scenario where human intervention may easily cause extensive ecological disturbances and soil health constitutes the foremost prerequisite for maintaining a livelihood, it is of the utmost importance that farmers constantly and attentively monitor the balance between themselves and their environment's different components, weighing the different factors against each other through a range of different activities. While hereby, the primary objective is the stabilization of the overall system in a very unstable and largely unpredictable environment, the active implementation of this aim is based on the management of nutrient flows. In this light, the farming household assumes the responsibility of collecting, distributing and channelling nutrients within their highly fragile multi-component farming system. Moreover, these nutrient-flows have to be balanced in order to contribute to the overall stabilization of the total system where all components are integral and inextricably linked with and dependent on one another.

At this, the depth and essentiality of this connection is usually made explicit – and thus becomes clearly visible - when mountain agriculturists talk about their experiences with soil fertility and quality against the background of the application of agrochemicals. According to the surveyed farmers' own accounts, the effects of the application of agrochemicals massively undermined their general long-term efforts to stabilize soil health and therefore, through the close interconnectedness between themselves and their agricultural lands, also posed serious threats to the local population's health. It has also been explained that, while farmers clearly identify a direct link between the various elements of their immediate surrounding, they are not always consciously referring to this fundamental interconnectedness. Rather is it the case that many times, they do so quite unknowingly - a fact which is reflected in the way people refer to their soil and livestock: Through assigning human characteristics and pathogenesis to both their land and their animals, they reveal an almost intimate relationship to both entities without, however, putting the latter in explicit terms.

It has now become clear that the multi-component farming system is not merely an abstract construct, based on theoretical reflections, but much rather does it represent a fundamental and deeply-rooted local conception, which is largely congruent with individual farmers' understanding of the basis of human (well-)being. Although some of them are still falling back on chemical inputs for crop protection and plant health, strengthening the linkages between various components of the farming system is widely perceived as a task of vital importance and commonly understood to be an obvious responsibility. Since it is the farming household who represents the nodal point, it plays a key role in the overall management of the system which, above all, is the monitoring of the balance of the latter through looking after the well-being of its individual components. This fundamental interrelatedness between people, soil, animals and surrounding landscape constitutes an essential

constant, which is somewhat omnipresent in both what farmers say and what they do and becomes most obvious in what I have called strategies of comprehensive health management. This term was chosen to first of all point at the close interconnection between various local elements from a more emic perspective, that is from local farmers' point of view. Through this it became apparent that the previously described multi-component farming system is not just a theoretical model; rather, it is indeed vital to the local population's sociocultural self-image and farming way of life and becomes visible and various aspects of local life and numerous everyday activities – both consciously and unconsciously. Also, it is now obvious that there exist genuine and substantial links between the principles contained in Navdanya's approach of organic agriculture and the reality of everyday life and cultural repertoire of local marginal farmers in the area in question. Indeed, the latter's strategies of comprehensive health management and Navdanya's particular agenda of maintaining ecological stability and local food security through the promotion of context-sensitive and sustainable agricultural practices are corresponding in important aspects. While the organization attaches great importance to the transfer of information and practical know-how concerning the conservation-minded management of locally available resources, the latter aspect also is somewhat omnipresent in local farmers' self-understanding of their agricultural activities, since these are fundamentally directed towards the stabilization of local livelihoods. They carefully manage nutrient flows between their agricultural system's different components through using on-farm inputs such as gober and gomutra, locally available additional biomass in the form of grass and leaves and they also invest significant amounts of time and human resources. For both parties, therefore, soil health and fertility are crucial factors for long-term agricultural success, local food security and individual health and well-being. Even though many local agriculturists still make use of chemical inputs, virtually all of them are of the opinion that this practice has harmful effects to both their soils and their own body's well-being. At the same time, the avoidance of the application of agrochemicals is central to Navdanya's agenda and plays a vital role in its long-term strategy of preventing major crisis where this connection between soil, food and the bodies of farmers and consumers is also made explicit. It might be stated, therefore, that Navdanya's main principles are largely in agreement with local farmers' conception of agricultural production and its importance for maintaining their community's livelihoods, health and long-term productivity. Also, the organization's basic measures concerning the effective implementation of organic agriculture – the stabilization of soils through the conservation-minded management of locally available resources and the substitution of external agroinputs by on-farm inputs - can surely be considered context-sensitive since they are largely in line with local farmers own concepts of agricultural production. Moreover, the promotion of the use of local seedmaterial, too, complies with local farmers'

management responsibilities which include the efficient exploitation of various biological niches in order to take optimal advantage of their highly complex and fragile environmental conditions. Thus, it can be predicated that Navdanya's agenda is based on the attempt to somewhat broadly strengthen, support and 'revitalize' the locally existing concept of comprehensive health management – a system which has lost much of its relevance and potential through the widespread use of chemical agroinputs and the following after commercially oriented patterns of agricultural production. Nevertheless, it is still widely practised and local farmers still perceive it to be the most adequate approach to effective and responsible farming. It is at this point where local farmers own conceptions and understandings show substantial similarities with Navdanya's basic approach of an environmentally sustainable and socioculturally accountable way of agricultural production – a fact which constitutes the most important prerequisite for the frequently mentioned empowerment from below. Apart from this, however, Navdanya also claims to follow an approach which is moreover fundamentally actor-oriented, being grounded on individual motivation, capability and knowledge. The organization claims to promote self-determination and self-organization where local farmers and farming households can to a great extent draw on their own cultural repertoire, personal activity and individual creativity. Against this background, much is spoken of individual farmer's 'agency' - often to a extent which gives the impression that the latter existed somewhat independent of other influential factors. However, strategies of comprehensive health management must be seen to be grounded both on farmers' own reflexive agency - which is expressed through the conscious and active management of the multiple components of the local farming system - as well as on a commonly shared basis which confers on it the character of a generally mandatory convention. In this connection it was shown above how strategies of comprehensive health management are not only very deeply rooted in individual farmer's and farming household's self-conception, but are also part of the whole local farming community's identity. At this, while the choice of the term 'management' is meant to indicate a fundamentally important dimension of personal activity, the term 'strategies' points to the fact that this mindset is not a feature that belongs exclusively into the sphere of individual organic farmers, but that it must rather be considered as a deeply-rooted conception of the local sociocultural field. In fact, farmers' management activities are largely based on common underlying strategies and principles and it can be said that both are two different sides of the same coin, complementary and mutually supportive. Following these considerations, organic agricultural practices must be viewed as being promoted and implemented within a local context in which not only individual farmers are showing high levels of personal awareness and activity on this issue, but where there also exists a commonly shared notion concerning the need to attenuate ecological fragility and to consolidate the fundamental interconnectedness between various local

elements.

It is therefore suggested that the individual farmer's agency, together with the various common strategies and patterns of action that exist on the community level, form a basis that is constantly shaped and reshaped and which – ultimately – aims at the overall stabilization of the whole system. However, before getting into a more detailed reflection on the two spheres, thus coming up with a more differentiated picture of individual farmers' positions and impacts within their social environment, it is important to at least briefly examine the concept of 'agency' and to reflect on the term's relevance since it will be of particular significance in the further course of this study.

## **6. Access to the Field III**

### **6.1 Agency and the Individual Farmer**

'(...) nothing ever makes sense without at least an imaginable context. The only choice one possesses about the context is which context to highlight'.

(Agrawal, A. 1995: 20)

To begin with it must be said that in the context of the here presented analysis, agency is not seen as an exclusively human quality since individual human beings are not understood to be ontological entities per se; rather, they are seen as being fundamentally subjected to historical processes of sociocultural construction – a fact which also accounts for other, non-human entities. Moreover, the here investigated local scenario is of such high complexity and energetic interrelatedness that the limitations of human agency quickly become apparent. However, this argument is not just based on the relatively restricted sphere where individual farmer's agency can become operative and efficient, but rather points to the fact that - even though local farmers are quite aware of the fragile, dynamic and interrelated nature of their surrounding environment and are actively thinking, planning and working in order to comprehensively consolidate the latter through attentively strengthening its individual elements - the present scenario is best viewed as a complex web of relationships where each element's structure, its function, its identity is defined through its interaction with other elements assembled around it and thus is shaped by the various influences of specific localized factors. Thus, particularly with regard to the special characteristics of the multi-component farming system, the term 'agency' should not be attributed to human actors alone. Rather, both human and non-human elements should be equally considered to be invested with – more or less – active potential and the capacity to substantially effect each other and to cause

changes in the external world. In other words, both human and non-human entities can in principle be ascribed with 'agency', irrespective of whether they are self-conscious individual beings or material objects such as technical artefacts, money, geological formations or an agricultural product. From this perspective, did the latter not also have considerable influence on the farmers and their families whose efforts and expertise - in combination with particular climatic conditions and influences - over generations have shaped its very nature? Did it not have a bearing on their dietary habits and approaches to health issues through sustaining their bodies; their relations with other individuals and communities through trade, sale and exchange of genetic material; their creativity through innovative breeding? Is it thus not rather a somewhat active entity within a wider relational and complex, yet particular setting? And is the same not true for the other above-mentioned factors? Are they not also part of this complex web of mutual influences in which every single element's relation to others is essentially constitutive to the whole? However, I perceive the factor of consciousness and the ability of self-reflection to be of great importance in and of itself and this major difference is reflected in a categorical actor-actant differentiation. Therefore, along these lines, there does indeed exist a difference between conscious flesh and blood actors and non-human actants. However, it is not the case that the latter, as a fundamental rule, have to be in some way 'mobilized' by human actors<sup>270</sup>. So, rather than drawing on classical dichotomous patterns of the topology of the social through contraposing animated human 'agents' with inanimate non-human 'patients', the here proposed perspective attempts to point towards the amalgamation of the two entities' respective contributions to social dynamics. Hereby, abstract tensions between them are dissolved and replaced through a more comprehensive and flexible approach of distributed action, where the focus is placed on the dynamic and closely interwoven relationships that are generated, developed and maintained between the involved actors and actants. In light of what has been explained above, it seems quite an adequate approach to think of the here investigated local scenario as being fundamentally consistent of a close network of various spatially and chronologically closely interwoven actors and actants who are all invested with the potential to exercise agency. At this, attributing agency to all kinds of interconnected entities, be they human or non-human, moves the focus from static pinpointing to the complexity and fundamental interconnectedness of ecological and social dynamics. This pointing at the constitutive relationality of human actors and non-human actants in a particular spatially and temporally localized socioecological setting is not meant to exhaust the issue – much rather is it perceived to be an adequate perspective on the given scenario which can serve as an initial analytical tool. The latter in turn is useful for understanding the essential interrelatedness of local sociocultural and environmental conditions that are central to

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270 See also: Callon, M. 1991



locally evolved and embedded strategies and forms of knowledge, individual farmers' practices and contributions as well as environmental conditions and translocal influences and developments. However, the actual content of these considerations is very limited and therefore, in order to proceed towards a more concrete understanding of organic agriculture in the here investigated local context, it is necessary to fill the analytical basket with specific and relevant material. This being an ethnographic study, the central focus of course lies on the particular capability of local individual farmers which is not only an adequate category for examination, but moreover is indeed quite central and of crucial importance to the promotion, dissemination, implementation and further development of organic agriculture in the area in question. Resulting from the insights yielded in the previous chapter, it is obvious that the *active and conscious monitoring* of the balanced well-being of the local system's multiple components - livestock, support lands and, most notably, agricultural soil and subsequently crops and food – clearly is at the centre of local farming households' efforts. The farmers of Saur village perceive themselves as being part of a fundamentally interrelated system in which they may not be the only active and influential entities, but in which they act as custodians. They are quite aware of their pivotal role in establishing ongoing, long-term stability of the whole system, thus showing high levels of personal awareness about the importance of this comprehensive health management. It is the sustainable consolidation of the common basis of subsistence that constitutes the central task of every farming household and thus, maintaining a certain level of well-being between all the components involved becomes an explicitly spoken imperative.

This is even true for farmers who have not yet adopted organic methods of agricultural production but are still using external chemical inputs – which I also learn from V.S.: During the previously described first encounter, he very affectionately invites me to again visit him and his wife in their somewhat secluded home in Posla and this time, I must certainly have dinner with them and spend the night up here since there sure is a lot we must talk about. I am very glad to have received such a nice offer because firstly I am eager for more detailed information and second because I like the sympathy and warmth with which I am immediately met with by the couple. And thus, having quickly and gladly accepted the offer, already two days later, I again make my way up to Posla, this time meeting them with much more free time on their hands. Again I am served tea, sitting in front of their small house, V.S. and I enjoy the last of day's sunlight fading away quickly and beautifully while the sun sinks behind the distant snow-capped mountains, glazing them in a brilliant red light. Once it has sunk, darkness falls quickly and so does the cold. V.S. invites me inside the kitchen where his wife is already busy kneading the dough for the rotis she is going to prepare shortly

before the dishes will be ready. As in most households in the area, the kitchen is a narrow and basically empty room which is dominated by a rather large oven. In fact, it is more like a combination between oven and fireplace, an earthen construction made of bricks and smeared with clay. V.S.'s 'stove' is also insofar typical as it has no smoke ventilation whatsoever. The thick smoke of the wood that is being burned therefore quickly spreads in the entire kitchen, filling every corner of the room. Usually, in order to make the biting smoke more bearable, a little hatch in the roof is opened or the door left ajar which, however, brings only little relief. As in most other households, in V.S.'s kitchen, too, the wooden ceiling beams are covered with a thick and glossy layer of soot. On the soot-blackened wall next to the fireplace hang a few dented and equally black pots and frying pans while on a little shelf, which is set into the opposite wall, there is kept a conglomeration of old and dirty plastic jars, filled with different herbs, spices and masālās. Covering her nose with her śalwār, every now and then wiping her watering eyes with the sleeve of her dress, V.S.'s wife quickly and precisely makes use of this extremely simple equipment. At regular intervals, she turns to me and, pointing at her own reddened eyes, smiles sadly and apologizes for the smoke. By now, outside, rather strong wind has come up, making it impossible to keep the door open the whole time and so there is no choice but to endure the biting smoke. Even though the fire has been kept burning all the time, the cold now starts creeping through the cracks in thin wooden walls of the house and it gets noticeably cooler. Thus we all move closer to the fireplace. V.S. puts on more water for hot tea and then excuses himself for a short while in order to milk the two cows which he keeps in the tiny shed next to the adjacent bedroom. While his wife is busy dealing with her cooking utensils, I insist in playing my part in the dinner preparations and am thus allotted to the task of chopping green chili peppers and enormous quantities of onions. In almost no time, V.S. returns with a jug of fresh milk, prepares our tea and starts telling me about his livestock and agricultural production. Over the course of the conversation, my initial suspicion is confirmed: V.S. does not know much about the chemicals that he uses. The reason he does it nevertheless lies in the fact that he knows even less about other options. For him, using external inputs in agricultural production simply is the only way he's familiar with. Even though, according to his own account, he has to spend a quite substantial sum on these inputs which also makes him holding on to his 'commercial' orientation. He frequently reiterates that he has 'no information' on any other alternative and therefore adheres to the 'medicine from the market'. However, he is aware that there exists another, organic option and that growing numbers of farmers in the villages below have stopped applying chemically-based external inputs. Especially M.D., he narrates, the mother of the household I am presently accommodated in, so far has several times urged him to do without chemical inputs. Her family owns some pieces of land right next to his own fields at Posla where

they produce organic potatoes – which gives him reason to believe that actually, she is afraid of the cleanliness of her own crops. But all the same, he says, he has ‘no information’ about how to manage without using chemical additives. While his wife serves an unbelievably good meal consisting of yellow rice, Rājma, Lingdā-sabjī<sup>271</sup>, yoghurt, apricot-mint chutney and roṭīs, V.S., with his mouth full, tells me that he had nevertheless long since considered to ask M.D. for further assistance on this matter. She had not only expertise, he says, but also seed material and she would be willing to practically teach and assist him in questions of how to prepare organic fertilizer and pesticides. Moreover, she apparently has the necessary contacts to sell and transport the produce – at least this is what he has heard. But still, V.S. has his doubts in the effectiveness of organic methods, narrating that not long ago he has already experimented himself with an organic tonic based on a mixture of cow-urine and water on his young apple trees which, unfortunately, proved too weak for effective pest control. However, he expresses the desire to save the money and energy he normally invests in the purchase of agrochemical inputs. While V.S. and I are thus having a very lively conversation, his wife, who is quite busy dealing with the preparations of the food, most of the time merely listens and every now and then adds a comment. When I enquire about the quality of their produce, she suddenly comes alive and argues that, apparently, crops that are raised without chemical additives were not only healthier and tastier but also had better storage properties.

It is already quite late in the night when, after much food, tea and conversation, we finally decide to go to sleep. Interestingly, V.S. insists that he keeps watch while I take my nocturnal ‘biobreak’ behind a few shrubs, a few steps distant from the house. Ruffling the ‘new’ dog’s thick and felted hair, he escorts me outside where the cold wind chills me to the bone. While usually, the night sky is almost always starlit and clear, that night, I am hardly able to make out my own hand in front of my face. There is no moon and although there seem to be no clouds either, only few stars are visible in the otherwise inky black sky. As I move away from the doorstep, slowly and carefully feeling my way along the wall of the house and towards the open air toilet, V.S. starts talking rather loudly: ‘That leopard has taken away the other dog from right here’ I hear him say. ‘From exactly where I stand right now, in front of the door. We heard it howl when the leopard took it away. What a pity – it was a good dog. Quite good, quite strong. This one is still young. It would not stand even the slightest chance against the leopard. Tomorrow morning you must stay for lunch!’

This brief story illustrates how individual farmers very commonly exercise their reflexive agency, thus making clear that the latter is indeed a central and crucial parameter, not only in regard of such complex facts as strategies of comprehensive health management – which are however reflected in

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271 Vegetable dish prepared from fern shoots

almost banal everyday activities - but also in view of many other operations. It is true that especially mountain farmers are far from being completely free in their decisions; they on the contrary are subjected to an extraordinary multitude of limitations and constraints, from severe environmental limitations, spatial remoteness and ecological vulnerability through to economic risk, lack of alternative employment and governmental neglect. Even their soils, they say, through the use of chemical additives, are exposed to the threat of becoming 'addicted' which, in this highly marginal scenario, gives them a feeling of somehow standing with their backs to the wall. Viewed in this light, applying chemically-based additives is not only a strategy farmers use in order to increase crop performance, but also – as the above illustrated incident illustrates – a symptom of deficiencies in alternatives. Nevertheless, even though commercial agricultural production might not exactly be named a 'conscious' decision, it still contains a great deal of awareness and deliberate actions. Not only do small and marginal farmers possess the capability of drafting fairly precisely the anticipated expectations and effective opportunities as well as the feared consequences and actual impacts of their respective practices, but also do many of them show quite high levels of well-considered, calculated and reflexive activity. V.S. does not stand alone here. He is not exceptional in his way of carefully considering latest developments that, naturally, do not stop at the foot of the mountain he lives on. On the contrary, while he has consciously opted to invest in the cost-intensive and time-consuming development of a fairly large apple orchard<sup>272</sup>, at the same time he distinctly points out the reasons for his choice of chemical pest control. Also, V.S. is not a particularly wealthy or educated person. He doesn't hold any somehow outstanding or exceptional social position, either. In all these spheres he is an average person, an average mountain farmer in fact who has his personal limitations as well as individual strengths. Nevertheless, his considerations and decisions show a high degree of individual reflexive action: They are based on first-hand experiences as well as information gathered from various kinds of social communication which are then carefully and reasonably weighed against each other. Moreover, this active acquisition of relevant data doesn't stop at a merely theoretical level but, through autonomously conducting selective and observational experiments, is subsequently pushed into the realm of practical empirical knowledge. While his information base might be insufficient to give precise and detailed theoretical explanations for the potency or inefficiency of chemical inputs or organic pesticides respectively, he is very well aware of the actual benefits and potentials to be expected from each method.

All of this goes to illustrate how farmer's individual agency is indeed crucial in the process of local agricultural activities and that therefore the '... widespread and paternalistic belief in the (...) assumption that villagers are incapable of inventing, developing and adapting new technologies,

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272 See Methodological Appendix II/ Picture 16

thereby carrying on the agricultural development process by themselves<sup>273</sup> is indeed not only highly problematic but simply wrong. As will be investigated in more detail at a later stage, even in highly marginal scenarios they think about and practically induce change, improvement and innovation<sup>274</sup>. Also, they often extensively monitor both the expected results and unexpected effects of their activities and they exchange experiences and information, give advice and take decisions. Farmers do play a vital role and are greatly significant and energetic agents. Within their given horizon of experiences, they exercise reflexive agency and active decision-making. Just like V.S., they are confronted with and affected by changes that are many times brought to them from outside. However, they are far from remaining passive in the face of these changes but rather play a very active role in the process of their adoption, transformation, dissemination, reconfiguration or rejection. And, of course, this applies especially to farmers who have opted for an organic approach. However, apart from pointing clearly at individual farmer's high degree of individual agency, reflexivity and decision-making potential, the above-outlined situation indicates yet another aspect which – although it is a simple truth - holds great importance for the investigation of the local scenario and at the same time links back to strategies of comprehensive health management: Namely that in the here investigated local context every individual farming household, even if it resides a long way from the next village – say, for example, on an alpine pasture – is part of a closely interwoven social fabric. This realization also implies that processes of active individual decision-making are by no means as unambiguous and unilinear as the brief introducing observations stated above at first glance might suggest; it rather seems the case that both socio-culturally shaped strategies and individually constituted personal practice are not only quite inseparably interrelated, but are also mutually constituting each other. Simply put, not only does the social space also play a central role when it comes to the formation and passing on of generally underlying, commonplace patterns of 'proper' social behaviour and commonly expected communal responsibilities, but moreover is it local public networks within which new and innovative ideas and concepts are circulated and conveyed to the individual farmer. The latter then, over the course of time and according to his personal interests and dispositions, gathers more and detailed knowledge. Ultimately, through collecting information from various sources and putting those to the test practically, it is the farmer who decides what he is going to adopt for himself and which information, techniques, methods or newly emerging social contacts are beneficial for his own particular situation.

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273 Bunch, R. 1989: 56

274 According to Richard's conception of 'agriculture as performance' it might even be the case that this happens exactly *because* of an increased level of marginality and hence of greater innovative pressure.

See: Richards, P. 1989.

## **6.2 The Individual and the Social Sphere: An Attempt of Meaningful Interweaving**

With this in mind, not only are strategies of comprehensive health management characterized by a fundamentally important dimension of individual awareness and agency and are deeply rooted in the individual farmer's and farming household's self-conception, but at the same time they also form a constitutive part of the whole local farming community's identity and are important elements of the local population's sociocultural self-image. It was shown how this makes strategies of comprehensive health management excellent indicators for the locally dominant sociocultural conditions and premises, thus providing essential information as against what background, on what premises and through which influences ideas, information and innovations enter, permeate and become established in the context in question. Moreover, it became evident that individual farmer's reflexive agency and active decision-making are crucial elements in view of this issue.

Subsequently, in order to thoroughly explore the main driving forces that exert particular influence on the local need and disposition to adopt and implement organic agriculture, one unavoidably comes across the problem of how to make visible the spheres of influence of both the individual and the social respectively. Especially when considered from a fundamentally actor-oriented perspective, there arises the question of just how much individual agency can and should be attributed to the individual farmer. Although some indicators point at a generally high level of personal awareness and potential activity of individual farmers, one should not get the impression that this activity existed somewhat independent of the social sphere. While it is quite clear that farmers indeed do have and also make use of their personal potential, the determining of exactly how much 'agency' can and should be attributed to community's individual members is a rather delicate issue – especially when they are part of a collective that shares a living space as complex and closely intertwined as the mountain villagers of Saur. Particularly against this scenario, it is an almost impossible and, moreover, also highly questionable and possibly fruitless venture to try and draw a clear line between the two. Nevertheless, precisely because of the fundamentally important interconnection between all the system's elements, it is essential to at least briefly reflect some fundamental aspects of the mutual interweaving and interaction between the two spheres.

This step is expected to not only be of help in terms of assessing and further investigating individual actors' potential and their relevance with regard to changes and developments in the local society as a whole, but should also contribute to the answering of central questions concerning the different channels through which concepts and ideas on organic agriculture find their way into the local community, on what grounds and influences they are propagated, circulated and adopted. Both aspects are central to the issue of finding out whether organic agriculture really has the potential of putting local people at the centre of development, thus providing marginal rural farming

communities with an alternative basis of ecologically sensitive and socially accountable bottom-up development. In this context, it will also be important in view of following the generation and dissemination of organic knowledge and techniques as well as the further development of innovations, improvements or optimizations in this regard.

Disputes on the fundamental question whether it is structuralist or rather existentialist positions that determine individual actions have been going on for decades and opinions still widely diverge when it comes to this issue. On the one hand, scholars maintained that individual actors were essentially determined and guided by their respective community's principles, norms and regulations - and thus fundamentally restricted since they were only units of a larger society. As a result of this, they were incapable of seeing 'the whole picture' and, in order to figure the latter out, for this had to rely on outsiders' insights. On the other hand, more existentialist-oriented academics claimed that it rather was the case that individual actors themselves were crucially involved in the construction of their social environment. From their point of view, conscious individual actors determined and defined what society was – its whole, its parts and what it is made of. Thus, from an analytical point of view, the overall question is whether it is the individual actor who - as the most essential structural unit - shapes society, or whether it is rather the other way round with society being somewhat overly powerful.

In the context of the case study selected for this analysis, however, it very quickly becomes apparent that the question raised above is not only inadequate but, through fundamentally relating to the analysis of largely static aspects of societal *structure*, actually clearly fail to get to the root of the issue. Rather, it was shown above how both local communities as well as individual farmers are essentially interwoven – not only with each other but also with their immediate surrounding area. In this respect, it was also suggested that agency should by no means be understood to be restricted to self-conscious entities alone, but can and should also be ascribed to a wider circle of 'actants'. Although the following section of this study is intended to investigate in more detail the connection between the individual farmer and his local community, the above-stated thoughts on distributed action, where various key entities – both actors and actants - in a complex and closely interwoven local scenario perform fluid yet context-sensitive configurations, points at an important analytical factor from which arises the question as to why, instead of arguing about structure should we not rather concentrate on *dynamics*? Here, we find ourselves at a crossroads which has kept sociologists busy for quite some time now. Emirbayer comments in this respect: 'Sociologists today are faced with a fundamental dilemma: whether to conceive of the social world as consisting primarily in

substances or in processes, in static “things” or in dynamic, unfolding relations<sup>275</sup>. While substantial sections of the sociological community still continue to give preference to the former point of view, ‘(...) increasingly, researchers are searching for viable analytic alternatives, approaches that reverse these basic assumptions and depict social reality instead in dynamic, continuous, and processual terms<sup>276</sup>. Therefore, why should we search for and examine rigid dichotomous tensions between society and the individual when it seems much more promising to rather have a look at how reciprocal dynamic flows are shaping both actors as well as their relations with other entities? If we perceive dynamic processes to be of essential importance, it follows that our focus of interest shifts in a very substantial way, moving away from the question of *what* society is and towards the perspective on *how* it is actually performed. In this light, it is some of Bourdieu’s ‘thinking tools<sup>277</sup> that provide us with numerous and rich reflections on the dynamic and interdependent relationship between the individual and society. Also for the present study, some of his insights will be of significant relevance, especially the concepts of ‘habitus’, ‘practice’ and ‘field’. His contribution to the notion of how action is constituted both within the individual’s and the society’s sphere of influence provides inspiration to overcome rigid dichotomies and, in addition, points to a more dynamic and flexible perspective on both entities.

### **6.2.1 Social Disposition and Individual Influence: The Habitus**

For Bourdieu, individual action depends on a whole series of personal and contextual conditions which, both brought together, form some kind of socially shaped strategic background within the same individually constituted personal practice is deployed. His attempts to reconcile social ‘structure’ and individual ‘agency’ brought forth the concept of the ‘habitus’ and reflects his endeavours to attribute an active and creative dimension to practice while laying particular emphasis on the generative properties of personal dispositions<sup>278</sup>. These dispositions, however, are by no means simply individual properties that fundamentally differ from person to person; rather, the term ‘expresses first the result of an organizing action (...). It also designates a way of being, a habitual state (...) and, in particular, a predisposition, tendency, propensity or inclination<sup>279</sup>. It is this ‘result of organizing action’ which, through describing how social facts in an ongoing and active process become internalized, conceptualizes the fundamental relation between ‘the outer’ and

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275 Emirbayer, M. 1997: 281

276 See above

277 ‘There is no doubt a theory in my work, or, better, a set of *thinking tools* visible through the results they yield, but it is not build as such’. Bourdieu, P. & Wacquant, L. 1989: 50

278 Bourdieu, P. 1992: 30

279 Bourdieu, P. 2002: 214



'the inner', objective social structure and subjective personal experience. Habitus is, as Bourdieu comments, 'the social embodied'<sup>280</sup>, it is internalized structure while simultaneously taking into account underlying personal propensities. Also, the habitus neither acts alone nor is it fixed but rather, its dispositions constantly become active and evolve within a contextual field, a social arena. So there exists a reflexive link between the habitus and the field, an 'unconscious relationship'<sup>281</sup> since the field, as part of the continually evolving contexts in which we exist, structures the habitus, while simultaneously the habitus is the basis for social agents' understanding of their lives, including the field<sup>282</sup>. In this light, individuals each become unique configurations of wider social forces and thus even subjectively sensed 'difference' is objectively shaped according to underpinned social regularities. In addition, understanding habitus as an embodied 'feel for the game' and fundamentally relating it to particular fields allows for the meaningful bringing together of the experience of individual agency and the existence of social regularities: While the habitus and the field in themselves are both essentially relational structures, there also exists a continuous, dynamic and correlated evolvment between them. They mutually constitute each other, thus linking not only past and present developments but also creating future potentialities which a habitus adapted to the field is able to anticipate<sup>283</sup>. Any moment in an individual's life thus becomes a result of countless events in the past that have shaped its history.

Following these considerations, local strategies of comprehensive health management are determined by a certain logic which has developed over time within the common social field of Saur village. They represent a local interventionist policy which first and foremost aims at the overall stabilization of the highly fragile, dynamic and interdependent environmental fabric. It is a durable measure of risk mitigation enhancing practical knowledge that sustains and stabilizes the local population's livelihood and is broadly accepted and yet individually executed. Thus, particular structures and dynamics have been historically produced and internalized by its population who have since been reproducing these structures, albeit permanently and slightly modifying them by means of each individual's personal agency: While, for example, some farming households take great care of their fields, soils and livestock through demanding and time-consuming management activities, others attend only to the most basic needs of these components, thus performing only the absolute minimum of the implicit rules. Whatever their individual efforts might include, though, they are based on the partly unconscious notion that a comprehensive health management is an essential precondition for maintaining a healthy balance between their agricultural system's

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280 Bourdieu, P. & Wacquant, L. 1992: 127

281 Bourdieu, P. 1993: 76

282 See: Maton, K. 2008.

283 See: Bourdieu, P. 2006

components. Seen from this perspective, the person of the farmer constitutes a central point of intersection and a manifestation of the complex and mutual influences of sociocultural and individual factors. Thus, through the notion of habitus as the 'dialectic of the internalization of externality and the externalization of internality'<sup>284</sup>, it becomes possible to link socially shaped but individually constituted personal practice.

### **6.2.2 Social Action and Individual Potentialities: The Field**

From this dynamic and dialectical interrelation emerges an understanding of structure as both structured and structuring, intending to capture both the objective facticity of social phenomena as well as their subjective foundation. According to Bourdieu, the social world is made up of multiple fields - continually evolving configurations – that have no invariably defined outlines nor fixed properties but constantly evolve according to their own logic. He often uses the analogy of a football game and the notion of 'strategy' in order to refer to what he means by 'practice'. For him, each social field can be understood as a competitive game in which social action emerges from the various agents strategic positioning and where the overall aim is the accumulation of various forms of capitals<sup>285</sup>. Moreover, the actual physical condition of the field also has to be considered and may have significant implications on what the players can do and therefore on how the game is actually played. Fields are sites of struggle, they are essentially antagonistic, not static. The games that are played have no ultimate winner, they are somewhat unending which implies the potential for change at any time. Therefore, social agents do not resemble unconscious automatic machines which, like clockworks, act according to mechanical laws<sup>286</sup> but rather, within the limits posed to them by their particular habitus and field, develop quite freely and are also able to pursue very particular, very own objectives. The here proposed relational perspective thus offers an epistemological approach to a particular, historicized understanding of social life which leaves room for individual agency and emphasizes creativity without succumbing to an overly powerful voluntarism. At the same time, the players – or agents - struggle in order to maximise their respective positions within this field, thereby strategically deploying resources according to what kind and amount of capital they possess and what is demanded within the field. However, individual action – or practice – emerges not entirely from cool, objective evaluation but rather from an unconscious calculation of profit since, through the mechanisms of the above outlined habitus, the individual agents have developed a 'feel

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284 Bourdieu, P. 2002: 72

285 Bourdieu lists four forms of capitals: Economic (that is money and anything that can be converted into money), cultural (education, forms of knowledge, taste etc.), social (relationships, networks, family) and symbolic (things that can be interconvertible in other fields)

286 Bourdieu, P. 1992: 28

for the game<sup>287</sup>. They have embodied the game and its unwritten regulations that underlie practices within the respective field and thus possess practical knowledge, a deep understanding of social practice that 'goes without saying' which Bourdieu called 'doxa'.

In the scenario under examination it was found that farmers very extensively observe and actively monitor this system, chiefly through managing nutrient-flows between its different elements. While this constitutes an unwritten responsibility, the way this management is carried out, however, varies from farmer to farmer. According to these reflections, it is the individual farmer's socioeconomic position, the availability of various forms of capital – such as money, social contacts, family ties or education – as well as his individual ability to efficiently make use of them, which shapes his individual strategies – both consciously and unconsciously. It thus becomes clear that the farmers of Saur village find themselves in a highly dynamic and closely interwoven socio-ecological fabric where their activity is part of a social 'game' in which they unconsciously follow common underlying regulations yet actively follow individual strategies. From this perspective, their agency becomes a crucial variable that is responsible for – in the truest sense of the word - 'practically cashing in' potentialities. V.S., too, uses a variety of instruments and resources at his disposal in order to augment his profit – be it in terms of money, education, social prestige or whatever other form of capital. At this, he is actively taking decisions while at the same time falling back on somewhat semiconsciously developed strategies which have been shaped and embodied in his habitus through the already existing underlying fabric of his sociocultural context.

### **6.2.3 A Perspective of Relationality: Practice and Tacit Knowledge**

Against the backdrop of these considerations, practice results from an individual's own dispositions and position in a field within the current social arena. However, unlike in a football game, social fields are not a level playing grounds but rather do some of the agents possess more particular forms of capital than others and are thus advantaged at the outset. The great achievement of these reflections is their relational mode of thought where practice is not reduced to merely one dimension of the dichotomy of either the individual or the social, but is understood as being fundamentally relational. To note that 'the concepts of habitus, capital, and field are thus internally linked to one another as each achieves its full analytical potency only in tandem with the others'<sup>288</sup> unfolds the whole complexity of these considerations: 'Rather than becoming bogged down in

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287 'Produced by the experience of the game, and therefore of the objective structures within which it is played out, the 'feel for the game' is what gives the name a subjective sense – a meaning and a *raison d'être* – but also a direction, an orientation, an impending outcome (...)'.

Bourdieu, P. 1990: 66

288 Wacquant, L. 2006: 10

aimless debates about the primacy of either social structures or human agency, Bourdieu argued for a methodology that would bring together an inter-dependent and co-constructed trio – field, capital and habitus – with none of them primary, dominant or causal. Each was integral to understanding the social world, and the three were tangled together in a Gordian knot (...). However, as Bourdieu himself has frequently pointed out, these considerations are merely thinking tools that may prove quite useful when it comes to shedding light on the basic epistemological relationship between the individual and society which, in this case study, was found out to be quite central not only in terms of local strategies of comprehensive health management, but also in regard of the question what it really means to promote an actor-centered development approach founded on organic agricultural practices. Also for the purpose of this study, the above-outlined reflections on Bourdieu's notion of the 'habitus' and the social 'field' make a significant contribution to a greater understanding of local farmers individual activities with regard to their overall formation, involvement and influence. They highlight the fact that 'practices' are under no circumstances to be understood as being reducible neither to individual dispositions or motivations nor to the respective social framework alone but rather make it clear how these are marked by deep complexity and dynamic interrelatedness. As a consequence, in order to be able to adequately investigate the latter, practices have to be analysed on a case-by-case basis and thus require a thorough understanding not only of the results and consequences of peoples' actions, but also of the whole contextual setting. In other words: In order to make individual practice accessible, the researcher also has to simultaneously unclose the respective social dimension. It is thus through the provision of context-sensitive 'background material' - based on ethnographic in-depth investigation - that individual motivations, activities and decisions become more comprehensible and easier to relate to overall social development processes. This way of proceeding has very practical implications for the anthropologist since it presupposes recognition of the fact that a rather substantial part of all those everyday activities that appear the most common, the most 'normal' to us, somehow cannot be put into words easily since they are largely attributable to Bourdieu's habitus. Thus, there exists some kind of hidden dimension to knowledge which, though allowing us to act adequately and intelligently, cannot be verbalized, written down or be made explicit in any other way. Instead, we realize that a good many everyday dealings are implicit in one's behaviour and that 'the question whether a certain kind of knowledge is describable must always refer to a particular purpose in a particular context, for which a description may or may not be adequate/ exhaustive'<sup>289</sup>. Since the complexity of the physical, ecological, social and historical context - which plays an essential part in the emergence and implementation of action itself – does not fully reveal itself to the 'entangled'

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289 Neuweg, G.H. 2004: 130

person, it must be seen as an only partly conscious structure in which individual behaviour is located. Nevertheless, of course, intelligent action and adequate behaviour is possible. In fact, most of the time, reasonable practices are carried out without permanently reflecting them, often without even consciously noticing them. This 'tacit' knowledge<sup>290</sup> does not so much stand in contrast to 'explicit' knowledge as they are rather complementary concepts. Both tacit and explicit knowledge together can complement Bourdieu's reflections in that they help establishing an understanding of practice which includes what is said and what is left unsaid, what is known and what is assumed. Knowing and acting are interlinked in concrete practice, by doing. This basically means that mostly, finding out *why* people do the things they do, one has to observe *how* people actually do them or – even better – participate in doing them since tacit knowledge is not teachable but coachable<sup>291</sup>.

The above mentioned considerations make a substantial contribution to the overall assessment of individual farmers' potentials and the relevance and implications of their particular decisions and actions. Against the overall objective of finding out whether organic agriculture actually has the potential of providing marginal rural farming communities with an alternative basis of ecologically sensitive and socially accountable bottom-up development, it appeared to be of crucial importance to consider the role and potential of individual local farmers. Like most development approaches today, also Navdanya claims to put local farmer's individual capabilities at the centre of their efforts where strategies and agendas of empowerment, mobilization and capability-building are closely related to this perspective. This approach implies to see individual farmers' as active agents of change, rather than as passive recipients of dispensed benefits<sup>292</sup>, who play a vital role in various essential activities.

However, given the particular circumstances of the here investigated local setting, it was initially suggested that the latter is best understood as a complex web of relationships that is developed and maintained through a number of closely interrelated actors and actants, all of whom are inherently invested with the fundamental ability to exercise agency. While this is a somewhat abstract perspective, it is quite suitable for pointing at the constitutive and dynamic relationality within this particular, closely interrelated socioecological setting. However, not all active entities within this localized network are also of local origin; rather, it is the involvement of third parties which has

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290 It was the Hungarian-English chemist and philosopher Michael Polanyi who first articulated the concept of 'tacit knowing' in his 1958 book 'Personal knowledge'.

291 To the anthropologist, therefore, it is not unusual that investigating some specific topic poses less problems than try and understand the most 'normal' of activities since, while the latter usually exist in a tacit sphere of knowledge, the former can often be talked about explicitly – that is, if one understands the local language. But even if the local language is understood to an extent that covers not just a basic conversational level but also catches nuances of humour, lies, sarcasm or threat, 'explicit' issues many times are understood, interpreted or put into practice according to quite specific 'tacit' systems of local meaning and significance.

292 Sen, A. K. 2000: xiii

long since shaped the basic objectives and concepts of local agricultural production. While initially, even in the remote areas of Uttarākhāṇḍ the paradigm of agricultural growth in connection with green revolution methods and inputs was propagated and supported by official bodies, in recent years this development has seen some changes. Today organic agriculture has many times come to replace the promotion of commercial farming and apart from governmental institutions, various NGOs make their respective influences felt. In the case of Navdanya, they even assume the leading role and exert considerable influence on the overall shape of organic agriculture, leaving an imprint on whole villages and areas – as in the case of Saur village.

This chapter, through providing both inspiring theoretical reflections on the relationship between the individual and the social space as well as presenting ethnographic insights, has made it clear that individual farmer`s agency is indeed a central and crucial parameter. Farmers indeed play a vital role and are greatly significant and energetic agents in that - within their given horizon of experiences - they commonly exercise reflexive agency and active decision-making. Moreover, the analysed material suggest that local farmers not only actively attempt to acquire relevant knowledge and information, but that they also autonomously conducting selective experiments. Therefore, the question as to what extent local farmers themselves are in general in a position to exercise agency and to actively participate in a more actor-oriented development approach, must be regarded quite optimistically. However, these insights must strictly be considered in relation to the fact that individual farmers do not take decisions in a social vacuum but, on the contrary, are they heavily influenced by local norms and regulations. Thus, local communities, through their commonly understood and accepted knowledge contribute to specific forms of agricultural practice. Particular strategies of comprehensive health management are a particularly suitable example to highlight the significance of this fact. Here, it is the community`s overall goal to sustainably stabilize the various interconnected linkages of its environmental surrounding through assigning farmers with the fundamentally important task of managing local resource flows. Therefore, using a number of selected thinking tools, it was suggested that socio-culturally shaped strategies and individually constituted personal practice are not only quite inseparably interrelated, but are also mutually constituting each other. In fact, the individual farmer seems to be invested with some sort of `hinge function` where socially accepted strategies of comprehensive health management are reflected within his individual activities. This perspective allows for the meaningful visualization of the unfolding and processual dynamics between the individual and the social sphere where both aspects are mutually interwoven, constituting a rather complex network of social and individual objectives, influences and effects. At the same time, this averts reductionist, stereotypical classifications between the two, and it is this understanding of social practice which the following investigations of

individual actions are based on. Therefore, the considerations of the various aspects of personal agency introduced above are expected to not only be of help in terms of assessing and further investigating individual actors' potential and their relevance with regard to changes and developments in the local society as a whole, but should also contribute to the answering of central questions concerning the different channels through which concepts and ideas on organic agriculture find their way into the local community, on what grounds and influences they are propagated, circulated and adopted. Hence in the following, concluding sections of this study, central focus will be placed on local farmers' personal activities and in this context, it will also be important to following the generation and dissemination of organic knowledge and techniques as well as the further development of innovations, improvements or optimizations in this regard.

## **7. Following Organic Agriculture**

### **7.1 Individual Farmer's Capability I**

'The self is not a passive entity, determined by external influences; (...) no matter how local their specific contexts of action, individuals contribute to and directly promote social influences that are global in their consequences and implications.'

(Giddens, A. 1991: 2)

Individual farmers' single most important activity – or rather is it a set of activities – is the successful management of their respective agricultural land. Here, while appropriate financial profits and good harvests are of course very important, the term 'successful' can comprise a wide range of other influential factors. The most prominent of these is the sustainable stabilization of local resources – and eventually the responsible monitoring of the family health - through a number of common activities which, however, show substantial fluctuations in their individual realization.

While it was shown in chapter 5.3.3 that the organic agricultural practices and information which are promoted by Navdanya are largely in compliance with local strategies of comprehensive health management, it has now become clear that individual farmers' particular decisions and actions must also be considered as key elements in the the promotion, dissemination and adoption of organic agriculture. Although the realization that individual farmers must be at the centre of rural development efforts is not new and virtually all recent approaches on this issue feature 'farmer first'<sup>293</sup> agendas and 'bottom-up' schemes of participatory development, until now it has repeatedly

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293 The roots of the term 'Farmer First' lie in July 1987 when, at the Institute of Development Studies at the University

been mentioned that at the same time, there is a massive lack of the practical implementation of these insights. And while it is often maintained that local farmers and farming households are at the centre of development efforts, the truth is that these assertions are hardly pursued in reality. This is not really surprising given the fact that putting local people's interests, objectives and needs at the centre of rural development necessarily implies exhaustive research on the respective locality – which is not only a time-consuming but also a cost-intensive venture.

From the foregoing investigations follows the essential realization that it is not at all unusual for even marginal individual farmers to show high degrees of activity, practical knowledge and questioning reflexivity. Especially the latter aspect becomes quite clear when farmers report on their experiences concerning the long-term usage of chemical-based fertilizer complexes: As can clearly be seen from the previous chapters, mountain agriculturists usually have been influenced by their largely negative experiences with commercial agricultural practices. In the mountains of Uttarkāśī, where heavily increased ecological fragility and high degrees of inaccessibility characterize agricultural production, human health is still closely interrelated with local ecological factors. Local people are quite conscious of this strong and essential connections that directly link up their own and their families' well-being to livestock, soil and environmental health at large, and many farmers of Saur village are characterized by their rather strong sensitivity towards negative ecological impacts. Since virtually all of them have made practical experiences with methods of commercial cultivation, to the great majority of farmers it is clear that the latter poses not only serious immediate threats but at the same time also holds considerable danger for the future cultivation prospects and community health. Farmers are aware of this particularly challenging situation and, as a consequence were found to be invested with high degrees of activity: They naturally collect information, talk to other farmers, establish new contacts and often even conduct their own experiments before consciously opting for major changes in their mode of cultivation. Therefore, as a matter of fact, individual farmer's actions also play a major role in the local adoption and diffusion of organic agricultural practices – as the section below is going to demonstrate. While it is organizations like Navdanya and increasingly also official bodies such as the UOCB who come to rural communities with their particular approaches of organic farming and who also provide active assistance and support to farmers who are willing to take steps in the direction of conversion, initially it is often individual farmers' search for innovation and optimization that many times makes them come across organic farming. They not only inform themselves of alternative

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of Sussex, UK, there was conducted a workshop on 'Farmers and Agricultural Research'. This event became a key moment in the development of approaches to include the active participation of local farmers in agricultural research and extension, and later became known as the 'Farmer First Workshop'. Since then, considerable numbers of experiments based on farmer-centered approaches have unfolded around the world.

See also: Chambers, R.; Pacey, A. & Thrupp, L.A. 1989



agricultural options but also will it be shown how it also largely depends on the individual farmer's own situation, motivation and creativity whether he obstructs or accepts any new agricultural approaches and to what extent these are then implemented. In order to emphasize this statement and to provide more information on the subject of organic conversion, the following information is intended to elucidate the process of the adoption of organic agriculture through local farmers, followed by examinations concerning the diffusion of these practices against the context of Saur village.

## **7.2 The Adoption of Organic Agriculture: Theoretical Impulses**

When talking to farmers in the here investigated context, it doesn't take long to notice that every conversion to organic farming in Saur village is a quite particular case. There has never been a collective agreement on the issue; farmers have taken to organic farming at quite different points in time out of various economic situations and phases of life. While some have been very excited about the idea since quite some time ago, others still can't make up their minds on the matter, and yet others change their minds at regular intervals. This is also reflected in terms of practical work: While there are some households who seem to be quite dedicated and motivated to the issue, there are others who are merely paying lip service to the organic concept and still others seem to show no interest in it at all.

In order to come closer to farmers' perspectives on the adoption of innovations and to the question of why the farmers of Saur village do not adopt organic agricultural methods at the same time and with equal determination, there exist a number of different theoretical models concerning the prediction of the adoption and diffusion of new, innovative ideas and technologies, especially in the field of agriculture and rural communities. Actually, it is an extensively studied field and over the last few decades, a number of rural sociologists and agricultural economists have investigated the range of factors that influence farmers' decision of adoption of agricultural innovations. Coming from the study of technological change in the early and mid-1960s, a number of scholars<sup>294</sup> pioneered in coming up with models that interpreted diffusion as aggregate adoption, resulting from the spread of information. In these early 'epidemic' models the diffusion of innovation was usually seen as a disequilibrium process wherein contact with and imitation of others leads to the spread of innovative technologies: New opportunities for improvements are not realized immediately and uniformly because markets – especially markets for new technologies and innovation – are

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294 See, for example: Bass, F.M. 1969  
See also: Griliches, Z. 1957

generally characterized by imperfect or asymmetric distribution of information. While competition between companies is often marked by a lack of transparency, the decisive factor in the adoption of agricultural innovation by farmers is 'not so much a lack of information on the existence of the innovation but rather uncertainty about the operating conditions, risks and performance characteristics of the new technology'<sup>295</sup>. It is thus the gathering and accumulating of information that reduces farmers' uncertainty about the innovation. In the process of innovation implementation more information is generated and gradually spreads among the potential adopters and, finally, the number of adopters increases according to an s-shaped curve<sup>296</sup>. One of the earliest and most popular approaches towards this subject was developed in the United States by E. Rogers, then professor of rural sociology, in the early 1960s. For a long time, his model was the main theoretical approach for the development of agricultural advisory services and extension<sup>297</sup>. However, it still holds significance today and is frequently referred to when it comes to describing the diffusion of an innovation into a community or cultural sociocultural background. Synthesizing the work of previous studies, Rogers developed a sophisticated framework on the diffusion of innovations where the process of adoption over time is typically illustrated as a so-called 'bell curve' and the adoption of an innovation takes place through a constellation of differentiated ideal type actors: Innovators, followed by early adopters, early majority, late majority and finally by laggards. Also, he stated, the diffusion of innovation was a process communicated through certain channels among the members of a social system and it is thus important to note that the insertion of innovative knowledge, methods and technologies into communities is a multilayered process of great complexity. Also, it is a dynamic process over time at what 'time' relates to the rate at which the innovation is diffused or the relative speed with which it is adopted by members of the social system. Yet at the same time, there are doubts whether Rogers's approach – developed in the heyday of the productivity paradigm for agricultural production and the green revolution period – is suited for the wide range of new objectives that are linked with organic farming.

However, as far as the present analysis is concerned, the more important point here is to investigate to what extent organic agriculture might count as 'innovation' and to identify the base frame of its innovative character. In this regard, a very general but nevertheless quite accurate and useful perspective on the term 'innovation' is provided by Mahajan and Peterson who state that 'an

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295 Diederer, P.; van Meijl, H.; Wolters, A. & Bijak, K. 2003: 32

296 The diffusion paradigm and its typically s-shape curve of cumulated adopters of the respective innovation had already been identified in the 1940s by Ryan and Gross, two rural sociologists, as result of an early survey carried out on the diffusion of hybrid seed corn in Iowa. At this, the increasing number of adopters is in essence the diffusion process.

See: Ryan, B. & Gross, N.C. 1943

297 For a detailed introduction of these terms see:  
World Bank. 2010: 1-2

innovation is any idea, object, or practice that is perceived as new by the members of a social system<sup>298</sup>. A more differentiated approach is again provided by Rogers who differentiated between the 'hardware' and 'software' aspects of an innovation, including the availability of necessary technology in the former while the latter basically referred to information regarding the use of this technology as well as evaluative information about its performance<sup>299</sup>. With relation to this classification, since 'organic farming is primarily knowledge intensive'<sup>300</sup>, requiring above all information on certain management skills – for example methods of composting organic materials, how to achieve pest and disease regulation, the planning of crop rotation cycles and so on – it is a primarily 'software'- based innovation. In this light it differs from more technology-based innovations which the model was actually developed for. Yet even Rogers himself considered the accessibility of information to be an important prerequisite for the wider adoption and diffusion of all kinds of innovations and hence Padel quite rightly remarks that 'if availability of information is regarded as important in the diffusion of technological innovations, it is likely to be even more important for a knowledge-based (...) innovation'<sup>301</sup>. While the epidemic diffusion model implies the farmer to be endowed with the basic capacity to gradually access and obtain essential information as well as a certain degree of personal reflexivity – he develops confidence through gaining knowledge and individual experience over time - on the other hand the model does not take into account any political, ecological or sociocultural distinctions. Basically, the direction of the diffusion movement is set by its initial impetus and an imperfect starting situation which is going to finally result in a certain degree of adoption, regardless of the different contexts of the parties and individuals involved. In this respect, Karshenas and Stoneman note: 'Despite the popularity of information-based diffusion models (...) the treatment of information acquisition and provision is really quite primitive. The epidemic model, for example, considers potential adopters to be passive recipients of information rather than active seekers of information. Moreover, the limited supply side literature puts little emphasis upon the suppliers' decisions as to information provision (...). An additional aspect to this is that potential adopters often belong to networks and such networks may provide a frame of reference within which to analyse information acquisition'<sup>302</sup>. So apparently,

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298 Mahajan, V. & Peterson, R.A. 1985: 7

299 See: Rogers, E.M. 1983: 12-13

Other theoretical approaches have developed a different vocabulary and distinguish between 'embodied' innovations that are embodied in capital goods or products – such as tools, fertilizer and machinery – and those that are disembodied and hence are based primarily on information – for example the knowledge on how to efficiently manage local natural resources. However, both schemes point to the vital importance of information in adoption/diffusion of innovation processes.

See also: Stoneman, P. & Diederer, P. 1994: 925

300 Tolia, R.S. 2007: 198

301 See. Padel, S. 2001: 45

302 Karshenas, M. & Stoneman, P. 1995: 273

while rightly pointing at the pivotal role of - albeit concealed – information, in Rogers's early approach there remain a number of essential shortcomings concerning farmers' active involvement in the search for information, the different motivational aspects of the suppliers of knowledge as well as considerations in view of the network aspect.

In order to overcome these deficits, it is quite helpful to have a look at yet another, slightly more differentiated approach of an epidemic diffusion model: The 'decision theoretic view' regards the gradual diffusion of innovation as an equilibrium process where differences in adoption cannot be attributed to imperfect or asymmetrical distribution of information in the first place but rather reflects variations in the expected benefits of potential adopters<sup>303</sup>. Underlying these differences in benefits are the potential adopter's individual structural characteristics such as farm size, market access or the farm's degree of mechanization. Conversely, this also implies that it is not so much knowledge on the *existence* of an innovation which plays a key role in the innovation diffusion process but rather farmers' particular uncertainties around new technologies as a result of poor information on the *performance* characteristics of the latter. From this perspective, the gradual diffusion of innovation primarily depends on the structural characteristics of potential adopters and whether the benefits of adoption are estimated to change over time. Compared with the previous approach where processes of innovation diffusion largely exclude particular contexts and individual action, equilibrium models of diffusion provide ample scope for a large number of variables such as geographic and ecological constraints, risk considerations or individual behavioural variables<sup>304</sup>. However, taking into account the fact that information plays a crucial role in organic agriculture, it is the selective fusion of both concepts which is advocated here. As a result of this, through laying particular emphasis on the essentiality of flows of all kinds of information as well as socioecological predispositions, structural farm characteristics and the individual agriculturists' agency, the observation of diffusion processes concerning the adoption of organic agricultural practices within particular sociocultural contexts gains a fundamentally dynamic perspective.

### **7.3 The Adoption of Organic Agriculture: An Investigation**

With this in mind, the story of B.S. converting to organic farming is a rather typical one, marked by individual reflexivity and the subsequent search for alternative information. B.S. is a very active, very lively character. Full of creative ideas and bursting with energy he might well pass for

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303 Although the epidemic model has developed in several directions, the here indicated extension is one of the more successful ones and is largely attributed to E. Mansfield.

See also: Mansfield, E. 1968 and De Cock, L. 2005

304 See also: Sunding, D. & Zilberman, D. 2001

Rogers's ideal type of the venturesome innovator<sup>305</sup>. Whenever I come to see him he is busy with a lot of different activities such as renovating the house, preparing homemade chutneys and jams, fiddling around with different ingredients in his kitchen or doing experiments on improving the preparation of his organic manure, tonics or pesticides. Together with his wife and two children he lives in a rather big house in the higher area of Saur village. He has two more sons who are living far from home, attending college in Dehrādūn and Purola respectively. According to his temperament and natural disposition for permanent movement, he is engaged in a whole range of different economic activities which, apart from his agricultural undertakings, provide additional income for his family. These include for example an occasional and seasonal occupation as a local mountain guide for both Indian and international tourists who come to Saur village in order to set out from there for the famous 'Har ki Dūn' valley or the selling of his homemade chutney, jams and juices in the little shop that he runs near Sānkrī's bus station. In addition, for some years now, he earns a monthly salary from Navdanya for which he has taken up working as a regional coordinator and part-time employee. It is no accident that of all organic farmers in the area, B.S. has been assigned to this task since he was one of the very first farmers in the region who has come into contact with organic agriculture. When talking about the initial period of his agricultural orientation shortly before considering organic farming, he time and again refers to his negative experiences, especially with the use of chemical fertilizers. At that time, he says, input-intensive agricultural production was the only familiar approach of effectively growing crops and there was nobody in the whole area who would have been aware of alternative means of cultivation. Of course older farmers could still remember the days when the lack of infrastructure had largely prevented closer contact with the rest of society – when public transport wasn't available and therefore artificial agricultural inputs had not yet reached the more remote villages. Versus the end of the 1990s, however, the use of artificial fertilizers and chemical-based pesticides was already common and there were only very few villages in the region where local farmers would not make extensive use of the 'medicine from the market'. Like so many others, B.S. also recalls that during the first four of five years, the application of DAP on his potatoes yielded good harvests, especially on the higher fields of Linguri where it had generally been more problematic to grow field crops than on the lower pieces of land. Also, the potatoes absorbed rather significant quantities of fertilizer. Although this struck him as somewhat odd, the good results at harvest time left little room for doubt on the matter of doing the right thing. However, after this initial period, he began to notice the usual changes in his fields' soil condition: There developed a certain dryness and unusual cohesion and the land became much harder to work. As it happened, at about the same time, B.S. as one of the first farmers in the region

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305 See: Rogers, E.M. 1983: 248

had planted a few dozen of apple trees on some of his land and had shortly visited a one-month course on horti- and arboricultural management at the 'HNB Garhwal University' in Srinagar. There, he recalls, apart from the 'usual' training in chemical-based agricultural production, he also received some basic information on 'organic' horticultural methods such as the use of cow urine as a natural fertilizer and pesticide. Once back home, he decided to use less chemicals and instead try and experiment with his recently acquired knowledge on more sustainable and more cost-effective methods of agricultural production. However, he did not dare to stop using chemicals entirely since he feared the hitherto experienced decline in crop productivity to turn into substantial crop failure once he did away entirely with the application of external inputs. In those days, he says, throughout the whole region there was no other farmer to whom he could have turned for supplementary knowledge and words of advice. There just did not exist any experience on the subject of discarding the use of external additives and instead turning towards alternative methods of agricultural production. At the same time he also realized that in the longer run it would not be possible to steer a middle course but rather would he have to make a incisive decision and turn towards one or the other entirely. Finally, after several years of struggling alone, he learned about Navdanya from a friend who lived in Purola, a town about three hours away from Saur in the down-hill direction, and it was this information which finally spawned his acquaintance with one of Navdanya's longstanding employees. The latter at that time was looking for farmers willing to convert to organic agriculture and, in order to increase then sketchy knowledge, were ready to carry out experiments on the improvement on hitherto practised organic agricultural methods on their own fields. It was through this man, B.S. recounts, that he was finally able to do away entirely with the usage of external chemical inputs. Not only did he acquire valuable knowledge that made a significant contribution to his own comprehension of complex biological mechanisms and correlations, but also did this new understanding enable him to from then on conduct experiments on his own, thus increasing and stabilizing his farm's performance under now completely organic conditions.

It becomes clear from this example that converting to organic agriculture – at least in the mountain regions of Uttarkaśī - is indeed a complex and dynamic process and a whole lot of different factors and influences give direction to its individual implementation and success. At this, reverting to the previously presented preliminary considerations, indeed two of the basic prerequisites are knowledge and time. While the first is essential for the successful compensation for hitherto used external additives, the latter not only relates to the interval of the farmer's deliberate gathering of information, important contacts and practical knowledge but also to the actual period of conversion. In this connection, it is above all the so-called 'transition effect' 'in which a yield decline in the first

one to four years of transition to organic agriculture, followed by a yield increase when soils have developed adequate biological activity (...) <sup>306</sup> which is of particular importance to small-scale agriculturists. However, while it is certain that previously chemically treated soils require a certain amount of time in order to recover their natural structure and fertility after the farmer has stopped using external additives, there of course exist widely conflicting data from various quarters on the subject of organic agriculture's performance after the transition period and its productivity compared to commercial agriculture. The story of B.S. clearly points out that especially during this time of reduced crop production, the converting farmer needs assistance – both in terms of innovative know-how and, if possible, financial compensation for his crop losses. The fact that B.S. – albeit for a long time largely unassisted - persevered in his conversion to chemical-free agriculture in the first place certainly is due to his extraordinarily persistent character and grit; in the second place it is also the household's overall financial situation which is an important issue that has to generally be taken into account. In this case, although he is part of a marginal rural mountain community, B.S.'s financial condition certainly did not leave him with no other choice than to pursue his former, less innovative direction of commercial production. In a highly organized community like that of Saur village, it is unlikely that B.S. has gained the respect and appreciation of the people of Saur and its neighboring villages solely through his great personal commitment to the diffusion of a more sustainable, more localized approach towards agricultural production. On the contrary his family for a long time has been a well respected part of the village community. However, in scenarios where soil, livestock and human health life are as closely interconnected as in the mountains of Uttarkaśī district, and where agriculturists are also conscious of the vital importance of this linkage, adopting methods of organic agriculture might well count as an act of social responsibility which helps the individual farmer enhance his household's social recognition in the village community <sup>307</sup>. It thus may constitute a means of accumulating – in Bourdieu's sense – cultural capital that might be cashed in during other occasions. Without a doubt, however, apart from access to adequate information of - for example - techniques to overcome the usually loss-generating 'transition effect', it also depends on a number of additional factors such as the profitability and availability of capital and labour or – as becomes particularly evident from the above illustrated example – individual characteristics of the adopter such as personal determination, perseverance or venturesomeness - which play a major role in farmers' decisions of adopting or rejecting organic agricultural production.

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306 Ramesh, P.; Singh, M. & Subba Rao, A. 2005: 563

307 See also: Padel, S. 2001

#### **7.4 Individual Farmers' Role: Key Factors for Intracommunal Transfer**

Over the course of this research, it has been shown how different organizations in general and Navdanya in particular have promoted – and of course still continue to promote – specific ideas and agendas about organic agriculture. While these organizations themselves are subject to historical change, the same is also true for rural communities and farmers' households. Moreover, both entities' success strongly depends on the individual motivation and personal dedication of their members and adopters of their agendas. In other words: Circumstances for the generation and circulation of ideas on organic agriculture are first and foremost dynamic and particular. Some farmers as, for example, B.S. see themselves as active members of Navdanya. They take on certain tasks and responsibilities – for example the maintenance of a local seed bank or the organization of particular events such as farmers trainings or the formation of womens' groups – and are rather proud of being part of the organization and the organic movement. Others float with the current, attracted merely by the prospect of certain rewards – be they directly in terms of financial surplus, the stabilization and extension of social ties or indirectly in terms of accumulating cultural capital. As has been shown above, certain approaches towards the diffusion of innovation can be helpful in order to shine a light on the whole process and help identifying important key factors at an individual level which might have implications for other farmers, too. In this case it has become clear that, while the access to adequate information plays a crucial role in the present context of adopting organic agriculture, this event of 'accessing' such information first of all involves a certain willingness to act on behalf of the farmers. At this, the question whether they seek information because they want to convert or they convert because they get more information does not fundamentally change the central focus but merely points to the complex spectrum of the process and makes it clear that there exist a number of other factors that play a crucial role here. As the decision theoretic view has indicated, the structural characteristics of different farms and households also play a major role in farmers' considerations concerning the desired results and expected performance of the new method of organic cultivation. This not only includes financial reasons but it has been shown that a number of other, socioecological factors are at least as important. What is more, individual behavioral differences and character traits have a very considerable influence on the whole process and comprise a wide range of variables such as determination, personal willingness to take risk, dedication, curiosity or maybe even a heightened sense of social responsibility. However, all these aspects have the individual farmer's agency at their centre and thus point to the multiple dynamics of the process of adopting innovation. With the individual farmer as the focal point, the diffusion of innovation turns out not to be the autonomous, self-continuing process it has been assumed to be for so long. It is not a monodirectional process



which, once set in motion, automatically trickles down communities, thus distributing the innovation and its benefits among all of the respective society's members regardless of the individual farmer's structural and personal dispositions. While naturally, a particular agenda about organic generally is being 'inserted' into rural communities from the outside, it is always individual farmers who opt for or against it on often quite personal grounds and who in turn then contribute to its dissemination within their respective societies. While above mentioned theoretical approaches mainly address issues of relevance to the initial adoption of innovative technologies and ideas, they do not provide much support in casting light on the principles and mechanisms of how an innovation, once it has been adopted by early innovators, is then carried further *within* a community and in what way it might undergo transformation. While especially the latter aspect is of great importance in underlining individual farmer's reflexive and creative contribution to organic farming and shall thus be discussed in a subsequent separate chapter, I will now refer to the intrasocietal transfer of innovations, between its different parts, groups and individual members.

### **7.5 The Diffusion of Organic Agriculture: Theoretical Impulses**

As has been pointed out in detail in the previous chapter, individual farmer's agency must not be seen as being independent of its particular local background and social bonds. On the contrary, following Bourdieu's epistemological approach to a particular, historicized understanding of social life which leaves room for individual agency and creativity at the same time, the individual is understood from a thoroughly relational perspective. At this, it is assumed that, due to particularly shaped individual histories, every person is faced with a range of possible choices and bases his decision on particular strategies in order to maximize his gain and strengthen his respective social position. It is therefore only logical that particular ideas and information on organic agriculture that are carried into rural communities from outside – be it through extension workers or other farmers – will necessarily transform and develop distinctive features once they spread within the new context. Now, if one wants to understand how the idea of the 'organic' is disseminated and ultimately established within each particular local context, it is precisely these dynamic flows and continuous transformations that will have to be followed. In this light, again, it doesn't make much sense to perceive the individual and the community as a complex of competing structural elements. Instead, it is tracing back of dynamic relations and processes that are initiated, pursued, negotiated and implemented which are of vital interest. In this context, Bourdieu argued that practices are always generated through the interaction between the individual and its respective community. This takes place in what he called a 'field' which is a dynamic site of struggle in which individuals occupy

strategic positions from where they – many times only semi-consciously – implement their actions. In doing so, the latter are marked by deep complexity that have to be analyzed on a case-by-case basis. While Bourdieu often and readily availed himself of the image of the football pitch in order to illustrate his notion of the 'field', there exists a very similar approach by Latour where he uses the metaphor of a rugby game to explain his ideas on processes of dissemination and activity in social space. In the so-called 'model of translation' he basically argues that 'the spread in time and space of anything – claims, orders, artefacts, goods – is in the hands of people; each of these people may act in many different ways (...) they are doing something essential for the existence and maintenance of the token. In other words, the chain is made of actors – not of patients – and (...) everyone shapes it according to their different projects'<sup>308</sup>. In contrast to a 'model of diffusion' where a token of whatever nature is passed on through a rather passive medium, here, active members shape and change the token as it is moved, thus constantly modifying and transforming it. The members of the chain through which the respective token is passed do not simply resist or transmit the force of the initial impetus but rather, each of them is seen as a source of new energy which is actively added to the movement and transformation of the token. It is essential to note, though, that those individual participants are by no means independent of other members. They can rather be seen as effective and energized chain links with each of them having the potential of acting out their own schemes and strategies while at the same time being limited, or rather predetermined by their respective societal norms and regulations. Wolf and Fukari put it in a nutshell:

'Any translation, as both an enactment and a product, is necessarily embedded within social contexts. On the one hand, the act of translating, in all its various stages, is undeniably carried out by individuals who belong to a social system; on the other, the translation phenomenon is inevitably implicated in social institutions, which greatly determine the selection, production and distribution of translation and, as a result, the strategies adopted in the translation itself.'<sup>309</sup>

From this it follows that it is necessary to always follow the action, to define who is acting and who is acting together. How are responsibilities allocated? How are they negotiated? And how does this process eventually affect collective action and other entities? In this light, it is understood that there are certain features and qualities belonging distinctively to the community since, of course, individuals do not exist outside their social sphere, living in total isolation from collective dynamics. Quite naturally, as has been repeatedly pointed out so far, there exist particular

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308 Latour, B. 1986: 268

309 Wolf, M. & Fukari, A. 2007: 1

characteristics that are applicable to the community as a whole: Specific norms, rules, widely accepted opinions, commonly applied practices such as the notion of ecological stabilization and comprehensive health management of the local environment's closely interlinked components. By approaching these shared concepts via a performative point of view, perceiving the social fabric to be made up of dynamically unfolding relations and active individual contributions, we can focus on processes rather than systems; on small details rather than the big picture; on opinions rather than regulations. It is this performative and at the same time relational perspective on society that I would like the reader to bear in mind during what is to follow. Introducing both the NGO Navdanya as well as local village communities and their respective commonly understood values and practices as very influential entities, is an important step for understanding the critical issue of how ideas, concepts, knowledge and information on organic agriculture develop and flow in time and space; where they reach their limitations; how they encounter room to expand and transform. At the same time, from a performative viewpoint, it is individual agents who, through a continuous process of translation, actively and consciously generate change. Thus, this 'shift from principle to practice'<sup>310</sup> allows for an effective and meaningful tracing of the dynamics of distributed action since ultimately, 'translation is a process before it is a result'<sup>311</sup>. It also allows us to access heterogeneous, vibrant local sites concretely through an 'archive of lived actualities' where 'every similarity hides more than one difference'<sup>312</sup>. It is again Latour who is without doubt quite right to say that 'when one explores the structures of the social, one is not led away from the local sites (...) but closer to them'<sup>313</sup>.

## **7.6 The Diffusion of Organic Agriculture: An Investigation**

Against this background, I would now like to trace a particular thread of diffusion in Saur village that has been initiated by B.S. almost a decade ago. While back then he was one of the very first farmers to go organic in the area, today almost the whole village of Saur and a substantial part of neighbouring Sānkrī has turned towards organic agriculture and a good many farmers, with the support of Navdanya, have been officially certified. Having already given a detailed description of B.S.'s personality above, at this point I only wish to again briefly point out his main characteristic qualities to be able to filter out the main motivations and driving forces that have prompted him to become active and involved in the diffusion of organic agriculture. Subsequently, the same

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310 Latour, B. 1986: 272

311 Callon, M. 1986: 224

312 Appadurai, A. 2005: 11

313 Latour, B. 1999: 18

procedure shall be applied to other members of the chain, thus tracing the dynamics of distributed action from a more differentiated perspective, emphasizing farmers' individual activity and performative actions rather than degrading them to mere recipients of externally induced changes. As outlined previously, B.S. is a very venturesome character who is well aware of his influence on other farmers and who very consciously exercises his agency within the given context of Saur village. Albeit being quite rational and efficiency-oriented, he also has an idealistic point of view when it comes to the establishment and dissemination of organic agriculture – a feature which makes a substantial contribution to his constantly high level of innovative energy. In this regard, his thinking fully complies with Navdanya's ideology of the 'colonization' of natural resources through the global and totalitarian reach of giant corporations who, as a consequence, are robbing rural communities in India not only their basis of existence but also of their genuine identity. In B.S.'s opinion it is therefore essential to defend local knowledge and traditional agricultural methods and practices against the totalitarian structures of the international agribusiness which is the most central issue of converting to organic agriculture. Although he criticizes various aspects of Navdanya's way of proceeding in practice - above all its, as he says, outdated and insufficient marketing strategies – and also questions some other staff members motivation and integrity, he still proudly displays his approval of the organization's basic ideas, painting his house's walls with slogans like 'Monsanto, quit India!'<sup>314</sup> or 'Bt Brinjal is poison!'<sup>315</sup>. He frequently engages in quite differentiated discussions on the politics of multinational companies, globalization and the material and social disadvantages for local people both in his region as well as all over India. However, besides these political convictions, he shows a strong entrepreneurial mindset and a keen understanding of creating and exploiting economic opportunities. For B.S., organic agricultural production is both a means of reviving important aspects of local culture and tradition and an opportune way of making money. In his opinion, putting an emphasis on one's distinctive local identity – characterized by a traditionally inspired way of agricultural production – and earning money by effectively marketing this very concept are not mutually exclusive but rather complementary approaches. This attitude is best illustrated by his plan of establishing a museum of local history which he rather frequently speaks of. In this museum, he says, there will be a display of both historic and contemporary, regionally collected artifacts along with the sale of local organic foods – pickles, fruits, dried herbs, juices and cereals – to tourists coming to Sānkrī and Saur village during the summer months in order to do some of the famous trekking tours in the area. In this manner, he adds, there will be created a win-win situation for both local producers who could open up a new marketing possibility

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314 मोन्सऐन्तो भारत छोडो !

315 बी. टी. ब्रिन्जल जैहर है !

for their organic products and interested tourists who'd be given the chance of buying healthy foods of high quality while at the same time directly supporting local farmers' and thus actively resisting the global threat of multinational company's colonializing tendencies. Therefore, from B.S.'s point of view, organic agriculture has both an ethico-political as well as an economic dimension which he regards positively and which can substantially contribute to both an increase in economic as well as social and cultural capital<sup>316</sup> - not only for him and his family but for any village community.

Among the first farmers who, through the influence and encouraging example set by B.S., have adopted organic agricultural cultivation in the early 2000s, was the household of C.S. whose family, during my stays in the area, generously provided me with accommodation and food as well as kindness and cheerfulness. C.S.'s wife M.D. being B.S.'s only sisters who is still living in Saur village, the two families are quite close to each other. Although M.D. is considerably older than her younger brother B.S. – she may be in her early 50s – she is still young at heart and a very joyful person. I have already extensively reported on her family in chapter 5 and it is quite possible that I call it 'her' family because it is actually M.D. who is without doubt the head of the household. Clearly, these power relations are common in many farmers' households in the area, maybe they are even dominating. However, it is also due to the different characters of B. S. and C.S. – one dynamic, talkative and spirited while the other a calm and composed man of few words - that I am trying to sidestep the generalization of female dominance in the households of Saur village. However, it is nevertheless important to note the fact that – unlike in many other parts of India – in the mountain regions of Uttarkaśī, women often have an essential and active part in both the management of the household as well as that of agricultural operations<sup>317</sup>. They many times play a major role in both operative as well as administrative and decision-making processes concerning the farm and in the case of M.D.'s family, it is clearly her who keeps things firmly under control. Thus, according to both husband and wife, for some ten years now they have been working their land entirely according to organic principles. They don't use any external additives but instead apply their own gobar for the purpose of fertilizing and use gomutr for the control of pests and plant diseases. Also, they multiply and save their own seeds which are mainly regional varieties and thus show a high degree of adaptability to local climatic conditions. With B.S. having given them the initial impetus, it was not a major problem for them to turn back on chemical-free agriculture since,

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316 Here again, B.S.'s case is quite exemplary for this attitude. Since he is an official employee and representative of Navdanya, he does not only receive a salary but in addition, through further disseminating organic agriculture in the area, also accumulates social and cultural capital. He is also very aware of the key role he played in the initial development and adoption of organic farming practices in the area and frequently draws on his status as a person who is being listened to.

317 See also chapter 3.2.4

for reasons of health protection, M.D. anyway had seen to it that their usage of 'medicine from the market' stayed within reason. In the first place, M.D. is concerned with the health of her family and thus – according to the strategy of comprehensive health management - also about the well-being of the household's agricultural lands and livestock. Only in the second place does she think about saving or earning money – which, nevertheless, is an important point considering the family's limited economic resources. And never did I hear her talk about 'the great picture', multinational companies or even national politics. It is quite obvious that she's not interested in implications and effects organic agriculture may or may not have beyond her own familiar setting and field of competence. And although she knows about Navdanya and her brother's affinity to the organization's deals and objectives, she doesn't show any commitment to the latter but, on the contrary, seems to be a little annoyed with them. She tells me confidentially that she had assumed the responsibility as 'Navdanya seedkeeper' merely as a favour for her brother who had requested her to do so a couple of years ago. Actually, she says, she didn't really have the time for this additional burden.

However, what she appears to be lacking in cosmopolitanism she makes up for with high social competence and a deep fund of local knowledge and practical experience. Hardly a day goes by without other women from the village visiting her house, asking her for information and advice. Thus, while B.S.'s motive to convert to organic farming lies mainly in the prospect of earning good money, premised on an ethically sound and community-creating basis, M.D.'s motivation is primarily based on more immediate, more tangible reasons of local 'comprehensive health management'. However, not entirely unlike her brother albeit from a quite different perspective, she associates agricultural method with social responsibility and the maintenance of a genuine local identity – based on the sensible use of locally available resources against the background of the multi-component farming system. She is a very practical, very sober-minded woman who sees it as her first and foremost responsibility to take good care of her surrounding and she is quite convinced that, by means of organic cultivation, she is able to provide a better life in general to her family – both in terms of firstly health and secondly income.

It is not so long ago that S. S., B.S.'s younger brother has also stopped using chemicals on his farm. For him, it wasn't such an easy step - especially with regard to his rather recently created apple orchard of which he has high hopes. S.S.'s single most outstanding characteristic is his spiritual orientation. Whenever we meet he nearly always is in conversation with someone about last week's satsaṅga or some guru's teachings on the proper conduct of being with each other. And when that is not the case, he always finds a way of engaging me in conversations on religious subjects in which

he shows great interest. Little wonder, then, that a substantial part of his motivation to convert to organic agriculture comes from these types of considerations, highlighting respect and appreciation for nature and other living creatures and organisms. Talking about his decision to try the organic approach his brother and sister had told him about, he recounts an observation he had made when he had still applied chemicals to his fields and trees. In order to fight off rats, he says, they made use of rat poison which can be bought rather cheaply on the market. However, it wasn't only the troublesome rodents who died from the poison but also a great number of cats. The realization that these chemicals did not merely kill the targeted pests but – as a completely unintentional result – also decimated its predator was an eyeopener for him and it was then, he adds, that he really came to understand the danger and potential harmfulness of this practice. 'It is essential that we maintain the life of our soils' he adds 'rather than killing it off through the use of chemical-based fertilizers and pesticides'. He also thinks that people must rediscover the knowledge that was the basis of agriculture before it was possible to buy external additives from the market. Moreover he is quite proud of the fact that, ever since he decided to abandon the use of chemicals on his farmland and apple orchards, his understanding of natural processes has increased quite substantially; likewise has his appreciation for all kinds of living organisms who are the very source of healthy and fertile soil. In this regard he also complains about the indiscriminate attitude of local people towards snakes who, although very beneficial animals, are very much disrespected by farmers who usually kill them whenever possible. Every living being had a defined place and meaning within the 'whole circle' he says. Thus, in order to do a good job, farmers should respect every animal's right to exist and to perform its specific function in nature – snakes, for example, love to eat rats – rather than bringing about unpredictable changes and damages through potentially dangerous substances. He repeatedly confirms that he is personally convinced of organic agricultural practices being more respectful of other people, plant, animals and all kinds of living creatures. However, despite this overly demonstrated personal code of ethics, S.S. is also driven by the pursuit of financial profit; much more so, it would seem, than his brother and sister. As it happens, this suspicion is confirmed when one day B.S. takes me into his confidence, telling me of having recently caught his brother in the act of secretly applying chemical fertilizer to his apple trees. 'It is very hard for farmers to believe that they can carry out successful and profitable agriculture while at the same time dispensing with externally added chemicals completely. That is the mentality here' he says. And so, even his own brother whom he has given lots of good advice which he himself had to acquire somewhat painstakingly, is not yet completely aware of the negative effects even just light doses of additives may trigger for the soil's population of microorganisms. It is therefore quite obvious to conclude that S.S. is mainly driven by the motivation of maximizing his social and financial

position. At this, the former might well serve as a means to enhance the latter; his statements on ecological responsibility and respectfulness as a tool to conceal or attenuate his rather strong profit-oriented interests. However, at the same time, his personality is definitely inclined to spirituality and religiousness and, for whatever reason, he likes to occupy himself with conversations and ideas on these subjects. Thus, while his preoccupation with giving organic farming a moral foundation seems to be individually genuine, on closer examination this demeanour seems to be directed very consciously towards more immediate and 'superficial' objectives.

As was laid down in detail in the previous chapter, V.S. is another example of how the diffusion of organic agriculture is spreading in the context under examination. In his case, it was mainly through M.D.'s repeated attempts to exert influence on him that he has come to seriously considering a switch to organic farming methods. However, he hitherto is still hesitant about consistently turning to this innovation and I have also put forward that his hesitation results above all from the fact that he still considers himself under-informed - which in turn suggests that he is well aware of the crucial importance of the knowledge-based aspect in organic agriculture. In addition, he plays a very active role in the gathering of relevant information, carefully and reasonably weighing both second-hand information, first-hand experiences and his own structural prerequisites and objectives against each other. At this, he knows exactly how to come into the possession of relevant information and apparently also discusses the subject with his wife. Moreover, he not only consciously and extensively assesses his own situation but also reflects the motives and incentives of others. Thus, with a wink, he tells me that M.D.'s interest in persuading him to join the organic producers in Saur village is not exclusively based on mutual liking. With several of her family's organic fields at Posla being located right next to his own conventional ones, contamination with chemical substances, spread by wind and water, therefore poses an immediate threat to her organic crops. While all these observations clearly indicate a highly individual process of active decision-making, at the same time V.S.'s reason for taking into consideration the conversion to organic agricultural practices is definitely based on sound economic reasoning. Having already invested a substantial amount of money in another quite recent innovation - namely the cultivation of apples in the area - I judge him to be cautious with his speed of improvement. He wants to play it safe, cautious not to take too many risks at the same time, probably trying to avoid the situation in which he'd have to simultaneously deal with various innovations he is not really familiar with. Nevertheless, he is curious about organic while at the same time being quite conscious of his own shortcomings and potentialities both in financial, structural and social terms. All in all, his profile fits quite well with Rogers's characterization of the skeptical 'Late Majority' adopter for whom



(...) adoption may be both an economic necessity and the answer to increasing network pressures. Innovations are approaches with a skeptical and cautious air, and the late majority do not adopt until most others in their social system have done so<sup>318</sup>.

### **7.7 Individual Farmers` Role: Dynamically Unfolding Activities**

It should have become clear by now that the adoption and diffusion of organic agriculture in the given context is a very complex, dynamic and multi-layered process in which a number of influencing factors are at work. For the investigation of this mechanism, epidemic diffusion models have proven to be way too simplistic in that they greatly underestimate the activity and individuality of the 'chain links' through which the initial impetus is passed on. However, these models have turned out to be beneficial in order to point towards two key factors: Firstly, the crucial importance of information, implying the recognition that organic agriculture is a 'software-based' or 'disembodied' innovation. Thus, the individual potential adopter requires a wide array of information - from the knowledge of particular management techniques through to evaluative and comparative information about its expected performance.

Secondly, with an eye to the 'decision theoretic view', it has been shown that differences in the gradual adoption of innovation reflect not only variations in the supply of information – both on the existence of the innovation itself as well as information on its performance – but also point at underlying structural and behavioural differences between individual potential adopters. This clearly shows the necessity to explicitly consider particular socio-ecological contexts and individual action and thus the need for profound ethnographic research. It is only the qualitative collection of data – listening closely to what farmers have to say about their experiences with organic agriculture while simultaneously relating these to systematic observations of everyday activities and 'embodied' social spheres - that can initiate an authentic inquiry process and thus contribute to a comprehensive understanding of the issue. Moving both within the 'explicit' as well as in the 'tacit' realm, ethnographic in-depth analysis has the property of deciphering otherwise wrongly interpreted, misunderstood or, worse still, completely neglected patterns of action. Taking into account all kinds of sensory and behavioural data as well as other relevant and constitutive background information – for example the quality of social relationships, individual farmer`s structural requirements or even situation-related specific events – eventually enables the ethnographer to come up with a highly context-sensitive, yet individual-based analysis of great insight that takes into account the complex dynamics of social interaction processes.

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318 Rogers, E.M. 1983: 249/50

In this light, the adoption of organic farming turns out to be a many-layered process of social interaction over time in which, depending on a number of crucial factors, individual farmers come to deliberate and well-considered decisions. One of the main determinants necessary to that end is the respective farmer's status of information. At this, the term 'information' includes a rather wide field ranging from officially 'released' information to knowledge gathered through trainings, learning and co-operation in social networks to practically gathered information reflecting farmers' various efforts to individually deal with the latter. Another key factor is of course the individual economic evaluation which is grounded on specific structural preconditions and developments and which is constantly reassessed by the farmers. While sociocultural and ecological motivations play a major role in the adoption and diffusion of organic agriculture within the community of Saur village, the second important issue for virtually all agriculturists is the question whether the adoption of the new innovation is going to translate into economic benefits. Also, the profitability of adoption is not constant but naturally varies in connection with numerous factors and may change along the diffusion path. Not even the innovation itself is unchanging but evolves over time, being adopted into different backgrounds, being assimilated, being modified, being developed.

However, the important thing to note here is that it's an active and reflexive process, that it is not constant but erratic: There does not exist a homogeneous population of adopters but greatly diverging and conscious individuals who take decisions under highly different conditions in very different backgrounds. Drawing back on Latour's 'model of translation', farmers must be seen as active members of a chain through which the innovation of organic agricultural methods is passed on. At this, they do not simply resist or transmit the force of the initial impetus but rather, each of them acts as a source of new energy which is actively added to the movement and transformation of the innovation. As has been shown in detail based on ethnographic research data, this 'translation process' is primarily based on the fact that farmers are effective and energized entities who have the potential of acting out their own schemes and strategies. In doing so, they at the same time are limited – or rather predetermined – by their respective societal norms and regulations. In this light, with both S.S. and M.D. being B.S.'s close relatives who maintain very regular and amicable relationships with each other, there is thus a strong suspicion that the diffusion of organic agriculture in Saur village takes place along family lines or, more specifically, is passed on via word-of-mouth recommendation through networks between farmers who maintain rather close relationships with each other. Here, the most interesting aspect lies in the tracking, interpretation and relevant classification of often highly personal motives of individual farmers against the particular socio-ecological background of Saur village. Also, it is a process over time with different farmers adopting the innovation at various points in time at irregular intervals. In this - as has been

mentioned quite a few times so far - geocological factors, individual levels of information as well as structural elements and individual behavioral characteristics play a crucial role. More specifically, while economic considerations are always playing a decisive role in farmer's individual decision-making process, so too do those concerning some kind of social, ecological or religious liability. Whether these are based on the Navdanya-induced criticism on globalization and neo-liberal capitalism, local practices of comprehensive health management or personal ideas on respecting life and the environment – they are always grounded on highly individual notions of social responsibilities and personal objectives within a local context. Whether these issue from genuine ethical attitudes, or whether they, in turn, are strategies aimed at achieving certain underlying goals of less idealistic content – for example the satisfaction of particular socio-cultural demands and consequently the potential increase of one's individual social position – is a different, albeit quite likely matter. It is, however, essential to approach these processes from a performative point of view and to perceive the social fabric to be made up of both dynamically unfolding relations and active individual contributions. Thus, through putting the individual farmer in the centre of the analytical focus while simultaneously following his actions as part of a context-sensitive ethnographic analysis, can substantially help to achieve a more profound understanding of the hitherto largely neglected complexity of the adoption of innovation and diffusion processes in marginal rural contexts.

However, while emphasizing farmers' individual activities and personal contributions towards the adoption and dissemination of organic agricultural techniques certainly constitutes a key element in the anthropological analysis of this subject, at the same time the fact that organic agriculture is an essentially 'software-based' or 'disembodied' innovation, where the potential adopter requires a wide array of information, points at another major problematic issue: Acquiring the appropriate knowledge. Both the accounts of B.S. and V.S – which have been presented in detail in the two previous chapters of this study – as well as the statements of considerable numbers of other local farmers clearly illustrate that the latter, even though they may be in the possession of 'indigenous' knowledge and are highly acquainted with the local arena, they still lack adequate information concerning the implementation of organic agricultural practices. It follows from these examples that it takes an external impetus in the form of the provision of supplementary knowledge in order to trigger off the individual farmer's courage to not only decide in favor of converting to organic agriculture but also to be able to effectively implement the respective management practices. Clearly, however, the latter are at the very heart of organic agriculture, combining matters of social justice and ecological sensitivity. To take account of this fact, at this stage of the analysis, it must now be dealt with the question of what exactly constitutes the full scope of 'organic knowledge'

since, apparently, there must be something to it that farmers can't acquire out of their own body of knowledge. Organic management practices and traditional agricultural methods are by no means one and the same thing and therefore, the following chapter will be devoted entirely to the diverse facets and complex processes of the formation of organic agricultural knowledge.

## 8. Organic Knowledge

### 8.1 Knowledge on Organic Management Practices

'(...) the significance of focusing on borderlands and margins has to do with questions about how knowledge works in different places, how it gets transformed, but also with borderlands and margins of spaces of transition, transformation and reformulation.'

(Moore, H.L. 1996: 10)

According to practically all approaches, one of the most essential aspect underlying the concept of organic agriculture, is to replace the use of external inputs with other, local resources that are both more sustainable from an ecological point of view and more readily accessible and cost-effective from the farmer's perspective. It is generally emphasized that 'organic' must be understood as a holistic production management system which pays due consideration to local tightly woven agroecological structures and the close interdependency between soil life, plants, animals and people. In this light, not only the Codex Alimentarius but also Regional Navdanya director Dr. V. Bhatt are in unity that 'the term organic does not explicitly refer to the type of inputs used. Rather, it refers to the concept of farm as an organism.'<sup>319</sup> At the same time, it is overall agreed that the concept 'emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system.'<sup>320</sup> These practices include, for

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319 'The term organic does not explicitly refer to the type of inputs used. Rather, it refers to the concept of farm as an organism. Nutrient management is key to this: organic farming uses management practices such as crop rotation, green manuring, recycling of residues, water management and so on, to ensure that available nutrients are used on the farm to grow crops and raise livestock.'

GTZ Sustainet. 2006: 20

320 'Organic agriculture is a holistic production management system which promotes and enhances agroecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to using synthetic materials, to fulfil any specific function within the system.'

[http://www.codexalimentarius.net/download/standards/360/cxg\\_032e.pdf](http://www.codexalimentarius.net/download/standards/360/cxg_032e.pdf) (retrieved on 19.02.2013)

example, the processing of animal dung, the efficient integration of biomass in local cycles of manure production, the preparation of self-made chemical-free pesticides or the use of seed material which is obtained from locally cultivated crops. The key to the successful implementation of the concept therefore stands and falls with the adequate and sensitive management of local resources which in turn makes organic agriculture a time-consuming and, above all, knowledge-intensive venture. During the course of this study, it has been highlighted several times that this is not just a theoretical issue but that indeed adequate information is a key resource for the successful implementation of organic agricultural production, especially in the here investigated scenario. Particularly during the last chapter, it has been made clear that the individual farmer's respective status of knowledge and information is usually linked to a broad range of different factors such as structural preconditions, character, ambitions, personal expectations and so on – just like the different motivational aspects for the adoption of new innovations. It is however of fundamental importance to realize that organic agriculture – and its related management techniques – is an innovation which is brought to local communities and individual farmers from outside. Although it is strongly based on the inclusion of local resources, cultural elements and already existing local skills and know-how, it is nevertheless an innovation which, in the sense of the aforementioned definition by Mahajan and Peterson<sup>321</sup>, is indeed perceived as new by the members of the respective community. This becomes particularly obvious regarding the fact that, while the gathering of information on practical organic methods and techniques certainly is a highly relevant aspect, it is by no means the only one but usually is accompanied by other important, less 'immediate' issues – for example how to access organic markets, skim premium prices, acquire seed material or obtain officially recognized certification<sup>322</sup>. Against this background, there exists a fundamental difference between the knowledge on the management of local resources as it has 'traditionally' been practiced by farmers, and the knowledge on organic agriculture that is generated, propagated and disseminated by official bodies – such as the UOCB - and other parties such as Navdanya. Even though the basic approach of the latter organization corresponds in important points with local strategies of comprehensive health management, the often-mentioned and much-appraised 'organic management practices' are not as indigenous and traditional as they are usually presented. Rather, what has been highlighted so far contributes to the assumption that, as a matter of fact, the actual situation is much more complex than most reports on the subject might suggest. Especially in the Indian context, farmers using traditional agricultural methods are frequently called 'organic by

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321 Chapter 7, p.4

322 In chapter 4 it was discussed at length how Navdanya is trying to meet the various requirements of local farmers who decide to convert to organic farming through a number of supporting measures, including the aforementioned. It was explained there how the latter constitute a well thought-out package that goes well beyond the mere distribution of practical knowledge.

default'. However, the equation of 'traditional' or 'indigenous' knowledge with 'organic' or 'sustainable' techniques clearly is a very simplistic misrepresentation that ignores decisive influences both on the macro- and the microlevel, and that usually serves the purpose of creating a romanticized illusion of genuineness and authenticity. In fact, it should have become apparent by now that the term 'organic agriculture' goes far beyond cultivation without the use of chemical pesticides and fertilizer, and includes a wide range of sometimes highly diverse elements – from global approaches to effective rural development to particular ideological positions to personal motivations and expectations. What all these perspectives have in common, though, is the term 'knowledge' which is on everyone's lips and yet it seems to be quite difficult to put one's finger on its precise location or point of origin. In light of what was said above, it is particularly the knowledge of 'organic management practices' which seems to be at the very heart of the matter, since the very basic design of the here examined organic concept aims at coming into effect in particular – mostly marginal - localities. But what exactly is this much talked about knowledge or rather, what exactly is it made of? Where, by whom and under what circumstances is it generated? What are the 'mechanics' of this particular process of knowledge formation and who initiates, directs and monitors it? Could it be split and segmented into different categories like, for instance, 'external' and 'internal' or 'indigenous' and 'scientific'? Does it even make sense to think in such rigidly dichotomous categories or is it perhaps precisely this clear segmentation that promises ultimate success? Is it maybe the case that different bodies of knowledge are combined into a new concept of 'organic management practices'? Perhaps, there develops some kind of 'knowledge system' - a construct that is something more than merely the aggregation of its subparts and thus carries a different value and integrated function as a whole?

To begin with, it might be stated that in principle, organic management refers to a two-sided process comprising both exclusive as well as inclusive elements: In addition to doing away with external inputs, organic agriculture is also based on effectively implementing new methods and techniques in order to replace the hitherto used chemical-based substances. This fact becomes very clear by individual farmer's statements. From their perspective, there exists some kind of additional 'organic knowledge' which has to be transferred to them from outside via external actors. This does not necessarily mean that this kind of knowledge is completely different from farmers' traditional knowledge. In fact, it is obvious that both types of knowledge are far from being opposed to each other. Rather, they seem to be of a complementary nature, being somehow interwoven, mutually dependent variables. Nevertheless, it is obvious that the point of origin of the knowledge on organic management practices must be looked for beyond local farmers' realm of experience. It is thus very likely that further indications can be found with the person, organization or agency that makes an

approach to farmers about adopting new management practices and going organic. Thus, within the framework of this analysis, the key to the here presented problem clearly lies with Navdanya. However, before investigating in detail the statements and views of the organizations' employees who, as will be shown in an exemplary way, play a vital role in the bringing forth and shaping of the organic knowledge which is then passed on to farmers via trainings and word-of-mouth advertising, initially, we shall take a closer look at the very fundamental characteristics of knowledge, thus approaching the topic more systematically. These preliminary considerations should not only contribute to a more profound understanding of the general construction of knowledge, but should also help in gaining directional clues concerning the manifold potential processes and influences during its formation and application. Also, they are supposed to shine a light on issues related to the situatedness and transferability of information while at the same time addressing the potential intermingling of different complexes and spheres of knowledge.

## **8.2 The Dynamics of Knowledge Production: Heterogeneity, Contextuality, Mobility**

It is a fundamental characteristic of all kinds of knowledge that each of them combines a number of different variables, linking people, sites, skills and traditions. Thus, in reality, there exists an immense diversity of knowledge traditions, each of them an 'assemblage' of particular practices, theories, historical developments and people. Murdoch and Clark aptly summarize, saying that: '(...) all knowledge is made up of many different elements, but always some social, some political, some technical, some scientific, some local, and always with the human and the non-human mixed up together. Knowledge *is* heterogeneously constituted.<sup>323</sup> From this perspective, as a rule, any kind of knowledge is a heterogeneous assemblage of different elements and therefore fundamentally constructed. Here, sociology has made essential contributions to the basic understanding of knowledge. Mostly proceeding from detailed analysis of scientific knowledge, much of its work has concerned itself with 'science in the making', attempting to reveal the 'true nature' of science through uncovering in detail the 'construction processes' of knowledge production. Through a number of case studies showing scientists at work<sup>324</sup>, it broadly opened up scientific practice to ethnographic work which until then had been largely reserved for the investigation of indigenous people and their knowledge systems. Thus, scientific methods and practices could be profoundly analysed to show how science is 'achieved' in much the same way as other kinds of knowledge<sup>325</sup>. Especially the constructivist sociology of knowledge, through taking up the perspective that any

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323 Murdoch, J. & Clark, J. 1994: 129

324 See for example: Knorr-Cetina, K. 1999, Callon, M. 1986, Law, J. 1994

325 Webster, A. 1991

kind of knowledge whatsoever is firstly socially constructed and, secondly, also embedded within particular social backgrounds, further enlarged upon the subject.

At the same time this also yields the insight that even similar types of knowledge - or rather similarly labeled types of knowledge - are by no means alike since they are products of a wide range of different factors. Thus, they are not only subject to local cultural variations and historical developments but also to the considerable effects of individual action - to mention but a few of those factors. Furthermore, being essentially a product of social action, any form of knowledge is thus subject to a particular ontological frame of reference according to which its validity is actively negotiated within permanently ongoing processes of social negotiation. Therefore, different knowledge is about more than merely different *bodies* of knowledge. Knorr-Cetina's concept of 'epistemic cultures', for example, points to the different cultures of knowledge production. Criticizing as self-restrictive the prevailing notion that culture, society or - more broadly speaking - context is usually seen as being situated on the margins of allegedly rational, scientific knowledge-production<sup>326</sup>, according to her, 'context is always part of (...) the internal organization and performance of knowledge-developing and knowledge-grounding procedures (...). Context or, in a broad sense, 'culture' is inside the *epistemic*, and the sociology of knowledge, or perhaps we should rather say the study of knowledge, must also concern itself with the *cultural structure of scientific methodology*<sup>327</sup>. In this light, through paying such close attention to the details of the (social) construction of knowledge, even 'hard scientific facts' are revealed to have no special epistemological base but rather are also products of social action and subject to a particular system of rationality and understanding of the world. This fundamentally context-dependent perspective is understood to apply to all types of knowledge.

Being, as a general rule, a fundamentally social product, the generation and application of knowledge are largely social activities and, in addition, are shaped by a number of factors that exert influence within the respective social environment. Against this background, any kind of knowledge - including scientific knowledge - relies on its own particular logic and rationality, in other words: it is relative to its respective ontological frame of reference that forms the basis of its understanding of the world within which its validity is negotiated. Moreover, it is subject to historical change and fundamentally relative in nature. Turnbull writes: 'Indeed all knowledge is both performative and

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326 In her book 'Epistemic Cultures: How the Sciences make knowledge', through evaluating data that had been collected during more than a decade of observation at two different scientific laboratory sites - one in high energy physics and one in molecular biology - Knorr-Cetina showed that different scientific fields exhibit different epistemic cultures. Speaking of an 'epistemic machinery', her study revealed that, running counter to the assumption of scientifically generated knowledge being factual and objective, there in fact exists a 'diversity of epistemic cultures' even within Western 'hard' science itself that 'disunifies' it.

See: Knorr-Cetina, K. 1999

327 Knorr-Cetina, K. 1991: 107



representational. It is historical, contingent and is coproduced with society<sup>328</sup>. Knowledge and the process of its production is the result of specific historical and social interactions, therefore time- and culture-bound, and thus hardly value-neutral and not automatically universally valid. It is fundamentally pluralistic<sup>329</sup>. In the light of these observations, not only did the then prevailing 'great divides' between science and other forms of knowledge begin to crumble, but also did ethnological studies become increasingly important - both for the investigation of scientific and local knowledge.

At the same time, however, there exists the widespread notion that, in an increasingly globalized world, knowledge and information's most essential feature is fluidity and detachedness. Especially with regard to organic agriculture, this image is often strengthened through the widespread assumption of an extensive validity of organic standards, and many times, knowledge on organic agriculture is claimed to be largely context-free and universally valid - hence the commonly unchallenged possibility of the worldwide implementation of a defined set of organic guidelines. Nevertheless, in these days there exist the strong tendency to increasingly regard knowledge as some kind of asset, an item of property and a valuable resource whose most important characteristics lie in its universal applicability and potential of adaption and reconfiguration, regardless of the context into which it is transferred. In this regard, the intention underlying the accumulation of knowledge many times becomes an act of prospective innovation since 'increasingly it is the idea, not the phenomenon, that is of value'<sup>330</sup>. This does not only apply for multinational companies who nowadays, against the backdrop of a global 'knowledge-based economy'<sup>331</sup>, are increasingly committed to generate and maintain their accordingly structured

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328 Turnbull, D. 1997: 553

329 At that point, whilst making these assertions, the author is very well aware that the latter are of course still subject to often very controversial and sometimes even fundamental debates on the validity of a pluralistic and epistemic relativistic perspective. However, in order to provide a meaningful contribution to the here introduced issue, it is not so much the 'relativist' part of the phrase that takes on special importance, but rather the term 'construct'. This is also due to the fact that, especially in the history of anthropological theory, the concept of relativism – be it based on cognitive, epistemic or moral grounds – has long since attracted high attention and thus has seen so much of controversy that it is questionable whether it still holds sufficient significance to provide a meaningful contribution. Thus, it would appear that nowadays, debates on relativist perspectives within social analytical research, as a rule hold some ideological or moral connotation or are in some other way laden with questions of either/or that veil some kind of subtle and evaluative demand. This may be due to the fact that any discussion on relativism almost inevitably leads to the underlying cognitive structure since, as Luper puts it, 'relativism is the denial of absolutism. In one form, it denies ontological absolutism; in another, it denies epistemic absolutism. Ontological relativism denies that there is but one objectively correct characterization of reality, while epistemic relativism denies that there is only one correct epistemic standard.' (Luper, S.2004: 272). This very dominant tendency of clear positioning, however, is hardly conducive to the here intended analysis which aims at revealing the manifold and multidimensional aspects of knowledge production rather than fathoming the various dimensions of its validity.

See: Feyerabend, P.K. 1999, Laudan, L. 1990, Luper, S. 2004

330 Brush, S.B. 1994: 656

331 Coined for the first time by P.F. Drucker in 1969, the term 'knowledge-based economy' today, for the most part, is used in order to take account of the recognition of the fact that 'knowledge is now recognized as the driver of productivity and economic growth, leading to a new focus on the role of information, technology and learning in economic performance' - as the OECD puts it. This statement is very much consistent with the – then still very

'competitive advantage'<sup>332</sup>, but, as has been illustrated previously, is also partly true for the farmers of Saur village: It has been shown several times so far that grounding successful organic agriculture first and foremost on an informational basis is not merely the theoretical idea of unrealistic bureaucrats and quixotic idealists; Rather, many farmers themselves perceive adequate knowledge of particular management practices to be an essential prerequisite for the initial adoption and effective implementation of organic agriculture. Knowledge is thus indeed broadly considered to be of prime importance and a crucial resource and basic requirement for efficiently tapping individual farmers' potentials. They too consider information to be of crucial importance in generating a personal advantage of any kind whatsoever and for them, without adequate knowledge it is impossible to successfully adopt and enhance organic production, as they are well aware. Thus, even within the very limited context of marginal farming communities, the accumulation of knowledge on organic agriculture constitutes a way of securing control over its potential and moreover, in respect of the individual farmer's innovative capacity, both over its present implementation and future transformation.

Already through these very limited and concise introductory considerations it becomes clear that 'knowledge' is a very broad term that includes a wide variety of different aspects, depending on the respective point of view. Knowledge is highly complex, no matter whether it is seen as alienable resource or as highly situated practice. Even in highly limiting contexts it is never static but, quite on the contrary, highly mobile, fluid and changeable. In this light, the very term 'knowledge' must not be understood as monolithic and uniform but rather as a historically evolved, permanently shaped and modified assemblage of a procedural character that is acquired through the complex intermingling of different pools of knowledge and information<sup>333</sup>. It is generated through a

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economically oriented – view of Bell and his followers who, from the early 1970s onwards, argued that knowledge had become a productive force that had replaced capital, labor and natural resources as central value- and wealth-creating factors. In social scientific discourse, the term 'knowledge-based economy' is closely linked to the phrases 'information society' and 'informatization' and became popular at least with the publication of Hardt & Negri's widely discussed book 'Empire', in which the authors postulate the clearly observable, global paradigm shift from modern industrialized mass production to a postmodern era where information-based services constitute the single most important economic driving force. In their analysis, knowledge plays such a central role that the terms 'informatization' and 'postmodernization' take on congruent meanings – a thesis which was however widely criticized.

See: Hardt, M. & Negri, A. 2001

For a detailed and critical assessment see for example: Webster, F. 2002

See also: OECD. 1996. The Knowledge-Based Economy. Paris: Head of Publication Service

<http://www.oecd.org/dataoecd/51/8/1913021.pdf> (retrieved on 12.03.2013)

See also: Bell, D. 1973

332'(...) advanced industrial nations can only maintain their competitive advantage by using resources and skills which cannot easily be maintained. This demand is met by new technologies which in turn depend on the generation of new knowledge. In order to be internationally competitive (...) firms must constantly keep themselves up to date in terms of knowledge and have instant access to it.

*Gibbons, M. et al. 1994: 123*

333 See: Ackoff, R. L. 1989

deterministic process in which information and data is purposefully structured according to respective frames of reference<sup>334</sup>. At this, a vast repertoire of various modes of communication and interchange play a key role – from neighborly relations to situations of culture contact to the extraction and reintegration of sets of data. Thus, knowledge is essentially characterized by a high degree of dynamics and flexibility. It is a product of many sources, various contexts and personal experiences that, as a general rule, can neither be acquired nor developed isolatedly. Thus Branscomb puts it quite right when she says: 'No one is an island of information, cut off from the rest of the world. Information is by its nature intended to be shared. To inform implies transfer from one to another'<sup>335</sup>. Therefore, taking into account this highly complex, fluid, historically contingent and multidimensional character of knowledge, rather than getting lost in discussions on its validity and defensibility, it seems much more promising to follow processes of the (social) constitution of knowledge, thereby highlighting its discursively constructed character and directing one's attention on the various flows of ideas, concepts and innovations from various sides that ultimately constitute the so-called 'organic management practices'.

### **8.3 Navdanya's Organic Knowledge**

#### **8.3.1 Zooming Closer on Navdanya's Organic Knowledge: Interview I**

I meet Dr. R.S. Rawat in the office of the Climate Change Center at Navdanya's 'Bija Vidyapeeth biodiversity conservation and organic farm' in Ramgarha, near Dehradun. Within the context of a two-day farmers' training course taking place at the farm, he's just given a lecture on organic techniques of pest-control and methods of fertilization and has now withdrawn into the office in order to attend to some desk work, leaving the podium to the next speaker. Although he lives quite close by, Dr. R.S. Rawat is seldom present at the farm but usually just drops in briefly so as to exchange a few words with some other employees. A major part of his work at Navdanya involves organic certification and the alignment of purchases of crops from member farmers – a field of activity which usually directs his efforts towards 'the field' rather than activities on the farm itself. Today however, his obligation concerning today's training course provides me with the opportunity of conducting an extensive interview with him<sup>336</sup> - with particular emphasis on the origins of the knowledge on organic agriculture.

The kind of knowledge he passes on to the farmers, Dr. R.S. Rawat explains, is traditional 'farmers'

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334 Neubert, D. & Macamo, E. 2004: 99/ 100

335 Branscomb, A.W. 1994: 14

336 The statements cited in the following investigation have all been excerpted from the here mentioned interview, conducted with Dr. R.S. Rawat on March 03.2011. For the complete transliteration see digital medium.

knowledge`. He is quite adamant about its authenticity and describes it as `forgotten` knowledge which the `ancestors` used `in earlier times` but has now `been forgotten` – which is why it is necessary to kind of re-teach farmers their own traditional knowledge. He explains that, due to the broad introduction of modern agricultural methods, large parts of farmers` traditional knowledge have today become obsolete and fallen into oblivion since. However, as if there wasn`t the slightest contradiction in his statement, in the same breath he declares that, moreover, this very traditional knowledge had been `worked on` and the respective substances and preparations had been `improved`. Nevertheless, he insists, the `basic principle is the same`. As to the question who exactly was involved and responsible for these modifications, he assures me that both he himself as well as `many other people also improved` it<sup>337</sup>. Therefore, according to Dr. R.S. Rawat, the knowledge that is used on Navdanya`s farm as well as passed on and spread amongst farmers, comes from a variety of sources – including himself – and thus, rather than being fixed and monolithic, is a composite construct. Nevertheless, he says, it was based on traditional farmers` knowledge which has merely been somewhat extended and enriched with a number of improving `inputs`. In order to describe the nature of those `inputs` or `improvements`, Dr. R.S. Rawat uses phrases such as `increase the population of microorganisms in the soil`, `nutrient availability` and `the nutrient management of nitrogen, phosphate and potassium`. Having graduated as a biologist and also holding a doctorate degree as a geologist, Dr. R.S. Rawat has a solid scientific background and thus feels very comfortable using `scientific language`. When he talks to the farmers in Hindi, most of the above-mentioned terms and phrases he directly integrates them into his speech, leaving them unchanged and in English. It is this, as he says, `scientific validation` which seems to constitute the connection between traditional agricultural methods and the much talked-about `organic management practices`. In Dr. R.S. Rawat`s opinion, the concept of organic management comprises both traditional farmers knowledge as well as western scientific insights and both are blended into some kind of science-based upgrade of the former.

When I inquire about the precise connection between the two and the details of the process that binds them together, Dr. R.S. Rawat explains in detail that he `frequently goes to villages` where he meets with farmers and `collects knowledge from many people`. At this, he says, he benefits greatly from the fact that he himself has grown up in the area, thus being familiar with the local way of life.

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337 In particular, he mentions the importance of Subhash Palekhar for the efficient `improvement` of traditional cultivation methods. Subhash Palekhar, who originates from the Vidarbha region of Maharashtra – an area which, during the previous two decades, has been sadly notorious for its high percentage of farmer`s suicides – is one of the most famous advocates of natural farming in India. He has come up with the concept of `Zero Budget Natural Farming` and today dedicates himself to the propagation of his method all over India, providing training sessions for farmers through camps, workshop, seminars and publications in various Indian languages. He has also visited Navdanya`s biodiversity and seed conservation organic farm at least once where, apparently, he has left his mark.

He further explains that the initial stage of collecting existing local knowledge is usually followed by a second phase of practical work and hands-on experiments which involves not only his own initiative but also that of other local farmers. Through working together, innovative approaches are developed and thus in a third phase of critical reflection, the outcomes are assessed and 'you can see that it is working'. The three described stages of gathering and modifying knowledge are therefore mainly characterized by aspects of practical work and a lot of individual activity: Information has to be collected through conversations and discussions; It is then put to the test, modified and 'upgraded' through planned experiments, based on farmers commitment and support as well as a great deal of practical work; And thirdly, even Dr. R.S. Rawat doesn't go into details here, the whole process apparently involves a high degree of clear thinking, deliberate observation and reflexivity.

### **8.3.1 Zooming Closer on Navdanya's Organic Knowledge: Interview II**

Darwan Singh Negi is another longstanding employee of Navdanya. While Dr. R.S. Rawat has been acquainted with the organization for hardly a decade, Darwan Singh Negi is one of the very senior employees who joined Dr. Shiva already at a very early stage in the late 1980s. It is thus hardly surprising that, during this rather long period, he has been entrusted with all different kinds of assignments and responsibilities which earned him the reputation of being highly experienced and extensively informed. Although, as he himself says, his favorite field of activities is that of a locally responsible on-site coordinator, his present scopes of duties goes much further than this and involves all kinds of tasks, both 'in the field' as well as on the farm and in the office. He is thus present quite often at the farm and, during the time when I am also there, we see each other rather frequently, working together in the fields, having loose conversations. When I eventually ask him for an interview in order to shed more light on the subject of organic knowledge, he readily agrees to make some time for me and not long thereafter invites me to sit with him in the late afternoon sun in front of the farm's kitchen block.

In the course of our following conversation<sup>338</sup>, it quickly becomes clear that Darwan Singh Negi, too, considers the knowledge on organic agricultural methods and techniques to be composed of different parts, originating from different sources. One of those parts is once again traditional farmers' knowledge. To this, he refers using expressions such as 'old techniques' or 'old generation's knowledge'. For him it is quite clear, that the knowledge Navdanya uses owes its origins to an

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<sup>338</sup> The statements cited in the following investigation have all been excerpted from the here mentioned interview, conducted with Darwan Singh Negi on March 03.2011. For the complete transliteration see digital medium.

old and traditional way of agricultural cultivation which nowadays, however, is scarcely practiced any more. Interestingly, while giving his view on the matter, this aspect of tradition and authenticity comes to him only in second place. Rather than insisting on this aspect right from the beginning, he in the first place thinks of a very personal and subjective dimension: 'While working you'll get the knowledge' he says, and adds, 'you need a little bit idea then you can learn anything'. Putting the primary emphasis of his explanation on the individual's ability of thinking, reflecting and acting accordingly, he also decisively puts a stress on the practical aspects of knowledge formation. For him it is clear that 'if you'll do again and again the things, you'll learn yourself. ... The soil will teach you, the nature will teach you.' In this process of learning, it is practical work, combined with a high degree of reflexive thinking that constitutes the very basis of knowledge on organic agriculture. However, while the basic techniques originate from the 'parents and grandparents' rich fund of farmers expertise and know-how, to him it is even more important that these are not simply adopted or transferred into new contexts; Rather, the most vital factor in the process of generating organic knowledge is the individual's contribution that is generated through a balanced process of practical work and critical reflection. 'You can get an idea' he says, 'and then you need apply your mind yourself... how you need to improve that'. In addition to the terms 'experiment' and 'improve', he states that, with increasing experience over time and routinized ways of dealing with 'the soil', there will develop some kind of intuition – a sharpened sense and a practical understanding of various relevant causalities.

Nevertheless, as the choice of his words also reveals, apart from farmers knowledge and practical hands-on experience, there exists an additional aspect to the generation of organic cultivation methods, namely scientific background information. He does not use 'scientific language' as freely as Dr. R.S. Rawat, but nonetheless every now and then drops phrases such as 'bringing microorganisms back in the soil' or 'fixing nitrogen'. Since, in contrast to his colleague, Darwan Singh Negi can't fall back on sound academic training, he must have familiarized himself with this scientific frame of reference in the course of his work. Given the fact that he has dedicated much of his professional life to not only propagating and supporting organic agriculture on a pan-Indian scale, but also to criticize and obstruct the further expansion of commercial agriculture at a global level, his solid acquaintance with the subject gives little reason for astonishment. It is also against this background that he declares the overall intention of his efforts – and of course also those of the whole Navdanya team – to be directed towards the creation of effective and, above all, simple techniques of organic agricultural management. The reason he believes this approach to be indispensable is his fundamentally pessimistic estimation of the young generation's capability to somewhat reclaim agriculture their own business and take it into their own hands again. He, too,

claims that it was due to the massive and deteriorating influence of commercial agriculture over the last few decades, that there is now a huge knowledge gap between today's young rural people and their parent's generation<sup>339</sup>. Moreover, he says, there was a lack of willingness to work hard on behalf of the younger generation, and it was precisely due to these two fundamental shortcomings that the older generation's knowledge needed some innovative brush up. The latter, however, had to be based on simplicity rather than complexity in order to stand even the slightest chance of complying with the particularly poor motivation and knowledge base of the younger generation. He thus explicitly states that '... we try to make those techniques very simple way ... so that the young generation can go after'.

Nevertheless, he makes it very clear that the basic foundation of all organic management techniques is the older generation's traditional knowledge. Concerning the origins of the latter, he explicitly points out its various backgrounds and sources, stating that it was 'definitely not from one place'. Rather, he asserts that 'different knowledge you'll get from different areas', from 'many places' and 'different people'. Likewise, he stresses that the initial stage of the process of knowledge generation is grounded not only on a variety of different regional concepts but also on the transfer of the latter into other new local contexts. 'It is a diverse country' he says 'and the people have a diverse knowledge also'. 'You can not get plants, you can not get the similar thing what they have ... but you can get idea. And you can apply the mind and you can use'. In this respect, it is thus also particular localities that play a decisive role in the generation of organic knowledge since the basic techniques he speaks about, need to be adapted appropriate to the respective context they are implemented in. But then – who exactly is involved in this innovative process of collection, innovation, modification and implementation? On this point, Darwan Singh Negi's explanation differs only slightly from Dr. R.S. Rawat's view. Both mens' versions concur in that, primarily, the whole process is essentially based on one's own initiative. It is the employee who gathers knowledge when, according to Darwan Singh Negi, 'we visit village to village, meet to people and talk with them...talk with... parents or grandparents'. Subsequently, during a second phase, there follows practical work and hands-on experiments – also in this respect, both points of view are in agreement. However, unlike his colleague, Darwan Singh Negi puts particular emphasis on what happens in between these two stages of knowledge formation. In his account, he puts particular stress on his own individual creativity which he repeatedly refers to as 'applying one's mind'. He therefore is highly aware of the fact that, to be precise, between the collection of raw information from different parts of the country and its modification through practical on-site experiments, there exists an important intermediate step of individual critical reflection and creative thinking. From his

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339 See: Methodological Appendix I/6: Excerpt from interview with D.S. Negi on March 27<sup>th</sup> 2011

perspective, it becomes clear, that this is where the innovative impetus of the whole process can be found. Eyes shining, he provides me with different examples, describing in detail how he came up with the recipe of natural fertilizers and pesticides that can be fabricated quickly and simply by any farmer. However, while this aspect of individual reflexivity and constructiveness plays a crucial role in Darwan Singh Negi's perspective on the generation of organic knowledge, he also points out the central importance of working together, both with farmers and other Navdanya employees. In fact, he says, passing on the information collected, sharing it with other farmers, co-workers and even one's own family members is of fundamental relevance to the whole process<sup>340</sup>.

### **8.3.2 Zooming Closer on Navdanya's Organic Knowledge: Interview III**

In order to get a third opinion on the key issue of knowledge generation and to achieve even greater clarity on its exact origins and processes of knowledge formation, a couple of days after my interview with Darwan Singh Negi, I am fortunate enough to be able to meet Dr. V. Bhatt, Navdanya's deputy director and employee of Navdanya since 1997, for another interview<sup>341</sup>. Like most of Navdanya's leading employees he, too, shows a great deal of idealism, is rather generous with support and information and, what is more, brings an enormous wealth of knowledge and experience. Besides, Dr. V. Bhatt speaks both excellent Hindi and English and holds a PhD in botany. All these are reasons enough to make me hopeful that an extensive interview with him might provide me with more detailed and clarifying information on the subject. Due to his leading position, his field of activity - similar to Darwan Singh Negi - is as broad as the organization itself. It includes, for example, the monitoring of Navdanya's various ongoing awareness programs, fund-raising, the planning and scheduling of projects and presentations both at domestic and international level as well as the coordination of the organization's networking – mostly on a pan-Indian scale. Apart from this, he also is substantially involved in organizing the great variety of on-farm activities as well as assigning areas of responsibility and specific tasks to workers at the farm. As a result of this, he currently works a lot at the farm, preferably in the office of the 'climate change center' building, a little off the farm's main complex of buildings, which is also where we meet for our conversation.

Like his colleagues before him, Dr. V. Bhatt, too, insists that the knowledge on organic management that is disseminated by Navdanya is 'actually farmers' knowledge' whereas 'most of it came from people only'. However, whenever he makes this statement, he also immediately supplements it with

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340 See: Methodological Appendix I/7: Excerpt from interview with D.S. Negi on March 27<sup>th</sup> 2011

341 The statements cited in the following investigation have all been excerpted from the here mentioned interview, conducted with Dr. V. Bhatt on April 2<sup>nd</sup> 2011. For the complete transliteration see digital medium.



the assertion that there also exists an innovative part, based on scientific insights. Furthermore, it seems that his perspective on this initial farmers' knowledge he talks about is shaped by some kind of backward-looking. He explains: 'What Navdanya is ah...promoting...is really what farmers were doing earlier. With some innovations to it'. Nevertheless, he makes it very clear that the actual organic knowledge that is promoted by his organization is definitely a combination between rather old and authentic farmers' knowledge and new, innovative elements. Whilst the former is obtained through 'visiting around' and 'collecting information from people', the latter is largely premised on a combination of scientifically-based observation and practical experiments. Not only, he says, are the previously collected methods 'applied' and 'tried', but also does there happen a 'lot of research' and 'scientific studies'. Thus for him, too, the process of knowledge generation takes place through two major and rather separate operational steps. Interestingly, however, these two steps are linked by a fundamentally procedural perspective which Dr. V. Bhatt seems to place a very high value on. 'Most of the things what we are...suggesting...they are...they are...they were collected from farmers and they're actually farmers' *experiences*' he says, thus adding the notion of a development over time to the original source of knowledge. It is evident to Dr. V. Bhatt that 'farmers they keep on doing innovations' and that therefore, the knowledge which is collected from them, is essentially shaped by the factor of time. While, during the second phase of innovative modification the significance of time cannot be readily overlooked, the very same accounts for the farmers' knowledge: It is essentially based on processes of practical innovation over time. So it is not true that only Navdanya adds innovations to 'raw' traditional knowledge but rather it builds on knowledge which itself has developed over time and has undergone changes, setbacks, improvements and innovations. It is this a rather fundamentally different view on traditional farmers' knowledge since this aspect of inherent creativity and innovation is usually overlooked, underrated or even completely disregarded.

While on the one hand, Dr. V. Bhatt is the only one who explicitly stresses the inherent innovative qualities of farmers' traditional knowledge, on the other he is completely in line with his colleagues when confirming that the latter comes from 'different sources all over India'. The actual challenge, then, is to modify the respective agricultural techniques in such a manner that they become 'applicable for different climatic conditions' or, in other words, to make them suitable for other contexts. This, he says, is done through hands-on experiments not only by himself and his team on Navdanya's experimental farm but also by farmers themselves<sup>342</sup>. Nevertheless, not at all that dissimilar from Darwan Singh Negi, he also stresses his own innovative efforts of 'learning from the farmer' and subsequently putting his insights to practical use for others. At this, however,

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342 See: Methodological Appendix I/8: Excerpt from interview with Dr. V. Bhatt on April 2<sup>nd</sup> 2011

scientific reasoning seems to play a key role in his reflections on the findings he was told by farmers – which is hardly surprising, considering Dr. V. Bhatt’s extensive academic background. Based on observations he is told by farmers, he establishes an approach that is based on an interesting fusion of farmers’ first-hand experiences, his own practical findings and scientific reasoning<sup>343</sup>.

### **8.3.4 Multilayeredness and Individual Creativity**

Through the above presented material, it becomes evident that the formation of knowledge on organic agriculture or, more precisely, the process of the generation of organic management practices, is indeed by all means quite complex and multilayered. It is characterized by a high degree of interconnectedness and flows between all kinds of different sources and is far from being a standardized construct based on empirical components alone but also incorporates highly individual aspects such as personal experiences, ideas, innovations and expectations. Thus, two major insights can be drawn from the information gained by the interviews: For one thing, it becomes clear that the involvement of various sources of knowledge play a major role in the process of generating organic management practices. Apart from the farmers who provide the researchers with their own – inherently innovative – traditional knowledge, there is a whole lot of other actors who contribute to the process of organic knowledge generation: scientists, activists, colleagues, students, friends and family members. However, while all respondents agree that actually, many people are involved in the formation of organic agricultural knowledge, at the same time it becomes very clear that, for another thing, also the respondents’ very own individual contribution is substantial. Based on the respective employees motivation and creativity, individual innovative potential does not merely shape the resulting knowledge, but quite often also is essentially responsible for its formation in the first place. At this, speculating on the respective importance of individual and collective influences other than on a case-by-case basis seems to make little sense. Rather, this circumstance must be understood as adverting to the highly complex multilayeredness of this process and, ultimately, to the fact that the organic management practices which are promoted by Navdanya, are fundamentally constructed and deeply heterogeneous in character. There can be no doubt that, while personal reflexivity, creativity and action play a highly important – and at the same time greatly underestimated – role here, organic agricultural knowledge is the result of a process which involves the individual contributions of a great number of people. In other words, the production of knowledge takes place in and through actors’ networks on whose

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343 See: Methodological Appendix I/9: Excerpt from interview with Dr. V. Bhatt on April 2<sup>nd</sup> 2011

development, maintenance and extension Navdanya attaches particular importance. The here investigated organic knowledge is thus fundamentally contextual in character and depends essentially on social exchange. This finding largely coincides with the abovementioned perspective taken up by the constructivist sociology of knowledge, namely that any kind of knowledge whatsoever is a heterogeneously constituted assemblage of various social elements. Therefore, the realization that any mode of thinking and knowing is socially imparted, evaluated and constituted detects the fundamental similarity between all forms of knowledge in the fact that they are all essentially social in character.

### **8.3.5 A Combinational Concept?**

In addition, there exists yet another, quite outstanding characteristic that is of central importance to the here investigated generation of organic management practices and that is directly linked to the epistemological level. All the respondents refer to a rather combinational understanding of organic management practices, seeing it as a system that amalgamates elements from two fundamentally different realms and knowledge systems: Both farmers' traditional knowledge and Western scientific rationality are seen as the basis from which ideas and inspiration can be drawn. While it depends on the individual innovator to what extent scientific methods and findings are explicitly integrated into the overall concepts of organic management techniques, it is unquestionable that scientific thinking – next to farmers' traditional knowledge - constitutes an additional, equally important frame of reference underlying the development of the latter: All respondents are well-versed in scientific methods and, to a certain extent, explicitly use scientific reasoning to explain what gave them the idea for particular innovative elements as well as their principles of operation and effects. As has just been indicated, the extent to which each innovator falls back on his respective scientific knowledge base, differs from one person to the next. Just as diverse are the intentions behind these innovations, ranging from the effort of finding theoretical scientific evidence in traditional agricultural techniques to practically simplifying them. However, it is quite clear that, for the generative process of Navdanya's organic methods, the 'old generation's knowledge' plays a part as does 'modern scientific thinking' – a highly interesting insight that, in view of the commonly accepted 'traditional' labeling of organic agriculture - needs to be discussed in more detail.

In order to not immediately overstretch the above analysis, this difference between the two frames of reference - the 'scientific' and the 'traditional' one - so far has been implicitly accepted without providing a more comprehensive examination hereof. Moreover, the neglect of bringing into

question the validity of the two, of unreservedly separating them from each other as being grounded on fundamentally different rationalities, does not run counter the above-expressed views of Navdanya's employees. Thus, until now, there has been no immediate need to critically examine the – apparently widespread – assumption that both are separate bodies of knowledge, each based on fundamentally different premises. Nevertheless, since the following section is intended to provide the reader with a more sophisticated picture of the – seemingly particularly important – nature of the respective type of knowledge, it is first of all crucial to be aware that the relation between traditional bodies of knowledge and western scientific thinking is a lot more complex than the thus-far investigated examples suggest.

#### **8.4 Approaching Knowledge: A brief Outline**

The statements examined above directly point to the age-old dilemma which is inherent in the discussion on the relationship between indigenous and scientific knowledge: The mere accentuation of the importance and special status of farmers' knowledge commits the respondents to a quasi-dichotomous perspective which has already been discussed by many early anthropologist who were also caught at the horns of this dilemma. Especially over the last thirty years, the social sciences have seen the reemergence of extensive and heated debates on the topic. These were ignited more than thirty years ago when, in 1980, Brokensha, Warren and Werner published an edited volume on 'indigenous knowledge systems and development'<sup>344</sup>. Since the then customary top-down approach in technology transfer had failed in many places, early approaches cultivated the keyword 'local knowledge' in order to make it the basis of a new generation of measures in the field of development cooperation<sup>345</sup>. Thus, the qualities of ethnological research were re-discovered and integrated into practical approaches of development assistance<sup>346</sup>. Due to the prevailing view that local stocks of knowledge could be seamlessly integrated into scientific-technical approaches of development, initially, the largest part of activity was concentrated on the collection and classification of local or indigenous technical, ecological or medical knowledge. However, the growing realization of this not being the case or, more specifically, that this process of knowledge integration was far more complex and multilayered than had commonly been assumed, brought about intensified research in this direction.

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344 Basically, the volume points to the ethnological truism of the inherent value and practical potential of indigenous knowledge, calling into question the then prevailing domination of technicians and engineers in the field of development cooperation.

See: Brokensha, D.; Warren, D.M. & Werner, O. (eds.). 1980

345 See also: Richards, P. 1985

346 See also: Ghai, R. & Kumar, S. 2011

Over the last few decades, the subject of the nature and potential of local knowledge and its relation to and possible combination with western scientific thinking has been extended in various ways and is still continuously debated and developed. Thus, in professional literature, all manner of other terms are to be found in place of farmers' traditional knowledge, comprising all kinds of connotations: 'indigenous environmental knowledge', 'rural's peoples knowledge', 'traditional technical knowledge', 'local agricultural knowledge' - to name but just a few<sup>347</sup>. As already insinuated above, the question whether local knowledge was ultimately equivalent to the knowledge gained through the modus operandi of Western science, or whether it was structured entirely different is an age-old topic of debate in anthropology and was merely resumed in the wake of the discussion on development cooperation and technology transfer briefly described above. On the whole, the latter mainly revolved around the question whether holistic local knowledge represented the - often romanticized - countermodel to fragmented Western science and furthermore addressed the corresponding practical issue of whether local knowledge was applicable within the framework of science-based schemes. However, what has been said so far on the main features of knowledge should be sufficient to bring home the message of Agrawal's comments when he says: 'In the face of evidence that suggest contact, diversity, exchange, communication, learning and transformation among different systems of knowledge (...), it is difficult to adhere to a view that separates indigenous and scientific/ Western knowledge'<sup>348</sup>.

Nevertheless, the more recent shifting of the focus in the direction of multiplicity and processuality has not only produced numerous discussions on the social dynamics that underlie the 'construction' of knowledge but also accompanied the emergence of yet another, more psychological-oriented approach which concerned itself with the diverse ways in which people think and the detailed investigation of the various factors contributing to this diversity. Dealing with individual rationality and reasoning, at the same time it paid particular attention to the various contexts that produced particular, historically and culturally sensitive cognitive patterns, thus yielding the so-called 'modes of thought'.<sup>349</sup> Both approaches lie close together in that they both view culture in general and knowledge in particular as closely interwoven products of both individual and social 'inventiveness'<sup>350</sup>.

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347 Compiled from a comprehensive selection of literature, Antweiler provides a broad 'diversity of terms for local knowledge (and its branches) and their various connotations'. For him, 'the different terms used for local knowledge, and the corresponding differences in emphasis, in turn reveal that local knowledge, today more than ever before, needs to be understood in a political context'. (Antweiler, C. 1998: 471)

348 Agrawal, A. 2004

349 As brief overview see: Fikentscher, W. 1995

350 See: Olson, D.R. & Torrance, N. 1996

### 8.4.1 Local Knowledge

In view of all these considerations, it becomes obvious that the issue of knowledge formation, transfer and dissemination is highly complex and not that easy to deal with. Therefore, to begin with, any chosen designation such as 'Western scientific knowledge' or 'farmers' traditional knowledge' can merely serve as a rather broad classification since even within these categories, there exists a multitude of different 'cultures of knowledge production'. Against this background, finding the right term for each 'type of knowledge' is already a challenge. Up to now, following the statements of the interviewees, the first type of 'basic' knowledge has been referred to as 'farmers' traditional knowledge', hereby implicitly emphasizing its authenticity and practicability. The second body of knowledge has simply been labeled 'Western scientific knowledge', thus indicating its radically different character in terms of both its geographic origin and its system of rationality. Here, too, I was merely following the indications given by the respondents themselves.

Apparently, behind all analyzed statements, there exists the notion that organic agricultural knowledge is actually based on the combination of otherwise dichotomous knowledge systems. It has already been mentioned that there exists a multitude of designations for what so far has been called 'farmers' traditional knowledge'. At this point, however, still in consideration of the above-analyzed statements, I would like to shift the focus from the term's temporal aspect to a more locality-related perspective. Through replacing 'traditional' with 'local', I hope to avoid the danger of misleadingly associating the former term with authentic historicity. Instead, I intend to emphasize 'local farmers' knowledge' relatedness to a specific place, a particular physical and cultural environment without giving any indications as to its specific source and point of origin.

Throughout this analysis, time and again the point was raised that the physical environment – mountains, soil, forests, climatic zones – is massively affecting local farmers' lives. In fact, there can't be an analysis of local society without, first of all, taking into consideration the overall environmental conditions: distribution and accessibility of natural resources such as water, soil or forests; climatic particularities in terms of temperature, perspiration or winds; the possibility of accessing and exploiting particular ecological niches and so forth. It has also been shown at length how local peoples' life is inextricably interwoven with these environmental preconditions and how, in their interplay of forces, there develop particular local strategies of effectively coping with the respective environmental conditions. In this respect, the reference to a particular context is mandatory. This basically means that local knowledge is by no means universal but is valid only within a particular local configuration of environmental situations, economic models, organizational structures, social conditions and so on. From this 'ecological particularism' - as Richards<sup>351</sup> put it –

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351 See: Richards, P. 1985

it follows that local knowledge can easily lose its value outside its context of origin<sup>352</sup>; On the other hand, however, it is exactly these constraints that add so much value to its local field of application. Local knowledge becomes effective in concrete, empirical situations<sup>353</sup> and it is for this reasons that it is usually ascribed with the 'primacy of practice' - a phrasing that aims at attenuating the dividing line between western science and local ideas by means of pragmatically putting into perspective an underlying, intrinsic concept of truth: seen in this light, indigenous statements about reality are regarded as being potentially true because they are correct at the pragmatic level of practical utility. This means that, even though local ideas and techniques may not be verified through applying scientific criteria and procedures, they may nevertheless turn out to be advantageous according to local criteria. From this point of view, to begin with, local knowledge denotes the cognitive dimension of practical action. In other words: The thoughts, ideas, notions, beliefs and opinions of local people that have an impact on their actions. Local knowledge may relate to virtually any domain and, being conditioned by particular sociocultural categories and classifications, it is commonly understood as 'being culturally relative understanding inculcated into individuals from birth, structuring how they interface with their environments'<sup>354</sup>.

Against the background of this very wide definition, local knowledge comprises even more than empirical knowledge - reflected and verbalized information and skills - and often is linked with the sphere of the 'tacit'<sup>355</sup>. It is the heritage of practical everyday life, learned through experience and repetitive practice as well as oral transmitting. In this broad view, local knowledge is relevant to everyday life and contributes to what sociologists term 'common' or 'everyday knowledge'<sup>356</sup>:

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352 '(...) indigenous knowledge is very rich in contextual detail but is immobile, having little utility outside of particular places.' (Kloppenburg, J. 1991: 531)

353 I understand an 'empirical situation' as a process which is generated and structured according to multiple influences by different actors or groups of actors. Chapter 1 explained how not only conscious flesh and blood actors but also and non-human actants contribute to social dynamics, thus allowing for the visualizing and tracing of specific, interlinked configurations of activity and its retroactive effects against the particular local background. From this perspective, local actors' knowledge provides further detailed insights into the development, retention and effects of specific local relationships and therefore contributes substantially to investigations of empirical situations.

354 Sillitoe, P.; Dixon, P. & Barr, J. 2005: 4

355 From this point of view, local knowledge comprises not only purely physical factors but also unreflected regulations and not explicitly verbalized classifications and understandings such as cosmology and cosmogeny, knowledge about particular procedures and processes, appropriate behavior in everyday situations, automated motion sequences and standardized movements, complex courses of action, patterns of thinking and decision-making, subconscious structures of relevance, patterns of interpretation, explanatory models and so on.

For more detailed comments on 'tacit knowledge' see also chapter 6.1.3.

356 Often, actors do not consciously perceive 'everyday knowledge'. It is taken for granted and constitutes the unquestioned base of the meaningful structuring of society or, as Berger & Luckmann write: 'Jedermannswissen ist das Wissen, welches ich mit anderen in der normalen, selbstverständlich gewissen Routine des Alltags gemein habe'. (Berger & Luckmann. 1980: 26)

See also: Schütz, A. & Luckmann, T. 1979

However, 'everyday knowledge' cannot be put on a level with 'local knowledge'; Rather, the former is a superordinate category which comprises the latter and also includes the knowledge of local specialists that may not necessarily be known by all community members. Nevertheless, also the knowledge of local experts – in this case farmers – is characterized significantly by 'tacit' factors and it is impossible to draw a clear line between its implicit

Local knowledge is both skill and knowledge and is fundamentally related to a particular ecological and cultural environment where – as the above-mentioned reference to its tacit dimension underlines – it is directly relevant for action. In order to get a more structured picture, local knowledge is not uncommonly considered as comprising two different yet mutually complementary spheres of knowledge: While on the one hand, ‘knowledge’ is often referred to as the fixed and structured component that usually can be talked about, ‘knowing’ on the other hand, designates a more fluid process and is therefore more connected to the performative perspective. In other words: A distinction can be made between knowledge in the sense of *that* which is known, and knowing in the sense of *how* something is known<sup>357</sup>. Moreover, the term local knowledge not only refers to the – both implicit and explicit – cognitive patterns underlying local peoples’ actions, but also refers to materialized forms of cognitive processes such as special tools and equipment, locally bred and cultivated plants, technical structures and field layouts or social institutions. Thus, it is not merely empirical evidence that determines the validity of local knowledge; rather, there exists a very ‘immediate’ side to it suggesting that, especially in marginal localities, knowledge is defined on the basis of its respective value of benefit<sup>358</sup>. Nevertheless, while local knowledge is highly pragmatic in its reference to practical, immediate and beneficial application in particular local contexts, it is also very important to realize that, at the same time, it is permanently in motion and constantly developing – a fact that carries the danger of paling alongside the rather immobile connotation of the term ‘traditional knowledge’ which ‘implies a rather static perception of knowledge with a low level of change’<sup>359</sup>. Local knowledge is fundamentally dynamic and changes not only through self-initiated innovation but is also modified in order to meet changing conditions and requirements. Although the term ‘local knowledge’ emphasizes the connection of knowledge to the relevant environment of a particular location - which comprises a wide range of different elements such as the physical environment, climatic conditions, people, institutions, the specific sociocultural background, particular locally available resources, techniques, equipment and so on - it is fairly irrelevant whether these elements are of indigenous origin or whether they have been ‘imported’. Local knowledge has the ability to travel and therefore of existing in different places. However, according to each particular location’s environment, it assumes specific meaning and relevance. Therefore, also local farmers’ knowledge in itself is neither static nor based on unilinear development but rather a product of historic evolution:

‘All knowledge potentially passes into the local pool, is blended with what is known to inform  
and explicit segments.

357 See: Borofsky, R. 1994, Barth, F. 1995

358 In addition to that, as discussed above, the validity of any kind of knowledge is negotiated within a socially accepted frame of reference .

359 Antweiler, C. 1998: 1



today's understanding and practice. Rural peoples' understanding of natural resource management issues is a mix of knowledge from various sources, which it is difficult to disentangle. (...) There is no repository of traditional indigenous knowledge, it is in constant process of change being continually influenced by outside ideas.<sup>360</sup>

From this perspective, also the multi-component farming system and local strategies of comprehensive health management are both contemporary products of historical change. They are modified and adapted to new conditions which are caused by both external and internal forces and changes. Moreover, they are an excellent example of what Schultze calls the 'knowings, skills and world view that have developed within a specific natural environment and cultural context and that are changing'<sup>361</sup>. Inevitably, this perspective on local knowledge as a fundamentally dynamic and highly context-sensitive 'process' which contains a considerable portion of tacit knowledge and, furthermore, is essentially built on its practical applicability, again draws attention to ethnological investigation methodology. Already the above explained finding that any kind of knowledge is, as a rule, generated and negotiated within different cognitive and sociocultural contexts where, as a result of the latter's respective rationality and logic, the knowledge is then 'performed' according to its own frame of reference, leads inevitably to the 'localization' of research approaches and processes. Therefore, from a heuristic point of view, the term 'local' does not merely refer to the basic qualities of knowledge, but also points to the twofold methodical dimension of the research object: At first, it contains strong evidence that adopting a holistic ethnological perspective on knowledge is not only reasonable but also possible. As a rule, knowledge can only be investigated on the assumption of it being both a processual entity as well as dependent on and determined by a particular ecological, economical, social and political overall context: research on local knowledge needs external investigation in order to make accessible 'everyday life' and its numerous non-explicit aspects; On the other hand, its empirical aspects are inextricably interwoven with practical work, extensive observation, reflexivity and effectiveness. Thus, research on local knowledge absolutely needs qualitative foundation in reality and thus equates largely with anthropological research. In this light, the narrowing down on an essentially local perspective is a methodical necessity. In addition to that, it contains the promise that ethnological research is possible since it builds on the discipline's fundamental strengths: the acknowledgment of 'the other'<sup>362</sup> and a

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360 Sillitoe, P.; Dixon, P. & Barr, J. 2005: 7

361 Schultze, U. 1998: 3, *translation mine*

362 Acknowledgment of 'the other' has always been a fundamental and unique characteristic of anthropological research and its confrontation with the strange and unknown in itself carries the fundamental purpose of breaking open assumptions of 'natural constants' in human existence. Through this perspective, the researcher will be able to take a step back; to put some distance not only between himself and his subject, but also between the vastness of reality and premature, constrictive statements. Needless to say that the attitude towards 'the other' must not merely be that of a positive, unbiased acknowledgment but needs to be complemented by mature and critical reflection in

microscopic and holistic perspective as well as reflexivity and a qualitative, contextual research.

#### **8.4.2 Modern Scientific Knowledge**

For all interviewees it was clear that there exist two different – albeit complementary – elements that constitute the basis of organic agriculture. For them, local farmers' knowledge is the 'basic principle' while western scientific thinking provides a comprehensive background understanding which is needed in order to come up with effective modifications. At this, scientific understanding does not only serve to add effective innovations to local agricultural techniques, but is also seen as being essential for the very understanding of the latter. However, mechanisms of purposefully screening, selecting and recombining individual pieces of information are also being applied by local farmers who are not resorting to western scientific knowledge. Methods of selective breeding – which over the millennia have brought forth thousands of landraces, each of them highly adapted to specific local and regional conditions - are an excellent example for effective native innovation. This indicates that the relationship between Western science and local knowledge is actually quite complex, the number of discussions on the subject is enormous, the related literature vast and difficult to oversee. The statements of Navdanya's employees, however, provide grounds for suspecting that 'science' and farmers' local knowledge, are not merely somewhat complementary concepts, but that, moreover, there happens some kind of 'blending' or 'pooling' of the two. In order to cast more light on this assumption and the possibly underlying processes, it is necessary to first of all take a closer look at what is actually meant by the term 'science' and 'scientific knowledge' and whether it can be useful within the context of this analysis.

It is noticeable that 'science' is quite often referred to as 'Western science' - a choice of words which is usually employed in order to put an emphasis on the fundamental cultural disparities between their underlying ontological and epistemological concepts. The weakness of this choice of term is quite apparent and lies in its all too clearly underlined asymmetry - which is why it is often used for the purpose of starkly contrasting rather sensitive or emotionally charged matters. Moreover, even it is not exactly wrong, at least the term 'Western science' is quite oversimplifying in that it is entirely oblivious of the fact that science, in the general sense of systematic knowledge, has never been uniquely western. On the contrary, a great number of cultures produced large bodies

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order to gain vital and meaningful insights. Thus, the anthropological perspective derives its essential strength from pointing to difference and diversity rather than homogeneity for the sake of theoretical consistency. The appreciation of 'the other' is the anthropologist's constitutive methodical key instrument of understanding. In this light, therefore, much rather than getting lost in discussions on the validity and defensibility of a pluralistic approach, it seems much more promising to follow processes of social constitution of knowledge, thereby highlighting its discursively constructed character.

of systematic knowledge, some of them a long time ago. Moreover, as explained in detail above, all knowledge systems from no matter what sociocultural background, have 'localness' in common. They produce knowledge according to locally validated and accepted frames of reference, involving a particular selection of theories, cognitive repertoires, resources, instrumentations, practices and so forth. For this reason, it appears more appropriate to link the term 'science' first of all to temporal and only secondly to spatial specification. This means that it makes more sense to talk about 'modern science', thus acknowledging it to be a relatively recent form of knowledge production that codeveloped with the historical period of industrial capitalism. Furthermore, contrary to the restrictive definiteness and weightiness of the term 'Western', the adjective 'modern' arouses associations of complexity, processuality and interconnection that are more helpful in shifting attention towards heterogeneous 'assemblages' of knowledge.

There have been many attempts to work out and clearly define the boundaries that make clear distinction between local and modern scientific knowledge<sup>363</sup>. The most prominent of these attempts locates the main differences within modern science's methodological and epistemological basis. It provides the ground for the usual stereotypical understanding of modern science which is supported by a somewhat imperialist position, claiming that scientific knowledge is unique in its rationality and systematization. From this point of view - which often is still dominant today - at the core of modern scientific analysis stands the emotionally detached scientist who makes detailed observations of natural mechanisms and processes that are 'out there'. Assuming science to be rational and objective in character and essentially reductionist, experimental and empirical in its operating procedures, this perspective often associates modern science with the searching for and the extension of human control over this 'out there-ness'. As a consequence of this ultimate purpose, the necessity of analyzing nature in a detached, systematic way on the one hand yielded the highly differentiated categorization of knowledge into various disciplines and subdisciplines; on the other hand it made it imperative to create an overall framework of universal theories. It is in this light that many times, modern science has come to be understood as the quest for universally valid knowledge<sup>364</sup>. Kloppenburg, for example, argued that the major approach used to produce scientific 'facts' was Cartesian reductionism or, more specifically, the process of '(...) breaking a problem down into discrete components, analyzing these separate parts in isolation from each other, and then reconstructing the system from the interpretations of the parts'<sup>365</sup>. Also the above analyzed interviews seem to indicate that scientific knowledge somehow provided the researcher with a heightened ability of breaking down the phenomena under observation into more easily 'examinable

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363 Comprehensive overviews on the subject can be found here: Schultze, U. 1998, Turnbull, D. 1997

364 On the development and premises of modern science see also: Murdoch, J. & Clark, J. 1994

365 Kloppenburg, J. 1991: 530

pieces'. According to DeWalt, 'science searches for knowledge that does not change depending on the context (i.e., is immutable), thus it should be possible to easily relocate knowledge from the specific circumstances in which it is created to other contexts (i.e., make it mobile).<sup>366</sup> As a result, scientists do know a lot about very special and limited sections but at the same time become very knowledgeable on the principles and mechanisms on which things work and they can make very selective use of their knowledge. According to him, while local knowledge is usually not only epistemologically bound to real-life practices - which means that it can only be understood with reference to the situation in which it is to be applied - it also fundamentally aims at functioning within this frame. Modern scientific knowledge, on the other hand, although being much more context-sensitive than is generally assumed in its formation, as a major objective seeks to produce transferable information that is more general in scope.

However, according to the above explained considerations from the field of the sociology of knowledge, any form of knowledge is fundamentally embedded within particular sociocultural contexts that are substantial for both its generation and social acceptance. While this insight is easily accepted in the case of local knowledge, the fact that knowledge derived from modern science, too, is informed and shaped by the social structures, values and objectives of the society of which it is a part, is still a matter about which there is much discussion<sup>367</sup>. From this perspective, like any form of local knowledge, modern scientific knowledge, too, is the outcome of specific cultural and historical interactions. It is subject to social mechanisms, institutions and influences and thus fundamentally value-laden. These insights made a significant contribution to the 'demystification of science' - a process that began in the early 1980s as Bonß's and Hartmann's volume of the same title indicates<sup>368</sup>. In its wake social theorists increasingly asserted their opinion that science was merely one amongst many ways of knowing about the world since, as Webster notes, '(...) scientific methods and practices could be analyzed to show how science is 'achieved' in much the same way as other kinds of knowledge'<sup>369</sup> and was thus attacked for its mechanistic models and reductionist methodology, in short: its highly dominating tendency of setting the epistemological standard. It becomes obvious that modern scientific knowledge, too, is not merely

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366 DeWalt, B.R. 1994: 124

367 The decisive push for this idea came from David Bloor's 'strong programme' in 1976 where he argued in favor of the social construction of scientific knowledge and thus called for a radical extension of the sociological field of work. Rejecting the highly normative philosophy of science prevailing at that time, he claimed all scientific knowledge to be socially constructed which in turn meant that sociology was able to provide adequate methodological tools for its study: 'Can the sociology of knowledge investigate and explain the very content and nature of scientific knowledge? Many sociologists believe that it cannot. (...) I shall argue that this is a betrayal of their disciplinary standpoint. All knowledge, whether it be in the empirical sciences or even in mathematics, should be treated, through and through, as material for investigation.' (Bloor, D. 1976: 1)

See also: Knoblauch, H. 2005

368 Bonß, W. & Hartmann, H. (eds.). 1985

369 Webster, A. 1991

an objective category, hovering above things, detached from all subjective influences. It is by no means homogeneous and must not be understood as a fixed category, based on unshakable methodological and epistemological premises; rather, it is highly complex and subject to all kinds of external forces, patchiness and heterogeneity and it is in this light that already in 1977, commenting on the various failed attempts of establishing clear criteria for demarcation between science and non-science, Kulka wrote: 'The history of attempts to delineate scientific methodologies is littered with the debris of shattered theories'<sup>370</sup>.

It becomes clear that there doesn't exist a clear-cut dichotomy: Just as local knowledge is not static or secluded, modern science isn't context-independent, either. Both forms of knowledge are subject to external influences and changes as well as individual actions. In this regard, the dichotomous categorization of local knowledge as being concerned with the concrete and immediate needs of local peoples' daily livelihoods while modern science attempts to produce alienable information and general explanations and is thus removed from everyday life, is ill-founded<sup>371</sup>.

#### **8.4.3 The Relation Between Local Knowledge and Modern Scientific Knowledge**

While most consideration concerning the relationship between local and modern scientific knowledge delve deep into discussions on the question of disparity between both forms of knowledge, for the purpose of the present study, it seems much more promising to first of all search for possible similarities and overlaps. In this view, what is of particular interest, is what Levi-Strauss appropriately called 'the science of the concrete'<sup>372</sup>, which for him meant that both local knowledge and knowledge derived from modern science are similar primarily in that they are essentially based on observations of the outside world. This in turn means that both have an empirical basis that is intersubjectively accessible and communicable<sup>373</sup> and that, basically, both 'science' and 'local knowledge' describe 'processes of the generation, communication and implementation of knowledge'<sup>374</sup>. According to what has been explained in detail above, this approach does not contradict the fact that both knowledge systems may well be based on their respective particular logic and rationality: While they both work according to basic empirical

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370 Kulka, T. 1977: 283

371 In his article on 'indigenous and scientific knowledge', Agrawal writes: 'It is something of a contradiction - though an unavoidable one - that the same knowledge can be classified one way or the other, depending on the interests it serves, the purposes for which it is harnessed, or the manner in which it is generated.' (Agrawal, A. 2004: 5)

372 See: Levi-Strauss, C. 1966: chapter 1

373 '(...) thirst for objective knowledge is one of the most neglected aspects of the thought of people we call 'primitive'. Even if it is rarely directed towards facts of the same level as those with which modern science is concerned, it implies comparable intellectual application and methods of observation.' (Levi-Strauss, C. 1966: 3)

374 Schareika, N. 2004: 30, *translation mine*

observations, their interpretation might well be premised on a quite different, particular logic, rationality or epistemic frame of reference. However, due to its extensive presence, many times modern science establishes itself as a hegemonic power of interpreting reality. Even if the underlying epistemological model is not accepted - or perhaps not even known - very frequently modern scientific knowledge permeates local knowledge complexes to an extent that locally modified forms of scientific concepts are becoming common property. In the course of this process, the conventional and dominant local ideas that had prevailed until then, are being displaced to varying degrees. Neubert & Macamo<sup>375</sup> distinguish three different results of this encounter: First, the continued parallel existence of both different frames of reference which occasionally may be bound to particular social environments. This also implies the specific allocation of scientific and local interpretations to particular spheres of life - the so-called 'code-switching'; Second, the merger of both forms of knowledge, including the blending of their underlying frames of reference<sup>376</sup>. Thus, this process yields a new kind of knowledge, supplied by both sources whose respective influence, however, cannot be unequivocally classified. And third, the incorporation of certain elements from one frame of reference into the other while the latter's intrinsic logic of explaining and interpreting reality remains largely the same. While these categorizations are probably being too theoretical and rigid to capture the complexity of the actual mechanisms and effects, they are still helpful in understanding the latter on a more sophisticated level through providing valuable impulses. As is so often the case, also here, the truth seems to lie somewhere in between.

An important fact which is revealed through the statements of Navdanya's employees is, that although farmer's local knowledge and modern science are perceived as being two clearly distinct categories *in theory* - that is when one distinctively reflects on them -, it seems to be relatively unproblematic to intermingle them *in practice*. Against this background, since anyway there have been already far too many attempts to forever mark or fix knowledge as 'local', 'indigenous' or 'scientific' rather than investigating the manifold creative interactions and heterogeneous intermingling processes between the two. Therefore, rather than remaining locked into the reductionist perspective of putting modern scientific knowledge solely in the representationalist idiom's corner while, at the same time branding local knowledge with a performative idiom, particularly from an ethnological point of view, it makes much more sense to 'look at the "mechanics" of intermingling of knowledges and complex relations (...)'<sup>377</sup> as Antweiler puts it.

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375 See: Neubert, D. & Macamo, E. 2004

376 Concerning the mutual penetration of religious concepts and beliefs, this process is usually classified as 'syncretization'.

377 Antweiler, C. 1998: 482

From this perspective, the notion of the need that knowledge has to be studied 'in action' - at particular times in particular places, seems quite plausible. Also, this perspective simply reverses the conventional view of the scientific endeavor: While the latter sees science as the understanding of universal laws and principles, the former sees science as the detailed study of local phenomena whose thorough observation subsequently leads to a broader understanding of the latter. Therefore, as a general rule, in order to allow not only for the meaningful interpretation of existing knowledge but also for the in-depth investigation of processes of overlapping, interweaving or reassembling that underlie the development of new knowledge, it makes sense to study the reality of concrete people in particular locations. It is in this light that Long speaks of 'actors' knowledge repertoires' which are the result of 'knowledge encounters' entailing a 'fusion of horizons' in which the two get mixed up together<sup>378</sup>. The central issue, then, is about the precise form of the coexistence and amalgamation between the different forms of knowledge and the relative status of their components. Long's point of view is also quite characteristic for the trend towards research on knowledge which is fundamentally based on action-research. The latter regards knowledge as dynamic and context-sensitive process. It is not produced by institutions or, in more general terms, by structure, but instead arises out of the actions of individual actors. This fundamentally practice-oriented approach was mainly initiated by sociologists in the late 1970s and shortly thereafter also was taken up by ethnologists<sup>379</sup>.

### **8.5 Towards an Interstitial Knowledge Space: Broadening**

Over the course of the fieldwork on this dissertation, it has become increasingly clear that adequate information must be considered a key resource for the successful implementation of organic agricultural production. At the same time, the knowledge complexes underlying the various local and 'indigenous' management practices which were found to exist in the area in question, are far from being equatable with knowledge on organic agriculture and the respective organic management practices: While on the one hand, admittedly, organic agricultural knowledge often arises from the attempt of bringing it closer to or make it compatible with prevailing local knowledge systems, it is not at all unlikely that there are indeed overlaps between the two. At least, this is true for the here investigated context where local strategies of comprehensive health management and Navdanya's organic knowledge actually revealed to be quite close together<sup>380</sup>. On

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378 '(...) knowledge (...) emerges out of processes of social interaction and is essentially a joint product of the encounter and fusion of horizons.' (Long, N. 1992: 27)

379 See, for example: Bourdieu, P. 2002, Giddens, A. 1979

380 This was found to be the case for a number of basic principles – such as the stabilization of important local resources or the recognition of the basic mutual connection between various local elements. For a detailed

the other hand, however, since farmers are unable to arrive at the necessary knowledge through their own rationality and wealth of knowledge, there can be no disputing the fact that considerable proportions of the relevant knowledge on organic agriculture is actually transferred to farmers from outside their local communities via external intervention agencies. Local farmers themselves consider this knowledge not only to be of vital importance to effectively implement organic agriculture, but also to be extrinsic. Moreover, their statements provided substantial reason to assume that there existed a specific point of intersection where farmers' knowledge underwent some sort of qualitative extension. It was thus assumed that, in the context of the present research, Navdanya played a crucial role in this intersection – also with regard to the fact that the organization operates an extensive network comprising not only Indian farmers from various parts of the country, but also sympathizers and supporters from all over the world. It was thus presumed that Navdanya constituted the nodal point and provided the space where different knowledge assemblages could be brought together, negotiated, linked and reworked and in which the respect knowledge thus was produced -which was the reason why the key focus of interest was placed on the statements and explanations of Navdanya's employees in the first place.

From the above analyzed interviews, however, it has become apparent that the organic agricultural knowledge that is being generated and disseminated by Navdanya, is by no means easily traceable let alone clearly locatable. Much rather, the statements of all respondents indicated that the knowledge on organic agriculture and the respective management practices passed on to the farmers, were essentially 'constructed' through a process involving various factors - the latter being rooted within different spatial and temporal spheres. With each interviewee placing particular emphasis on certain aspects of the matter, it became clear that the talked about organic knowledge is, first of all, some kind of dense and quite complex agglomeration where different aspects of knowledge from various knowledge assemblages are combined and reworked and where varied priority is given to different elements. However, all those engaged in clarifying the matter agreed that the very fundamental aspect of organic knowledge was local farmers' knowledge. At this, the use of terms such as 'traditional', 'ancestral' or 'old generation's knowledge' was intended to emphasize its authenticity. Furthermore, everyone agreed that the first step was to actively collect these 'basic principles', the most important aspect at this stage being conversations with farmers, preferably older, more experienced and more knowledgeable ones. It was also asserted that this activity of collecting farmers' traditional' knowledge was not restricted to certain geographical or cultural backgrounds, but in principle extended all over the country, including many different

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description see chapters four and five.



sources and contexts. This finding in turn points to the particular importance not only of localities, but also of the transfer of knowledge: All respondents agreed that the collected information was taken out of its original context in order to be transferred into different ecological and social conditions – maybe even widely diverging climatic scenarios – since it was Navdanya's ambition to generate and disseminate organic knowledge that could be circulated on the organization's network all over the subcontinent. This naturally means that this knowledge needs to be reworked in order to become potentially applicable within different socioecological contexts.

In addition, there was found to be general consensus among all interviewees that the basic ingredient of farmers' knowledge was merely one side of the coin. Actually, they all maintained that their activities were essentially based on taking into account two different knowledge systems, namely modern scientific thinking on the one hand and farmers' local knowledge on the other. At this, while the former is generally understood to be of high practical value in its original context, the latter is seen as the 'connecting piece' that helps bridging the gap between different socioecological backgrounds. Also, while local farmers' knowledge is usually associated with authenticity, the respondents commonly used modern scientific knowledge to furnish the former with an air of respectability and validity. On closer examination it was also found that a kind of 'ecological particularism' accounts for both modern scientific and local farmers' knowledge. Both knowledge complexes are fundamentally social products and the fact that any body of knowledge is best viewed as a heterogeneous assemblage of various informational elements strongly points towards a 'localized' understanding – hence the need for qualitative in-depth research in order to uncover their full complexity. Regarding both types of knowledge as dynamic and context-sensitive processes again points to individual actors and not structures being mainly responsible for social action. At the same time, however, social action is hardly ever completely free but is usually (re-)bound towards social structures. This actor-oriented view on knowledge allows for the observation of knowledge assemblages within very particular, very concrete situations. What actually happens is the creating and organizing of new knowledge within a particular, definable knowledge space. The latter can not necessarily be narrowed down to a particular physical locality but nevertheless stays 'local' in terms of concrete actors' activities and specific socio-historical situations.

From a more methodical perspective, modern science provides Navdanya's employees with a comprehensive background understanding of theoretical mechanisms and concepts of the local methods and techniques they collect from farmers. Through systematically breaking down these complex interrelations into separate components, very localized knowledge assemblages can be 'translated' and thus be 'made visible'. It has been shown that the process of transforming local farmers' knowledge into organic management practices first of all requires the former's selective

dismantling into different components, followed by the screening for their potential application. Thus, during this stage of the knowledge-generative process, employing a science-based perspective is considered the adequate means of not only acquiring a profound and detailed understanding of these individual components but also - through translating them into modern scientific language - of the potential ways in which they may be effectively reconfigured or combined with other elements from different backgrounds. It provides a working base which makes selective innovation possible and allows for the removal, dissection and reworking of individual elements that are normally deeply anchored within local contexts. At this, it is thus not so much the production of context-independent information which is of primary importance, but rather the focus on the systematic disentanglement of knowledge complexes, thus eventually providing the researcher with a great array of options for the potential application of specific constituent elements. What happens here might be understood as some kind of two-pronged broadening process where the term 'broadening' implies an integrative effort with the purpose of taking more variables into account, such as more methods, more or extended viewpoints or perspectives, but with a strong sensitivity to the underpinning of the units that are taken into account<sup>381</sup>. Furthermore, this 'broadening' goes hand in hand with purposefully applied 'reconfiguration' - a process that in more detail describes the just mentioned 'integrative effort'. Through 'translating' farmers' traditional knowledge into modern scientific 'language', the former can be transferred into new contexts where it then can become applicable. Hereby, the validity of the respective frame of reference is expected to be of a quite different nature: While local farmers' knowledge is considered to be applicable only within very narrow ecological and cultural contexts - which means that it can be performed only within a particular local frame of reference - its reworking on the basis of modern scientific thinking is expected to considerably broaden the field of application.

Drawing on the reflections of Turnbull, what arises from this working method is an 'interstitial space', a third space between local knowledge and modern science '(...) in which local knowledge traditions can be reframed, decentred and the social organization (...) can be negotiated'<sup>382</sup>. Therefore, for the purpose of making visible different spheres of influences and pools or assemblages of knowledge, a dichotomous categorization is much too constrictive to reflect the actual dynamics and multifaceted influences that energize the generative process in question. Much rather it makes sense to talk about a knowledge-generative process within an interstitial knowledge-space where different elements from different knowledge assemblages and spaces can be pooled, intermingled and reworked.

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381 Knutsson, P. 2006: 92

382 Turnbull, D. 1997: 560

## 8.6 Towards a New Domain of Knowledge: Reconfiguration

In order to come up with a meaningful working foundation to investigate in detail the knowledge space where organic management practices are generated, it was considered reasonable to follow the insights of a constructivist sociology of knowledge. It was thus suggested that, as a general rule, all knowledge systems are essentially contextual in character which, in other words, means that what they have in common is a certain 'localness'. Furthermore, they should be understood as heterogeneous assemblages of various elements, combining particular practices, theories, historical developments, people and objects through the complex intermingling of different pools of knowledge and information. Moreover, these assemblages are not only heterogeneously constituted, thus bringing together vastly different components from different localities and points in time, but are also of procedural character and thus permanently shaped and modified. As a consequence, even locally highly restricted knowledge is contemporary in character. From this perspective, it may be argued that all knowledge traditions are fundamentally spatial in that they link these elements through actions that are performed at particular sites through particular people with particular skills using particular tools and so forth: Whether the respective knowledge is generated inside a laboratory by a group of scientists who conduct specific experiments on which they employ specific cognitive premises and material objects; or whether it is formed by local farmers in a small mountain village who'd utilize their distinctive skills and courses of action - in each case the generated knowledge is the collective work of the knowledge producers in a given knowledge space. The resulting knowledge must be considered as a fundamentally processual construction of historical and social interactions that combines various frames of reference in various degrees. Moreover, it depends on particular modes of social perception, representation and performance. Although in today's knowledge-based economy, especially information units are increasingly perceived as being fluid and detached, there can be no doubt that the starting point for the analysis of any kind of knowledge is its concrete locality. It is precisely the mobile, fluid and changeable character of knowledge that calls for the investigation of its specific situatedness, for a spatialized perspective. Since knowledge is never monolithic and never uniform, the 'framing of knowledge' through investigating its representation and performance within a very specific locality turns out to be of vital importance.

From this spatialized perspective, there become visible particular 'domains of knowledge', each of them based on its specific logics and epistemologies and also characterized by the employment of particular strategies in order to create assemblages<sup>383</sup>. Through regarding processes of knowledge

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<sup>383</sup> Modern science, for example, employs a number of strategies to produce its knowledge assemblages: Standardizing techniques, writing and publishing articles in professional journals, building instruments, forming disciplinary societies, conducting strictly defined experiments - to name but just a few.

generation as the attempt of creating and stabilizing a particularly assembled 'knowledge-space', the usually very complex and heterogeneous blend of knowledge can be made visible. Seen in this light, any 'domain of knowledge' in the above explained sense, represents a quite specific knowledge system, implying that it is not merely an aggregate of isolated concepts, but rather is composed of an assemblage of interlinked concepts and their respective constitutive elements *at a particular place and time*. Thus, the term 'situated knowledge' is considerably expanded: Not only does it refer to the close relationship between local knowledge and particular empirical situations within which - as is commonly accepted - it develops its full potential but also does it point out a certain 'topography' providing the basic epistemological framework of understanding how particular knowledge-spaces are produced.

In this light, Navdanya can be identified to provide the preconditions for the generation and utilization of an interstitial knowledge space where different knowledge assemblages are utilized, pooled and reworked. The here generated organic agricultural knowledge may well be seen as a particular domain of knowledge which, however, must not be understood as functioning according to universal principles of method, logic or practice, but as an essentially social activity involving not only multiple various (historical) influences but also a great number of individual actors. Not only is it embedded in particular cognitive traditions but also does it operate on the basis of various local preconditions, values, judgements, negotiations and includes both cognitive and practical concerns as well as economical, ecological, political and ethical interests. As part of this realization, it has become apparent that Navdanya's individual employees are much more involved into the creation of the respective organic knowledge than it would appear at first glance. According to their individual statements, their own contributions include at least three major innovative steps: first the splitting up of the initial body of farmers' knowledge, originating from a particular local background, into different parts, components, principles and ideas<sup>384</sup>; second the latter's reworking through combining and enriching it with various other elements from different backgrounds, stripping it off certain impractical, superfluous or inadaptible attributes or reconfiguring it in some other way; and then, finally, introducing the newly produced organic agricultural knowledge into different scenarios, including its reintroduction into the very socio-ecological context the basic

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384 At this, since local knowledge assemblages are essentially based on the practical applicability and functionality within a very specific local environment and, furthermore, laden with and grounded on particular local values and ideas that are often tacit, it is only through external investigation that these assemblages can be deduced. Quite interestingly, it seems as Navdanya's employees' roles here were not all that different from the interculturality of anthropologists: Since the organization's employees are dealing with information gathered through a continually growing pan-Indian network which also transports global influences, a good deal of the collected know-how does not automatically reveal itself. They thus assume the status of what Turner called 'liminal personae', which might enable them to reflect on both ways of knowing.

See also: Turner, V.W. 1969: 95

material had originated from. Although there doesn't exist a comprehensive awareness of this knowledge-generative process, the fact that all of the interviewees referred to this complementary component as 'innovations', 'improvements' or 'modifications', indicates that they are very well aware of its fundamentally extrinsic quality. Furthermore, they explicitly linked this additional aspect to 'practical work' in the form of 'research', 'studies' or 'experiments', thus clearly delimiting it from the somewhat finished and readily-available farmers' knowledge. All of the above-mentioned steps require high levels of individual action and creativity and thus, it is very important to note that organic agricultural knowledge is strongly influenced by individual elements – a fact which probably largely accounts for its complexity. Whether during the initial stage of collecting information from local farmers, while locating innovative potentials of traditional methods, while planning the realization of these potentialities, while practically experimenting or simply when critically assessing the results in order to 'see if it works' - individual capacity to act definitely plays a role at many important stages during the knowledge-generative process. Furthermore, the whole issue of individual innovative capacity is being linked with very practical activities – from first-hand observations, hands-on experiments, the build-up of individual experiences through 'working with the soil' up to the development of some kind of 'farmer's instinct' resulting from years of practical experience<sup>385</sup>. This insight is further strengthened by Dr. V. Bhatt's thoroughly processual perspective of Dr. V. Bhatt who points out the essential significance of the individual in processes of knowledge generation, suggesting that farmers' knowledge itself - which is usually too readily regarded as a complete and fixed variable - is resulting from constantly on-going processes of innovation, based on farmers' individual ability to observe, reflect and improve.

From this perspective, what is commonly labeled and handed down to farmers as 'organic agricultural knowledge' is really a particular domain of knowledge, produced through the amalgamation of various heterogeneous components within the interstitial knowledge space provided by Navdanya. At this, the critical and constructive 'reconfiguration'<sup>386</sup> of different components of local farmers' knowledge in order to 'adjust' them to socio-ecological conditions that are possibly vastly different from their original context, constitutes a key factor for the generation of organic management practices. It is indeed crucial to realize that in the here

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385 See particularly the statements of D.S. Negi in chapter 8.2.1

386 Since it was found that neither knowledge itself nor its corresponding – socially constructed and negotiated – frame of reference is ever uniform and monolithic but that, on the contrary, both are indeed subject to permanently ongoing changes, the term 'reconfiguration' is given preference to the term 'synthesis'. While the first carries has a connotation of essential activity and processuality, the latter refers more to the final outcome, the finished product of the merging process, thus carrying an overly static undertone.

investigated scenario, the very knowledge base underlying organic agriculture is quite fundamentally constructed, with various elements from different knowledge assemblages being pooled, combined, intermingled and reconfigured.

Moreover, it was found that major parts of the organic agricultural knowledge as well as the organic management practices which are generated and disseminated by Navdanya are actually essentially influenced by individual agency and creativity that needs to receive considerably more attention than has been the case in the past: As was shown above in detail, the process of generating the domain of organic knowledge is essentially based on individual actors' knowledge repertoires, motivation and creative actions. At this, the innovators are sometimes quite conscious of their own creativity, showing not only great personal commitment in gathering already existing knowledge but also in 'applying one's own mind' to the constructive and purposeful pooling, reworking and modification of the latter. Especially the 'innovative thrust' towards the generation of organic management practices is to the greatest extent based on the individual innovator's creative reflexivity and the subsequent motivation to carry out practical experiments. Moreover, in order to support the aspect of individual contribution even more, it turned out that these experiments are not merely conducted on a simple trial and error basis where the outcomes are largely coincidental and unforeseen, but are rather targeted and carried out according to certain preliminary considerations. In general, the whole process is based on mindful observation, reflexivity, creative thinking, coordinated action and practical work, that is to say: on informed decision-making - from selecting promising external information to imagining sensible modifications to effectively and purposefully putting them into practice. It is because of this - usually greatly underrated - individual momentum in the generation of organic knowledge that the ultimate outcome is never essentially uniform but always based on some individual innovator's respective emphasis of different factors or the intensity of his 'shopping' in various domains of knowledge and the corresponding knowledge pools. Therefore, rather than pointing to a well-structured whole of interlinked variables in the form of a 'synthesis', the here analyzed knowledge-generative process essentially rests upon the individually creative - and often quite far-reaching - reconfiguring of these variables. In this regard, the emerging domain of organic knowledge can be seen as a rather inhomogeneous scheme which, through processes of broadening and individual reworking, nevertheless obtains some systemic value as a particular domain of knowledge: The aggregated organic knowledge passes off as more than its subparts, exceeding them both in value and function. It is made up of more than its respective knowledge assemblages and is fundamentally constructed. Within the interstitial knowledge space provided by Navdanya, there emerges a new, contextualized domain of organic agricultural knowledge which is then passed on to local farmers in the form of organic management

practices. At this, undoubtedly, the importance of this factor of individual innovative contribution to the whole complex of organic agricultural knowledge is greatly underestimated and usually gets lost in the delusion of uniform global standards.

### **8.7 The Fluidity of Organic Management Practices**

Disseminating knowledge on organic management practices is commonly understood to be a key activity of the involved development agencies and organizations. Being commonly linked to local indigenous knowledge and practices, it is maintained to be 'the capital of poor farmers' and a crucial element in their efforts to control their own agricultural production, resources and, ultimately, lives. Today, knowledge-based development also increasingly promises a more sustainable and eco-sensitive agricultural approach. As was explained during the opening chapters of this study, this applies in particular for large parts of the Indian scenario where decades of massive overuse of Green Revolution practices have widely contributed to the erosion of local resources, thus threatening the livelihood basis of millions of marginal rural farming households. Grounding these farmers' basis of existence on more sustainable, knowledge-oriented agricultural model rather than on a growth-oriented approach which depends on the usage of chemically-based external inputs, is a major idea behind the promotion of organic agriculture in the here investigated context and therefore the accompanying organic practices ' (...) represent a shift in paradigm, from input-dependent, exogeneously focused production systems to ones that are soil-based and endogenously focused. They adopt an ecological perspective that appreciates the interactions among organisms, seeking to maximize positive synergies and to control or eliminate negative effects<sup>387</sup>. In addition, these practices are commonly maintained to be based on traditional or indigenous bodies of knowledge, which implies that local farmers should have no problem in implementing them since, as a matter of fact, they are anyway familiar with them. So, being essentially based on people's knowledge, it at the same time fundamentally encourages people's involvement and participation – an argument which is an integral element of the recent rural development paradigm<sup>388</sup>.

However, contrary to what is commonly maintained, organic management practices are only partly based on local farmers' knowledge and already existing methods and techniques respectively – as was explained at length in the last chapter. Much rather, they are fundamentally constructed,

387 Uphoff, N.; Esman, M.J. & Krishna, A. 1998: 367

' (...) there is a greater focus on endogenous (local) assets and knowledge and less of a focus on exogenous investments and transfers.'

OECD. 2006. The New Rural Paradigm: 60

388 See chapter 1.

involving elements from different knowledge assemblages and incorporating elements which might have originated in an altogether different domain of knowledge. It is the main concern of this chapter to break the myth that organic management practices and marginal farmers' local knowledge were one and the same thing, and that this congruency made them the perfect tool for actor-centered bottom-up development. In fact, the development of Navdaya's organic management practices has been shown to be subject to a rather long and complex development process which involves knowledge elements from a multitude of social, cultural and ecological backgrounds and, moreover, is based to a large extent on individual motivation, reflexivity and creativity. From this perspective, Behera is quite right in stating that, although the 'rural development paradigm in international discourse is evidently new in its emphasis in approaches to rural development (...) the core-periphery issue still remains dominant'<sup>389</sup>. As was revealed in the present chapter, also Navdanya's efforts of incorporating local knowledge into their organic management practices still embody a centre-outwards approach and are thus clearly indicative of the tendency of a top-down flow of ideas: Not only does the organization provide the 'network space' for the formation of adequate knowledge and practices, but also are its employees quite deeply involved in the generative process. However, it must be acknowledged that the process of knowledge generation examined above also includes flows of information and knowledge in the other direction, that is from local farmers to Navdanya's extension workers. It is however of fundamental importance to realize that it is not Navdanya's first and foremost intention to supply farmers with fixed and inflexible means of increasing their agricultural production. Much rather, as was presented at length in chapter four, the organization aims at providing assistance to local farmers through a comprehensive concept of various key measures. At this, particular emphasis is placed not merely on the development of profitable agricultural production and subsequent marketing of the produce, but also on the essential issue of actively integrating local farmers, their households and even whole village communities into numerous activities and processes at different stages. In this connection then, although there was revealed to exist a fundamental core-periphery relationship between Navdanya and the farmers who have joined the organization, the knowledge on organic agriculture which is passed on to the farmers must primarily be understood as a resource, providing local farmers with the potential of accessing and unfolding their own capabilities. In an ideal situation, what is transferred to the farmer through organic management practices are not readymade pieces of technology, but rather a knowledge-based framework which leaves room for self-management and the incorporation of local cultural elements of agricultural production and livelihood strategies. Apart from providing practical support to farmers, for example during the transitory period between

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389 Behera, M.C. (ed.). 2006: 21



commercial and organic agricultural production, the forwarding of organic management practices aims at opening up space in individual decision-making and promote the expansion of farmers' individual capabilities.

The following chapter is thus intended to show how organic management practices must not be understood as static and monolithic formulas which must strictly be adhered to, but that, quite on the contrary, they give substantial scope to individual farmers in terms of using and unfolding their very own motivation and creativity. Since they are essentially constructed, generated through processes of reconfiguring different assemblages of knowledge from different knowledge domains, these practices exhibit fluid boundaries and transitions. Unlike chemically-based external inputs which operate in a predictable manner, knowledge-based innovations show a much higher transformative potential and 'materialize' in various different ways. It will also be explained how, in the course of this implementation process, local farmers' individual contributions play a much greater role than is commonly understood, thus putting somewhat into perspective the core-periphery statement made above.

Inspired by M. de Laet's and A. Mol's highly interesting investigation of a certain piece of technology in particular local contexts<sup>390</sup>, also with regard to the theoretical considerations underlying this study, it might be stated that the knowledge on organic management practices as it is generated and disseminated by Navdanya, represents a 'standard' which is hardly ever strictly adhered to. Rather is it the case that the interpretation and implementation of these practices produce various fluid – often not just regionally but to a greater degree individually different - configurations of organic agriculture. At this, the intense focus on knowledge and innovation underlying these configurations, gives the latter an all the more fluid character and provides ample room for different interpretations, implementations and manifestations of local organic agriculture. Therefore, while some of the management practices are quite essential, others may turn out to be substitutable and still others might prove quite superfluous within the different social and environmental scenarios they have been distributed in. In addition, even if some elements are transformed, substituted or even entirely set aside, this does not mean that 'the whole' will necessarily fall apart entirely. This is all the more true since also the criteria for the success of organic management practices are by no means clear-cut. Instead, as was shown in previous chapters, the evaluation of the effects and outcomes of organic agriculture is rather fluid, too, and comprises many different motivations, hopes and objectives on various levels. Especially in the here investigated local scenario, context questions of agricultural success are relative, not absolute – as was pointed out particularly in chapter five.

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390 De Laet, M. & Mol, A. 2000

In this connection, the last section of this study is intended to further investigate organic knowledge, introducing some of the most prominent management practices and then following them right up to their implementation through local farmers and the related activities, hereby revealing translation processes which are characterized by great activity and innovativeness on behalf of individual farmers. It will be shown how farmers' individual capabilities come to play a decisive role in the practical implementation, transformation and further development of organic management practices, thus supporting the latter's substantial fluidity. Thus, it will become clear that local farmers are not merely at the center of the adaptation and diffusion of innovations in the form of organic management practices, but that they also have a major influence on how these innovative practices themselves are locally implemented, used, modified, optimized and transformed. At this, it will also become apparent that, again, access to and operating with knowledge plays a central role in these processes – a fact that once more points at the fundamental connection between information and an actor-centered perspective on rural development.

## **9. Following organic management practices**

### **9.1 Individual Farmer's Capability II**

'Possibly, the greatest impact of organic agriculture is on the mindset of people.'

(Ramesh, P.; Singh, M. & Subba Rao, A. 2005: 566)

When on a visit to mountain villages of Uttarkāśī district, through paying particular attention on the number of compost heaps and pits spread within the villages of the area and their surrounding lands, I like to think that I can guess whether there are many organic farmers here or not. Of course one will find considerable numbers of dung heaps in any of those villages since their economic basis are virtually exclusively grounded on agriculture and related activities; However, I cannot help the impression that organic mountain farmers indeed place much greater emphasis on the (re-)utilization of biomass than those who have opted for conventional methods of cultivating their fields - and that this situation is also reflected in the absolute number of compost heaps per mountain village. Although I never attempted to really confirm this assumption in precise figures, I found that especially organic agriculturists devote a great deal of their time to activities concerning the production of compost.

In chapter five it was expounded in great detail how it is especially mountain farmers in that region, who are concerned about the health and fertility of their fields' soil and why they closely relate the

latter to their own well-being. It is therefore the case that even conventionally-oriented mountain farmers are quite concerned about their soil's fertility – even if strategies of improving their field's health are severely limited to them. It is exactly for this reason that again and again, I get the impression that organic agriculturists are actually attaching more importance to their lands' fertility - although they might just be more familiar with a larger choice of relevant methods for achieving this objective. Whatever the case, the fact is that heaps of animal manure dominate any mountain village scenery - and probably even more so in villages with a high percentage of organic farmers. There is, however, an invisible, yet quite decisive difference between those heaps that cannot be established unless one takes a closer look at them. An employee of the 'Uttarakhand Organic Commodity Board' in Dehrādūn even claims this to be the main difference between the two types of agriculture:

'(...) The difference is ...ah... we have been... talking about ah... quality...ahm...increase of nutrients in the compost in the ...in the biomass which the farmer is using. The farmer otherwise was using... ah... raw dung... and a lot of biomass which is... not... composted properly, it's just being used, you know. (...)

And ...ahm...the... material which is remains...in the cowshed...animal shed...the material which is then... with the dung and with cow-urine is brought out after an interval of three to four days...and it is heaped. ... It is heaped on... on the surface of the ground ...and the men would dig ...ah... deep pits, and you know, they would go and dumpin the stuff in it. Now this would carry on all the time. And just before the time of their...the ...planting, people...the planting time, the men and the women would just dig...the stuff out...and they will just start dumping it as heaps like that on the ...na...on the agricultural land.

(...) And now the farmer will just dig this out. And it's got hard, it's got deep, undigested compost, it's got... in it, it's got all kinds of things, and then it is just heaped out. Most of it is just trash, it's not compost at all...<sup>391</sup>

The statement explains very well the major difference between a dung heap and a compost heap and is much more than just 'development talk', since a good many local farmers roughly state the same thing: Many times, a regular dung heap is considered some sort of waste disposal site that can only marginally contribute to the farm's overall productivity; A properly kept compost heap, however, must be seen as a major resource and a valuable tool not only for increasing output and efficiency but - even more fundamental - for providing the very basic prerequisite of effective agricultural

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391 The statements cited here have been excerpted from the interview, conducted with B. Shaw on November 29<sup>th</sup> 2010. For the complete transliteration see digital medium.

production. In Navdanya's terminology, compost is often compared to 'prasād'<sup>392</sup>. In analogy to the concentrated spiritual potency that is contained within just a small piece of prasād and nevertheless has the power to fill the whole human body with the deity's blessings, also small quantities of compost are declared to be potent enough to substantially and positively effect an entire field.

Previous discussions provided detailed descriptions of the interrelatedness between 'cultivated' and 'uncultivated' lands where, through managing and channelling the interrelated needs between livestock and land, so-called 'gober' - a mixture of dung, urine, bedding materials and fodder residues - is collected daily in order to gain maximum biomass output. It is the most important task within the scenario investigated here, and the practice of actively returning biomass to the land in order to replenish the predominantly poor soils' content of micronutrients is executed daily and with imperturbable routine. However, as the above quoted statement makes clear, there exists a fundamental difference in quality between 'raw' animal manure and properly processed compost. More and more farmers in the area are well aware of this difference, irrespective of whether they have already converted to organic agriculture or not. Thus, the very first thing almost any organic agriculturist does when being asked about his experiences, is to demonstrate the quality of his composted soil. Nevertheless, even though mountain farmers in general are very conscious of their soil's health, there seem to be very few who actually have a deeper understanding of how to effectively keep the latter's fertility high. It is therefore indeed true that, based on the common notion that biomass has to be returned to the fields, most farmers would still simply dump their gober on heaps, in pits or even directly on their fields – even though they are aware that this method is largely ineffective. It is mostly due to external intervention agencies - such as Navdanya or the Uttarakhand Organic Commodity Board who promote organic agriculture and spread information on the subject - that today, most agriculturists in the region have become alive to the importance of effectively producing and spreading manure of a better quality. Most interlocutors - both farmers and employees of the promoting agencies - would agree that this situation is largely to be attributed to information which is passed on from farmer to farmer throughout the area. Word-of-mouth advertising dynamics still seem to be the most effective and best working way of spreading innovation.

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392 A material substance - usually an edible food - which in the course of a religious ceremony is offered to a Hindu deity or saint. It has to fulfill certain purity requirements and - apart from very few exceptions - is normally strictly vegetarian. Usually after the performance of a short pūjā, the offering is then viewed as being charged with the respective deity's blessings and subsequently redistributed to the donor. In contemporary Hindu religious practice however, it is typically not the previously offered food which is handed back to the donor but rather a symbolic substitute in the form of little sugar globules.

## 9.2 The Transformation of Organic Management Practices: Theoretical Impulses

The present chapter is going to deal with the modifications and transformations of the actual innovation itself – or rather, some selected organic management practices which have been introduced to local farmers via external intervention agencies.

It was discussed at length in chapter seven how the adoption of innovation is a rather complex and many-layered process of social interaction over time in which, depending on a number of crucial factors, individual farmers are coming to a usually deliberate and well-considered decision. It is due to one of these main determinants being the respective farmer's status of information, that both word-of-mouth advertising as well as the direct supply with knowledge through external intervention agencies are essential preconditions for this process. It was further explained how, set against the background of Latour's 'model of translation', farmers should be seen as heterogeneous, active members of a chain through which the innovation is passed on. At this, they take decisions under different conditions in different backgrounds. They are acting as effective and energized entities who, against the background of their own personality structure, economic situation and social position, also have the potential of acting out their own schemes and strategies, thus actively shaping and driving forward the 'translation process'. The theory also maintains that out of a heterogeneous population of greatly diverging and conscious individuals, adopters do not merely resist or transmit the force of the initial impetus but rather, each of them acts as a source of new energy which is actively added to the movement of the innovation. It was shown how this is the case for the transfer and dissemination between farmers. While it was thus revealed that it is precisely local farmers' activity which is of vital importance in this respect, the question of the further development of organic management practices *within* the respective agricultural community into which they are inserted, has not yet been examined.

Clearly, though, it was demonstrated in the previous chapter that organic management practices are constructed out of a plurality of constitutive elements which are then introduced into farming communities from outside. As was also shown, only a minor proportion of this construct is actually based on local farmers' knowledge but rather rests upon the broadening and reconfiguring of the latter. At this, not only do external intervention agencies play a role in that they provide an interstitial knowledge space for the productive recombination of different elements from various knowledge assemblages, but also has individual employees and innovators' motivation, knowledgeability and creativity an important part to play. It is in view of the fact that organic management practices are primarily knowledge-based innovations and thus of quite fluid character, that it becomes all the more imperative to investigate their respective mutability. Even though they are somewhat 'pre-engineered' in order to suit particular geo-ecological - or even cultural – needs

and preconditions, the neglect of local farmers' creative contribution to the respective innovation not only is a gross oversimplification, but also is oblivious of the fact that organic management practices are inherently variable and actually meant to leave room for individually modified implementation.

At the same time, it should be clear that farmers are innovative by nature: Agricultural 'tradition' is permanently in motion since it is constantly being performed. Richards, for example, considers 'traditional' agriculture to be an essentially *performative* activity at which emphasis has to be placed on its results rather than its designs. According to him, especially in scenarios of problematic environmental conditions, the fundamentally risky and unpredictable nature of agricultural activity forces agriculturists to constantly come up with innovative coping strategies they develop themselves. Hereby, major importance is attached to the spontaneous, flexible aspects of this performance. He thus proposes that agricultural practice should essentially be considered not from the viewpoints of 'western' scientific standards and values but rather as a 'self-help therapy through which farmers put their mistakes and disasters behind them without the performance grinding to a halt'<sup>393</sup>. Therefore, also from Richard's point of view, agriculturists' capability of initiating and carrying out highly flexible and efficient performative processes places their underlying agency at the centre of agricultural operations and developments in marginal agricultural scenarios.

Other approaches, when moving away from the 'Transfer-of-Technology' or 'The Diffusion of Innovations'<sup>394</sup> models in the late 1980s and early 1990s, now strongly emphasized the systematic nature of farmer-initiated agricultural innovation. Rhoades and Bebbington, for example, claimed that innovations accomplished by farmers were not only constantly generated, but were also based on deliberate experiments, on systematic trial-and-error-methods which - in analogy to modern science's *modus operandi* - even included the formulation of problems and hypotheses as well as the orderly testing and validating or invalidating of the latter<sup>395</sup>. Interestingly, they also identified three major reasons to explain farmers' need to experiment: firstly to satisfy their curiosity; secondly to solve problems and, thirdly, to adapt technology. As is so often the case, the truth seems to lie somewhere in between: Of course, farmers have established and reliable ways of systematically experimenting and thus the capacity of developing their own technology. Since the earliest stages of agriculture, farmers have continuously engaged in the development of vast numbers of technologies for the production, storage and processing of crops and foodstuff. It was through farmers' innovative activities that many different farming systems emerged - each adapted to the locally available resources and prevailing climatic, geophysical and cultural conditions.

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393 Richards, P. 1989: 41

394 For more details see chapter seven

395 See: Rhoades, R. & Bebbington, A. 1988

The 'multi-component farming system' which is prevalent in the mountains of Uttarkāśī district, is an example of such a complex ensemble of innovative elements: While on the one hand, local agricultural activities seem to be strictly arranged and regularized according to techniques which have been tried and tested for generations, on the other hand the system leaves room for individual activity, creativity and continuous experiments. It was made explicit in several previous sections that in the scenario under consideration, local farmers are invested with high degrees of individual reflexivity and capability to act and that, upon reversion, local agricultural production contains a great deal of deliberate action and informed decision-making. Especially chapter six dealt with the dynamic and processual interdependency between the individual farmer and his respective community, the latter allowing for the development of a social field in which the acting out and the 'unfolding' of individual potentialities become possible.

At this point of the study, however, rather than dwelling any further on the examination of the various possible ways of how local farmers are systematically or spontaneously dealing with their endogenous capacity of innovation, instead, what is of particular interest, is the question of how exactly do farmers deploy their capabilities in order to transform innovations that are brought to them from outside? What role do farmers play in the process of the modification and further development of external information and which outstanding aspects govern this development? In this context, the above indicated issue of whether farmers' innovativeness is in principal based on systematic reflection or spontaneous action might eventually contribute to provide a deeper understanding of the nature of these 'transformation processes' while at the same time bringing into focus the complexity of their own ways of dealing with innovations brought up from outside. Therefore, in what follows, it will be demonstrated how local farmers are not merely at the center of the process concerning the adoption and diffusion of organic management practices, but that they also have a major influence on how these innovative practices themselves are locally implemented, used, modified, optimized and transformed. Since for a long time, 'the world has been slow to recognize farmers' experimental inclinations and abilities'<sup>396</sup>, their contribution to the innovative development of agricultural methods and techniques has long been gravely underestimated.

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396 Chambers, R.; Pacey, A. & Thrupp, L.A. 1989: 185

### 9.3 Simplified Modifications: The Use of Earthworms and Gomutr

To come back to the subject of producing high quality biomass: Word-of-mouth dynamics have provided for the fact there is probably hardly a farmer in the area in question who is still unfamiliar with the concept of turning animal manure into compost. Initially, of course, the information on how exactly this can be achieved comes from the capacity-building efforts of external intervention agencies who set the ball rolling.

Navdanya's method of using earthworms in order to substantially increase soil fertility, for example - as it is taught and demonstrated both on its experimental farm as well as in the villages by extension workers - requires only little training and expenditures<sup>397</sup>: A small plot measuring roughly two by one meter in size is laid out and then enclosed with stones, preferably bricks. This structure is then filled up with not more than twenty to thirty kilograms of raw gober as it comes out of the animals' sheds - a moist compound of digested and undigested fiber including dung, urine, bedding materials and fresh remains of fodder - and is 'infused' with two to three handfuls of earthworms. If outside, everything is then covered with an old tarpaulin or piece of cloth to prevent the ingress of too much water and eventually the washing away of the thin layer of manure. Eventually, after approximately two weeks, the earthworms have processed the upper soil layers and have moved down to the bottom of the plot. At this stage of the process, the upper half portion of the manure has been properly processed into high quality compost and can now be skimmed off. Following this, the shrunken volume is replenished, and the earthworms' workflow begins anew. As a result, one such structure provides the farmer with ten to fifteen kilograms of highly fertile biomass. The latter, due to the incorporation of detritus into mineral soils, contains significant concentrations of important nutrients for effective plant growth such as nitrogen, phosphorus, potassium and calcium. In addition, earthworm activity also enhances the activities of other beneficial soil microorganisms and accelerates the turnover of organic matter in the soil. The resulting compost is therefore not only rich in organic and mineral nutrients but also loose, airy and shows greatly increased microbiological activity. However, this method of compost production is designed for the processing of rather small - although highly effective - quantities of manure which have to be constantly produced, collected and stored by the farmer. Therefore, although this method requires a minimum of structural preparation and financial expenditure, it depends on an increased level of scheduling and monitoring - which might be the reason why the system as Navdanya propagates it can scarcely be found. Over the past few years, the use of earthworms has nonetheless become very popular and widespread in the whole region where the method's rapid spread took place without great commitment on the part of the assisting agencies. Today, many farmers are using this

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397 See: Methodological Appendix II/ Picture 17



techniques in order to successfully process their gober. However, hardly anyone is following the - above outlined - detailed prescriptions that initially came with the technique. Instead, what has happened resembles some sort of cross between farmers' habitual way of heaping up large piles of dung and the externally suggested method: the overwhelming proportion of farmers - even those without organic alignment - quite simply infuses their dung heaps with some handfuls of earthworms, thus eventually producing much larger quantities of compost which, however, is of lesser quality than the outcome of the original technique. Apparently, this is a very simple and effective concept which can easily be passed on and recreated by farmers themselves without the need for any external assistance. Furthermore, it seems to correspond with the commonplace practice of spreading greater quantities of gober on the fields before plowing. This widespread use of earthworms shows in a rather unspectacular way how externally inserted innovations have the potential to develop their own momentum - both in terms of their dissemination as well as their modification through farmers themselves.

And there is yet another agricultural technique which has become very widespread in the area, namely the use of cow urine - or gomutr - in the preparation of natural herbicides and pesticides. Similar to the application of gober, the extensive use of gomutr has been an essential part of agricultural activities in the area in question ever since. Most notably its effectiveness as a pest repellent finds application in numerous aspects around the subject of the adequate storage of grains and seeds. For example, in all parts of the region many farmers can still be found who smear the commonly woven storage baskets with thin layers of a mix of cow dung and urine. Once this coating has dried in the sun, farmers agree that it produced 'bad smell which pests don't like', thus making it impenetrable to the latter. Likewise, the aforementioned 'koṭhārs' - wooden storehouses constructed from solid plywood of the local 'devdār' tree - are treated with the same kind of mixture which is used to grout the cracks between the individual planks. This procedure, farmers say, completely seals off the koṭhār's inside from the outside world, thus making it inviolable not only to insect pests but also to the troublesome and persistent efforts of rodents. However, in addition to these quite common techniques of making use of gomutr for protecting one's crops against all types of vermin, external intervention agencies are trying to spread different techniques of preparing organic pesticides and herbicides, using gomutr combined with locally available materials. Also Navdanya in its farmers' trainings promotes assistance in the preparation of a variety of different sprays, stimulants and tonics many of which have as a basis the above mentioned inherent properties of cow urine. At this, depending on the desired effect, the organization offers background information and practical training on the production and appropriation of the various formulas. Thus, not all of them are geared towards the control of pests

but many also target the strengthening of the crops or an increase of beneficial microbiological activity in the soil. And rather often, the promoted mixtures are said to incorporate a combination of strengthening, stabilizing and biocidal effects. In addition, according to the intended site of use, farmers are given individual advice concerning respective locally available ingredients. While, for instance, in the lower areas of Uttarkāśī, the organization's extension workers promote the use of neem and eucalyptus leaves, higher regions are provided with information regarding the biocidal properties of walnut leaves and stinging nettles. Also, the organization circulates the effectiveness of chili and garlic extracts when combined with the aforementioned active substances.

One of the 'organic' formulas that are propagated by various external intervention agencies all over India is the co-called 'jīvāmrt'<sup>398</sup>. Among them, also Navdanya has taken up disseminating this formula and virtually every farmers' training that is arranged by the organization, in one way or another includes information about its preparation and application. Similar to the production of vermicompost, also the preparation of jīvāmrt requires a certain amount of effort in terms of planning, implementation and monitoring. In return, what is usually expected – and also promised – from its use is better health of soils, crops, microorganism and – eventually – people while at the same time reducing monetary expenditures to a minimum.

Following quite closely Subhash Palekar's original formula, Navdanya's instructions of preparation are as follows: One kilo of lentil flower and one kilo of crushed, unrefined whole cane sugar - colloquially referred to as jaggery or 'guḍh' - are mixed with five kilos of fresh cow dung and another five litres of gomutr. In addition, the resulting mixture is complemented with just a handful of soil from the intended arable field of application and then stirred into roughly one hundred litres of water. It goes without saying that the preparation of this formula requires the availability of a sufficiently large container. Afterwards, the formula is left to rest for four to six days and requires stirring twice a day. The resultant amount of jīvāmrt, explains Navdanya's master trainer P.K., is sufficient for the treatment of approximately twenty nālī - a specification which, due to the said measure being officially undetermined and thus fluctuating heavily within the region, can't possibly be converted into accurate figures of any other surface area measurement system; however, local farmers understand the information to refer to more or less the fourth or fifth part of the average area under cultivation per farming household. Once the jīvāmrt is properly fermented it can be further diluted if need be and then spread over the whole field. It were best to carefully apply the mixture close to the roots in order to achieve the greatest efficacy but if this procedure was considered as too

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398 Literally meaning 'nectar of life', jīvāmrt became increasingly known from the mid-1990s onwards when Subhash Palekar - a farmer, agricultural scientist and ecological activist from Mahārāṣṭra - started the promotion of his concept of 'Zero Budget Natural Farming' part of which was the said formula.

See also: Methodological Appendix II/ Picture 18

time-consuming, it might as well be simply mixed with the irrigation water and thus applied to the crops more widely. According to Navdanya's agricultural advisors, the formula's main effect is to stimulate microbiological activity within the soil, thus making it fertile, airy and enhance its water holding capacity. Thus, whilst its first and foremost quality is that of an energizing tonic which boosts plant growth and consolidates soil health, *jīvāmrt*, owing to its high content of gomutr also has the properties of an organic pesticide. In fact, explains P.K., it was the firstly mentioned characteristic effect which creates the necessary condition for the soil and crops to become stronger and more resilient to climatic impacts, diseases and pest attacks - an effect which was further intensified by the tonic's biocidal properties. However, even though the application of *jīvāmrt* holds a double promise of success, it is only very few farmers who actually follow the exact instructions as proposed by Navdanya. As already mentioned above, rather than adopting the whole package, farmers seem to have picked out the single aspect of using solely gomutr for the purpose of both enhancing soil fertility as well as reducing the risk of pest infestation on their fields.

#### **9.4 The Fluidity of Organic Management Practices & Farmers' Individual Capability**

While it can be speculated that these types of simplified modifications happen rather often, for the time being, both examples are nevertheless suited to point at the fact that farmers' agency is at the heart of the matter not only in terms of the physical dissemination of externally inserted innovations, but also concerning their further qualitative modification. Although in the specific examples examined here – that is the use of earthworms instead of maintaining a more sophisticated vermicompost as well as the mere application of cow-urine rather than preparing the more complex formula of *jīvāmrt* – these modification are rather simplistic and unspectacular, they nonetheless already suggest that farmers' individual contributions to the process of transformation and modification of externally induced innovations play a much greater role than is commonly understood. It actually appears to be the case that organic management practices are indeed characterized by great fluidity, thus being particularly suitable for individual adjustment and an essentially actor-centered approach on rural development. Therefore, examining relevant and detailed examples of this kind can be used to emphasize two important points concerning the local 'materialization' of organic management practices: Firstly, owing to the fact that they are essentially knowledge-based innovations, organic management practices are invested with an increased transformative potential. They exhibit rather fluid boundaries and transitions, leave room for individual understanding, interpretation and implementation and therefore produce fluid and individually different configurations. Due to this fact, innovative organic management practices

which are carried into rural communities from outside – be it through extension workers or other farmers – will necessarily transform and develop distinctive features once they are circulated within the new context. Secondly, the materialization of organic management practices includes very strong performative aspects which are subject to continuous transformation, the latter emerging from a social fabric that is fundamentally made up of dynamically unfolding social relations and active individual contributions<sup>399</sup>. Once again, it is the farmer's agency and individual creative potential which is of central importance, thus indicating that organic management practices are indeed showing high potential in terms of promoting farmers' own capabilities, self-determination and the incorporation of elements from local cultural repertoires.

Based on these insights, hereafter I will provide a detailed examination of three specific instances, where externally introduced organic management practices were found to have been taken up and creatively modified by individual farmers. However, at the actual time of my observation of these practices, I did not have a clear vision of where these observations might eventually lead me. Especially the importance of developing a deeper understanding of how ideas, concepts, knowledge and information on organic agriculture develop and flow in time and space, as well as the underpinning of the thesis that farmers must be understood as highly individual actors who, through a continuous process of translation and modification, actively and consciously generate change, had not yet assumed firm shape in my mind. Even at a later point in time, when these much more specific leading questions had already become apparent, I was still building my research on 'free fall' ethnographic enquiries and classical participatory methodologies, trying to remain uninfluenced by preconceived ideas about 'the problem' as far as possible. For this reason, I cannot put forward any further information on the eventual effects and outcomes of the innovation processes which are going to be described in the following. Moreover, it happened only over the course of the fieldwork that, after an initial phase of several months and mature reflection, I came to choose Saur village as the focal point for my research. During this period, however, I had also been visiting other villages in the area where important observations were made. It was only at a much later point in time when, going through my fieldnotes, I came to realize their significance.

Due to this situation, only one of the selected examples is anchored in the familiar context of Saur village, while the other two instances were found in two different localities. Nevertheless, all examples are outstandingly suited for illustrating and examining in depth individual farmers' reflexivity and creativity as well as the transformative potential of organic management practices, resulting in their very fluid and dynamic character.

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399 See chapter 6

### 9.4.1 Case Study I

Sometimes I visit M. S.'s family. They live in Ramgarha, the town where Navdanya's experimental and biodiversity conservation farm is also situated. Although Ramgarha is directly connected to Dehradun, which is approximately 20 kilometres away, the area is as rural as it gets. Like a flat brown snake the Simla-bypass winds its dusty way from Dehradun to Vikasnagar, another major town right at the foothills of the Himalayas. Due to its location, Vikasnagar is an important market point and transport hub not just for the surrounding countryside of the 'Dun valley' but to a greater degree for the mountain regions of Dehradun district and Uttarkashi – the two westernmost districts within the state of Uttarakhanda. From Ramgarha, even on cloudy winter days the peaks of the distant Himalayan mountain range are clearly visible. At an elevation of approximately 700 metres, the climate is generally temperate which means that summers are not as unbearably hot as in other parts of the subcontinent and in winter, hardly ever will the temperature fall down below the freezing point. Furthermore, the area receives high precipitation and especially during the monsoon period between June and August, it is quite likely that Ramgarha sees very heavy rainfalls. The favourable climate and plentiful rain provide nearly ideal conditions for agriculture, especially for the cultivation of tropical fruits and the area is widely known for its high quality of Basmati rice and lychees. Parallel to the bypass road, a little stream cuts through the valley and so, farmland is usually divided into the two categories 'below the road, near the riverbanks' and 'above the road, near the jungle'. This division implicitly indicates the crops grown on either side of the road: Near the river, the immediate vicinity of a virtually constant water supply<sup>400</sup> allows for the cultivation of water-intensive crops like sugarcane and rice. Other cereals, vegetables, pulses and green fodder are grown on the more elevated parts between the road and the jungle.

M. S.'s house, which is painted in a deep blue and thus splendidly contrasts with the rich brown of their earthen courtyard, is located in the western part of Ramgarha village, just a five-minutes' walk from Navdanya's farm. It is due to this close vicinity that M. S.'s family has long been one of Navdanya's members in the low-lying areas of Uttarakhanda; the same circumstance allows for me to pay them rather spontaneous and frequent visits when I'm working with Navdanya's staff at their farm. M. S. is a rather typical example of an Indian subsistence farmer. He owns and tills roughly ten Bighas of land and operates another two Bighas on the basis of sharecropping. Supposing that one Bigha roughly equals 0.3 hectares<sup>401</sup> and keeping in mind that, as was explained before,

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400 Even when the river almost runs dry during the hot summer months, subsoil water levels are considerably higher than further up near the forest. Almost all existing tubewells of the village are located below the road, near the river.

401 As is usually the problem with all traditional square measures, a 'Bigha' is very difficult to translate into metric terms. The fact that within different areas of India different versions of the same measure are used further complicates the issue. The ground covered by one 'Bigha' in West Bengal vary quite significantly from the Nepalese 'Bigha' and again, both substantially differ from the one used in Uttarakhanda. For this reason, using an approximate

farmers anyway usually don't provide exact quantitative information but would much rather refer to significant qualitative aspects of their holdings, M. S. operates on altogether approximately four hectares of farmland. None of this stretches down to the river, though most of the smaller plots are located close to his house where he lives with his wife, daughter and two sons. He has another four daughters but all of them have already been married off and, according to the custom, have left to live with their husbands' families. I find it difficult to estimate M. S.'s age but, since most of his children are grown-ups, he probably is in his 50s right now. Very much like their 15-year old daughter who is exceptionally beautiful, also M.S.'s wife still radiates beauty and a certain kind of wit. Most of the time it is actually her I am talking to when I go to see the family since her husband is not a very talkative person. Whenever I am alone with him, though, he refers to his wife as 'my old lady' which is yet another indication for her being very much in charge of the household. She also deals with money quite openly and casually, yet firmly, which is not very common since it is usually the mens' domain. The family's most valuable possession is a little tractor which they bought in 2005 for a little over four Lakh Rupees. In order to be able to afford this purchase, they took a loan from the only bank in the neighbouring town of Nayagão. They both agree that rate of interests and repayment obligations are quite reasonable due to their 'Kisan Credit Card'<sup>402</sup>. However, an annual repayment of 35,000 Rs is no trifling sum for an agricultural enterprise of this size. The couple also owns a pair of oxen which is used for plowing plots too small to use the tractor and a cow. Due to his land being second-rate in terms of its location quite far from the river, M. S. cannot participate in the production of the area's two major cash crops: Sugarcane and Bāsmati rice. Therefore, regarding the choice of crop cultivation, the family is quite subsistence-oriented and grows minor quality wheat and rice as well as peanuts, mustard, pulses and corn. In addition, a little kitchen garden supplies the family with seasonal vegetables like onions, eggplants or tomatoes, and a tubewell nearby with water for drinking, washing, doing laundry and selective irrigation. They mostly live on what is being harvested: Wheat and corn is milled and, together with rice and pulses, constitute the familie's staple diet; Mustard seeds and peanuts are processed into

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figure seems to make the most sense here. Thus, henceforth one hectare will be equaled with roughly three Bighā or 0.3 hectares per Bighā respectively.

402 The Indian 'National Bank for Agriculture and Rural Development' (NABARD) states:

'The Kisan Credit Card is a pioneering credit delivery innovation for providing adequate and timely credit to farmers under single window, with flexible and simplified procedure, adopting whole farm approach, including the short-term credit, medium term and long term credit needs of the borrowers for agriculture and allied activities and a reasonable component for consumption needs.'

National Bank for Agriculture and Rural Development. Website:

<http://www.nabard.org/development&promotional/kisancreditcardmore.asp> (retrieved on 03.03.2012)

The Kisan Credit Card scheme was started by the Government of India in consultation with both the Reserve Bank of India (RBI) and the NABARD in 1998-99. Features of the system are, for example, that limits should be based on operational land holdings, cropping patterns and scale of finance, i.e. on the individual prerequisites and performances of farmers. In addition, farmers would be evaluated by the bank on financial grounds by looking at their past record as well as on personal grounds by looking at their reputation in the village.

vegetable oil which is also used in cooking. Kitchen scraps and organic leftovers are fed to the animals who in turn supply the family with milk, meat and eggs. Only if the harvest is exceptionally good there is enough left to sell the surplus on the market or, preferably, to Navdanya.

One day in early march I sit with M. S.'s wife and their eldest son on the veranda, all of us clearly enjoying the sun after a rather longish period of mostly foggy and overcast weather. For the last couple of days now, however, the weather has become considerably clearer and warmer and one can observe the surrounding green cereal fields grow daily. We drink hot chai out of little porcelain cups, chatting about this and that, waiting for M. S. to return from - as his wife tells me - taking care of 'some problem with the wheat'. When he eventually does, he is carrying a small plastic bucket that holds a mysterious content of white powder. As usual, after short words of welcome, we both sit down comfortably and, while M. S. offers me one of his Bīrī cigarettes and I offer him one of my regular 'Goldflake' ones, his daughter emerges from the house, serving us fresh tea. While we're both sipping our tea and smoke our cigarettes, I think to myself about the bucket's content, going through a number of scenarios. Have I just caught him using chemicals on his organic crops? However, the answer to the question of the bucket's content is not all that simple and certainly comes as a surprise to me. In response to my inquiry he explains that there was indeed a 'problem with the wheat' since on one of his fields of lower quality, which is located close to the forest, the crops have been attacked by termites. It is not uncommon for this kind of thing to happen in the area, he continues. The close proximity to the jungle - which is where these insects build their hills and from where they undertake their invasions on the surrounding fields - made the adjoining croplands particularly susceptible to termite attacks. Usually, he says, the affected crop was lost and there wasn't really anything one could do about it. The field had to be abandoned and the farmers commonly suffered severe losses. This time however, he wasn't willing to give up so fast. Having recently attended one of Navdanya's training courses where a staff member of the 'Wildlife Institute of India' in Dehradūn had given a talk on the significance of animal biodiversity in farmers' croplands, it has now occurred to M. S. that he might find a solution for his problem through exploiting natural antibiosis. 'Like spiders eat little insects so do ants eat termites' he sets forth his line of thinking. Now that his crop has attracted pests, he is going to make a try at attracting natural predators. Thus, he says, he's come up with an idea: Quite contrary to my initial fears, the little bucket does not contain chemical fertilizer but rather is M.S. carrying a mixture of whole wheat flour 'Āṭa' and finely crushed 'guḍh', which he intends to apply on his affected field. The Āṭa, he hopes, might attract the termites more than the wheat plants, thus enticing them away from his crops and the causing of further damage. The sweet smell of the 'guḍh', in turn, should attract large numbers of ants whom he expects to quickly do away with the termites.

This example of individual innovativeness shows how even very tiny impulses can make farmers see their situation in a new light. In the present case, due to an external impetus, M.S. received pieces of information he had probably previously lacked. This in turn inspired him to creatively reflect on the things heard, trying to adapt them to his particular situation and set of issues and finally coming up with his own innovative approach of making use of his farmlands' animal biodiversity. It also makes clear that the term 'organic management practice' does indeed not necessarily refer to some kind of 'readymade' innovative method or formula – although these also exist as will be shown in the following. Rather, as becomes apparent in the case described above, it is the adequate knowledge base that puts individual farmers in a position where they can make use of it according to their own needs and particular conditions. The significance of animal biodiversity in farmers' croplands is an important aspect of the knowledge on organic management which is disseminated by Navdanya's employees and extension workers. And although the organization also offers concrete 'recipes' for the production of formulas of organic pesticides and fungicides, the situation of M.S. clearly shows the importance of getting access not necessarily to accurate methods and formulas, but rather to the knowledge underlying them – in this case the basic approach to exploiting natural antibiosis. Thus, the farmer is provided with the general possibility to not only address highly particular problems – which is all the more important in marginal and fragile scenarios – but at the same time can also tap his very own potential in order to tackle the respective issue.

#### **9.4.2 Case Study II**

Canikā is a little farming village in Uttarkāśī district. Situated quite pittoresquely in a shallow valley at an elevation of approximately 1500 metres above sea level, the sleepy mountain village is surrounded by meadows, croplands and gently rolling hills whose slopes are covered by dense green forests of conifers. Like in most mountainous regions, in this area too, there is only very limited scope for even small-scale irrigation facilities which is the reason why the overwhelming proportion of Canikā's agricultural land is rainfed. In terms of public transport, it is only a short distance away from Purolā - another small yet centrally located town in the area and the local 'transport hub' for both people and goods. Thus, the general level of mobility in the area around Purolā is not as low as in other, remoter and less accessible parts of Uttarkāśī. It is for this reason that in agricultural production, the usage of chemical fertilizers and pesticides has long since been commonplace in the region. However, due to the prevailing geocological conditions, it is not suitable for high-intensity agriculture and thus, there can be found not one single tractor in the



whole of Canikā village. Although they have easy access to scientifically engineered seed material and chemical additives, the village farmers are almost entirely dependent on adequate rainfalls as well as animal power and a lot of human effort. Therefore, although they are not left to rely on themselves to the same degree as, say, the people of Saur village, the farmers of the region around Purolā are subject to the same types of constraints resulting from high level of dependency on external factors. Local farmers' experiences with the use of chemical additives in agricultural production are thus quite similar to those reported by farmers in the higher regions around Sānkrī and Saur village and the most commonly indicated issues relate to the strong decreasing of soil fertility, the weakening effectiveness of externally bought inputs as well as the growing concerns over the potential risks for human health. Organic agriculture is not particularly strong in the area although G.P.G., the local Navdanya-coordinator, seems to be very serious both in his own farmwork and the promotion of Navdanya's cause. He is one of the younger employees and it has been only a few years since he has joined the organization - both as a staff member and organic farmer. His area of activity basically comprises the extension of organic activities in the surrounding region which involves not only the 'conversion' of new organic farmers but, above all, the handling of already existing local organic farmers' networks as well as the further development of their respective activities. In many aspects, G.P.G.'s farm is a classic example of most agricultural holdings in the area: he operates about 80 Nālī<sup>403</sup> of mostly terraced land which is spread around the village in small plots. On this he grows crops and vegetables for family consumption as well as a number of cash crops such as 'Chardhān', a local rice variety, and green peas - both of which are sold on the regular market in either Vikāsnagar or Dehrādūn. Moreover, the region is famous for its special variety of red rice - 'Lāl dhān' - and the cultivation of high-quality millets and there always is a small demand for these products on the part of Navdanya. On some plots, G.P.G. also grows a little wheat but generally, he says, his family consumed the entire harvest so that usually there is nothing left of it to sell. I stay in Canikā village rather often. Since, on the one hand, it is fairly precisely a full day's journey away from Dehrādūn and, on the other, another four to five hour trip from Saur village, it is the perfect location for spending the night between those two outermost points of my working radius. Also, G.P.G. and I get along very well and I really enjoy staying with him and his very warm and welcoming family. Thus, whenever I am on my way to or from Saur village, I try to stay a few days in Canikā village in order to not only spend a couple of nice days with my friend, but also to have a look at how organic farmers are doing in this mid-altitude area as compared to the higher parts of the district.

Thus it happens that one day, when passing G.P.G. neighbour's house, the latter invites me to sit

403 Approximately 2 hectares

with him for a while and have a cup of tea. The neighbour, whose name is R., lives in a nice little house across the narrow path that separates the adjoining premises. Despite his family's domicile being rather small, it has a huge front yard and often have I admired the wide varieties of vegetables and herbs that grow in it. Since we have met rather frequently until now, I am quite aware that R. is another of Canikā's organic agriculturists. Also, we've already had a couple of less important conversations - usually about safe topics such as the weather, crop yields, cropping patterns or food. However, the invitation provides me with the chance of getting to know him and his family a little closer and I accept without hesitating. R., who is sitting on a plastic chair in front of his house and clearly enjoys the warm afternoon sun, calls for one of his daughters who only seconds later appears with another plastic chair. Then, after the usual exchange of courtesies, when I have settled comfortably in my chair, the girl serves us tea and sweet little biscuits. We talk about this and that and, of course, quickly come to the subject of farming. Like the rest of Canikā's farm houses, also R.'s home is characterized by a large heap of dung in front and, like most farmers when being asked about their agricultural expertise, he immediately points at his gober. Putting his cup down, he gets up and indicates me to do the same. We walk over to the large pile of manure which heavily sits under the densely branched roof of an apricot tree. Small clusters of straw, leaves and tiny branches indicate that at regular intervals - probably daily - fresh animal manure is added to the pile which then slowly starts to disintegrate as fresh layers of biomass are added. As already described above, this typical and widespread method is actually not very effective for the production of high-quality compost; however, although there's lots of room for improvement, the use of earthworms alone has a significant positive influence on specific soil properties such as higher nutrient availability, quicker turnover of organic matter or increased microbiological activity. Breaking open the surface of the heap, R. brings out a handful of compost and shows it to me. When I ask him where and when he is going to spread it, he tells me that it would be a waste of time to already apply this compost. 'It is not ready yet' he says and, with an air of immediacy, leads me to a nearby plot where he has only recently laid out an area for the cultivation of apple trees. Tiny apple tree seedlings stick out of small, circular nursery beds, each of them neatly covered with soft and dark compost soil. Letting some of it run through my fingers, I show my admiration for the obvious quality of this soft and airy yet moist and substantial compost. At the same time I make a careful inquiry about where this biomass material might come from since, apparently, it is of much higher quality than the one shown previously. Wiggling his head, he tells me that actually, no, originally this 'very good compost' comes from the dung heap under the apricot tree. But, still wiggling, he continues to explain that actually, yes, there is quite a difference between the original gober and this 'very good compost'. The latter, he explains, was taken from the last manure heap's yield which he had carried

off almost one year back. However, he was not satisfied with the quality of the compost. Its quality was not nearly as good as he had hoped but very wet, heavy and densely compressed - even though plenty of earthworms had eaten their way through it. For his newly planted apple seedlings, however, in order to give them a good start, he wanted to use only compost of higher value which has to be loose yet humid at the same time. Considering these deficits in texture and consistency, the thought occurred to him that another 'reworking' of the manure might still offer the chance of increasing its quality in the desired direction. It was obvious to him, he says, that the quality of the compost had been so poor because the heap had been too big and too heavy. 'When you want soft soil' he tells me, 'how can you build such heavy heaps?' Hence, although he had to apply the greater part of the compost just the way it was, he nevertheless left some of it for his little experiment and set aside another small heap which he reworked and took more care of. The result, he says, after a few more months time, was a small quantity of compost which was of considerably better quality and which he had now used on his apple seedlings. This revealed that the large heap of gober under the apricot tree did produce great quantities of manure which, however, was of minor quality since, as he himself says, large manure-piles had the effect of compressing the soil too much, of 'making it tight'. In addition, it took a long time - usually between one year and eighteen months - to produce significant amounts of manure.

Thus, thinking another step forward, it turns out that R. has only recently come up with his own creative idea on how to efficiently 'upgrade' his compost. While explaining his line of thoughts, he leads me a little aside, to the left of his house and behind the newly laid out apple orchard. There, he shows me another pit, almost three quarters full with manure. The latter, however, as compared to the large heap under the apricot tree, clearly is at an advanced state of disintegration; the usual mix of litter, dung, foliage and other undigested plant fibers, which are usually clearly distinguishable from one another, already shows a much more homogeneous consistency. Smiling, R. points at another pit a little further behind. Obviously, since it is still empty, he has just started digging it. It is much more shallow than the one whose content I am just examining, and also reduced in diameter. Realizing my questioning look, he tells me his convincingly simple idea: He plans to shift his manure several times, from the large heap to a pit to another smaller pit. Since, in the course of time, the volume of the biomass will not only naturally shrink but the latter will also become too much compressed, with each shift he is also going to turn over the soil in order to keep it loose and soft. Thus, instead of constantly adding manure to a single dung heap, he already has worked out a schedule of 'reworking' several pits. Many farmers maintain it to be very beneficial to the gober's quality if it was left laying covered with snow for a whole winter - an assumption of which also R. is convinced. Moreover, he believes that the splitting up of the manure into two or more smaller

piles may even increase this effect. Thus, it turns out that the smallest pit is indeed recently dug; however, since R. had just 'transferred' his compost for the first time, it had not yet been used and would not be filled until either the manure in the second pit was sufficiently disintegrated or the main dung heap grew too quickly<sup>404</sup>.

While the first case study showed that often, all that is needed is a tiny external stimulus which can inspire farmers to come up with creative and individual innovations, the present case makes it clear that local farmers are clearly quite capable of reflecting and evaluating themselves on the processes and techniques they adopt and apply - even without any external influencing. In the above example, R. clearly taps his own creative potential in order to come up with some innovative modification. On the grounds of accurate observation and quite rational, consistent considerations he is able to not only identify possible reasons for his problem but also to come up with systematic reflections in terms of potential ways of solving it. Also here, it becomes apparent that it is not a particular, established method which is being used, but rather some kind of underlying principle which holds great potential for individual reconfiguration and optimization.

### **9.4.3 Case Study III**

Quite a bit has already been said in previous chapters about Saur village, its location, ecological conditions for cultivation, agricultural products and, of course, its people. It has also been shown that the farmers of Saur village are characterized by their rather strong sensitivity towards negative ecological impacts since they are very conscious of the essential connections that directly link up their own and their families' well-being to livestock, soil and environmental health at large. Also, I have introduced in detail a number of people - both organic and conventional farmers - in Saur village, among them also B.S. who has a very active and venturesome character. Due to his lively temperament and natural disposition for permanent movement, he is constantly busy with all sort of things, ranging from household tasks to agricultural activities to his responsibilities as one of Navdanya's local coordinators and part-time employee. Accordingly, B.S. has a very sound information base as compared to many other agriculturists of Saur village. Not only does he show a keen personal interest in organic management practices as well as the motivation to implement and try them out, but also, over the years has he gained both much theoretical knowledge and considerable practical experience in the field of alternative agricultural methods. He is thus the only farmer I have ever seen to constantly renew his vermicompost following mostly Navdanya's

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404 See: Methodological Appendix II/ Picture 19

recommendations. Also, like many other farmers, too, B.S. regularly prepares and applies natural pesticides and insecticides all of which are based on the use of cow urine or 'gomutr'. Unlike sophisticated techniques of composting, the farmers of the region have always been aware of the beneficial properties of gomutr which they have long since used as a natural answer to weed and pest infestation. In recent years, however, more and more agriculturists have started cultivating apples to which they are completely unaccustomed – as has already been mentioned in the last case study. Attracted by the hope of high profits, more and more farmers convert parts of their farmland into apple orchards - even though they have virtually no experience in this sector. Accordingly, the initial die-back of seedlings and young plants has been quite high since the farmers had to, and still have to, gather knowledge and experience largely on their own. Also, relating both to the high sensitivity of newly planted trees and the lack of alternative approaches to pest control, chemical insecticides and pesticides are in high and wide use. Although my focus of interest is not primarily aimed at pure cash crops such as apples, it would be quite naive to close one's eyes to this recent trend and not consider at least its most immediate effects.

So it happens that one morning, I overhear B.S. telling his wife that he intends to 'spray' his apple trees in the near future - an activity which I know has to be carried out on a very regular basis. Of course he agrees when I ask him to please let me know when the time comes, but it is not until almost a week later that he puts his plan into action. As agreed, I meet him at his home which is located a short but steep climb beneath the narrow road that connects Saur village to Sānkrī. When I reach there, B.S. is busy in the kitchen, preparing breakfast together with his wife. 'I never eat before the kids have left for school' B.S. tells me, takes a hot roṭī out of the fire and, with an expert hand, throws it into a white and yellow plastic bowl. On the primitive stove there simmers a small pot containing some 'Sabzī'<sup>405</sup> of leafy greens which definitely makes up in odor what it lacks in appearance. The lady of the house serves me unsweetened herbal tea and then, smiling, dedicates herself again to the grinding of freshly picked mint leaves. As expected, the simple food is delicious and, although this is my second breakfast, I thoroughly enjoy the several helpings B.S.'s wife forces upon me. By the end of our opulent meal, I learn that contrary to my expectations, B.S. is planning to apply to his apple trees some kind of ingeniously prepared, homemade 'tonic' - as he calls it. He also tells me that he is constantly experimenting on the exact formulation and effectiveness of the spray, trying to adapt it to particular periods of growth of his apples. While we leave the kitchen in order to collect the main ingredients, B.S. explains that apple trees were extremely sensitive and thus required very careful and consistent handling. While the seedlings first and foremost needed very good soil - most of his vermicompost would be used for this purpose - the fruit bearing trees

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405 Vegetable dish

were very fairly susceptible to all kinds of pests and disease during different stages of growth. 'I have to spray the trees six times a year' he says. 'Once before the flowering stage, twice during the flowering stage and three times during the phase of fruit growth. The main purpose of the spraying aims at controlling pests and diseases. In addition, during each period, one must also add fresh compost in order to provide the tree with sufficient nutrients so that it stays healthy and produces much fruit'. 'I have learned this when I attended a one-month course at the Garhwal University in Srinagar some ten years back' he continues. 'We were not only told when to spray but also what kind of spray we should use. However, back then it was all purely chemical treatment and this is no different today. Even organic farmers are still using chemical sprays for their apple trees since they don't know how to prepare them otherwise'. In his opinion, however, all chemically based sprays were 'poison for the soil and animals' and it was for this reason that, for a couple of years now, he himself had been experimenting with the preparation of effective organic 'treatments' for his apple trees. From a storage room in his basement, he produces a small metal container filled with cow urine which he constantly collects from his two cows. He once again withdraws into the room and, after some noisy clattering, reappears with another, almost transparent plastic canister. It is more than double the size of the metal container and contains some kind of dark liquid which turns out to be fermented 'burās ka ras' - rhododendron juice. For a small number of years now, Navdanya has encouraged local farmers to harvest the rhododendron trees, whose brilliantly red flowers cover the areas mountain sides during the entire springtime until late April. After cleaning and washing the flowers these are boiled in water and, after adding sugar and a few drops of food-safe preservative, finally bottled. The desired effect from the sale of this 'healthy and organic' juice is the generation of additional income through marketing it in the organization's outlet stores in New Delhi and Bombay and is part of Navdanya's approach of predicating the overall income of marginal households' on a larger number of activities besides growing cash crops. So, I have also seen B.S. spending many afternoons on the flat roof of his kitchen, sitting in the sun with his children, wife and neighbors all of them busy cleaning rhododendron flowers. A part of the result of these efforts is presently slopping to and fro in the plastic canister which B.S. now thrusts into my hand while he himself grabs the metal container with one hand and a small plastic bag, which appears to contain a large block of butter, in the other. Equipped in this way, we set off for B.S's apple orchard which is not situated in Saur village but just a little off Sānkṛī's bus stop, right behind the house of a relative. Due to the immediate vicinity of the two villages, it takes us merely a quarter of an hour to reach there and on our way, I learn more about B.S.'s gathering and formation of know-how and experience concerning the preparation of organic herbicides and pesticides. Initially, he says, it was another senior Navdanya employee who had provided him with information on the application

possibilities of various sprays based on organic ingredients. However, all these sprays targeted pests and diseases which appeared in crop and vegetable production; None of them had been designed for fighting the spread of pests in fruit orchards. The reason for this was that, until a few years ago, there simply were no orchards of notable size in the area and thus there was no major problems with the outbreak of disease or pest infestation. Today, however, with farmers laying out orchards with usually several hundred trees, this danger has become very real. It thus happened that, after his conversion to organic agriculture following advice from Navdanya and the growing success following the first difficult years of transition, B.S. managed to acquire more and more knowledge and so he finally decided to experiment with his own organically based spray.

When we arrive at our destination in Sānkṛī, the relative turns out to be a young and beautiful woman who is B.S.'s niece. From her house, a few roughly carved stone steps lead down to the orchard which covers a relatively small area and is subdivided into two adjacent terraced plots. The young woman serves us tea and while I talk to her for a little while, B.S. brings out a variety of things from a small wooden shed which is attached to the house: A large and empty blue rain barrel, a long thin plastic tube, another plastic canister, a foot-operated pump and a particular spraying attachment - some kind of nozzle - which he inspects with particular care. Pulling from his pocket a thin white piece of cloth, he sits down on the house's low porch and starts to clean the device in a very concentrated way. When he is finished, we both get up and, after assembling the pump and disentangling the long tube, B.S. and I together drag the barrel down to the upper terrace of the orchard. We put it on the grass and stabilize it with a few big stones to prevent it from tipping over sideways. Then, after having filled the barrel with two thirds of water, B.S. produces from his coat pocket the small transparent plastic bag and takes out the lump of butter which on closer examination reveals itself to be a piece of already used soap. Smiling, B.S. starts dissolving the soap in the water, anxious not to produce too much lather. 'The soap will make the tonic stick to the trees much longer' he explains and adds: 'Also, it smells very nice'. Next, he slowly empties out the cow urine into the barrel and then carefully stirring the mixture with a long stick. 'The gomutr must not be all fresh but not too stale either' he declares. 'It should be somewhere between two weeks and three months old or else it will lose its effectiveness'. When I ask him for his own opinion on the effects of gomutr with respect to crop health and pest control he becomes quite cheerful: 'Of course it contains natural urea' he laughs 'free of cost.' This, he says, was the reason why cow urine was very good for plant growth. 'Natural fertilizer, natural fertilizer' he repeats, shaking his head, smiling impishly. Moreover, he adds, it contained fungicidal properties - a somewhat superfluous piece of information which does not seem to belong here since, during the emergence of a short lapse in our conversation, it seems we both cannot think of any particularly relevant fungal disease.

It is obvious that for him, this information does not hold any practical value but rather that he must have picked it up somewhere and is now trying to use it in order to make an impression on his listener. Since neither I want to embarrass him nor further obstruct his otherwise cheerful mood and talkativeness, I avoid the question of where and from whom he picked up this information. B.S. however, doesn't seem to have perceived the same and so, while opening the canister containing the fermented rhododendron juice, continues talking about the effects of cow urine on pest infestation - this time in a much more authentic but nevertheless quite peculiar way. 'It is very good against pests and much less toxic than chemicals' he explains. 'Gomutr doesn't kill harmful insects but merely locks up their mouths and they leave on their own. They don't like the smell of it. If you use poison for spraying, that will kill any insect - whether beneficial or harmful'. 'Through the use of gomutr' he goes on 'we can control pests without applying poison to our fields which eventually kills all the insects and the microorganisms'.<sup>406</sup>

While talking, he has finished adding the fermented juice to the mixture in the barrel and now calls for the young woman who emerges from her house and comes down to the orchard. She hands a piece of unrefined whole cane sugar the size of a fist to B.S., who puts the lump into a plastic bag. He then picks up a flat stone from the high layered stone wall which limits the garden against the hill and starts carefully to crush the wrapped lump of sugar. After a few minutes of silent working, he puts aside the stone and, holding the semitransparent plastic bag against the light like a valuable banknote, scrutinizes the size of the small sugar crumbs. Apparently, he's satisfied with his effort and the crushed sugar, too, goes into the liquid mixture of now water, cow urine, fermented rhododendron juice, soap and sugar. To my question about the meaning of adding the juice and sugar to the spray he again reveals very careful and elaborate thoughts, telling me that, at this time of the year, the spraying of the trees was not primarily intended for the protection against particular pests but rather a preventive measure. This is also the reason why he calls his mixture 'tonic'. B.S. deliberately attempts to create some kind of strengthening stimulant which is designed according to the trees' particular needs during a specific stage of growth. 'At this moment, the trees are almost in full bloom' he explains while slowly stirring the mishmash. 'In this time, above all, it is important to attract pollinators so that the trees can develop many fruits. When one pours away fermented juice, immediately there appear many insects. That is so because the taste of the juice is very sweet. And the fermentation process makes it even sweeter - but also a little bitter at the same time'. 'I think' he goes on explaining 'that maybe different pollinators also have different tastes. Some like bitter taste and some like very sweet taste, so I put both into my tonic: Juice and sugar'.

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406 See: Methodological Appendix II/ Picture 20



## 9.5 The True Potential

All three described case studies have shown how local farmers are deeply involved in the modification and further development of innovative information and concepts on organic agriculture which are brought to their respective communities from outside. It should be recalled that organic management practices clearly are constructs that are composed of a plurality of constitutive elements from various sources where only a minor proportion of these elements is actually based on local farmers' knowledge but rather rests upon the - often highly individual - broadening and reconfiguring of the latter on behalf of external intervention agencies' employees and extension workers. These undoubtedly play a key role in that they, through simultaneously generating and using an interstitial knowledge space, develop productive recombinations of different elements from various knowledge assemblages. However, activities concerning the transformation, modification and – as a matter of course – actual implementation of this knowledge and the respective management practices, are not simply restricted to last mentioned group of actors. Rather, as was explained by reference to numerous and detailed local investigations, it is actually the individual farmer who is invested with the potential to make a significant contribution not only in terms of disseminating innovative organic management<sup>407</sup> practices but also concerning their further modification.

Thus, at the beginning of this section, it was initially explained how the widespread use of earthworms and cow urine can be used to illustrate that indeed, farmers' agency is at the heart of the matter both in terms of the physical dissemination of externally inserted innovations as well as their – in these examples however quite simplified and unspectacular - qualitative modification. This insight once again strongly suggests that farmers' individual contributions to the process of the materialization and development of organic management practices play a much greater role than is commonly understood. The respective innovations that are carried into rural communities from outside will necessarily transform and develop distinct features once they circulate within the new context, thus developing their own dynamics and momentum of alteration. It was highlighted many times before that the local adoption and application of organic management practices is always paralleled by the individual farmers current state of knowledge which not uncommonly prevents the latter from considering the conversion to organic cultivation altogether. The widespread use of earthworms in the production of better gopher as well as that of cow urine as a natural pest repellent furthermore demonstrates that farmers are clearly capable of extracting and making use of different innovative components, picking out certain elements and discarding others. These simple cases in

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407 A detailed discussion on the dissemination and translation of innovative organic management practices was provided in chapter seven.

turn suggest that the here described processes of the translation of organic management practices include very strong performative aspects and moreover refers to a social fabric that is fundamentally made up of dynamically unfolding relations and active individual contributions – a meaningful theoretical interweaving of which as attempted in chapter 6. Externally inserted or even prescribed innovations are thus subject to various personal influences from different sides and therefore in a state of continuous transformation. Furthermore, it shows that individual farmers are clearly quite capable of evaluating and reflecting on the processes and techniques which - in one way or another - are brought to their attention.

Having emphasized this I have then described how individual farmers tap their own creative potential in order to come up with some innovative modification themselves. With the help of three selected examples, I have shown that, indeed, the individual farmer has the capacity to act as a source of new energy which actively contributes not only to the circulation and adaptation of innovative information, but also leads to the creative transformation of the latter. Individual agriculturists thus have a major influence on how organic management practices, or at least the therein contained information, can be assimilated, modified, broadened and developed. Moreover, these findings have supported the argument that, being largely knowledge-based, the examined practices have substantial potential for flexible and dynamic adaptation and transformation.

In the first example, a farmer who lives in close vicinity to Navdanya's biodiversity conservation farm, is inspired by a piece of information which has been expounded during one of the organization's training units. When suddenly an unexpected pest infestation occurs in one of his fields, his reflections, starting on the things heard about the exploitation of the effects of natural antibiosis, prove to be not only creative and spontaneous but at the same time also highly consistent and solution-oriented. Through constructively connecting his newly acquired knowledge to his very own problematic situation, he finally breaks new ground with his own innovative approach. In this case, the true potential of externally acquired information can only fully unfold within the realm of the farmer's own reflexivity and creativity, the latter requiring only a minor initial impetus in the form of information to purposefully initiate an innovative experiment.

Also the second example makes it clear that marginal farmers are perfectly capable of engaging themselves in both systematic reflections on their particular issues as well as examining potential ways of solving them: Having adopted some aspects of external innovation, the concerned farmer is clearly in a position of tapping his own creative potential and thus, even without assistance from outside, of coming up with some highly personal innovative development. Realizing that his currently applied technique of generating high quality biomass still offers quite some room for improvement, the farmer starts experimenting with new methods of increasing his efficiency in

compost production. Also in this case, not only is the prevailing underperformance of biomass quality and output thoroughly evaluated, but also does the farmer concerned clearly identify the weak points of his currently used technique. Thus, premised on systematic, problem-centered observation and methodical further deliberation, he manages to come up with a systematic reflection which eventually leads him to engage in practical innovative experiments.

Eventually the third and most extensively covered case once again points strongly at the sometimes great innovative potential of individual farmers. It shows how a farmer who is comprehensively informed and well familiar with the different modes of operation and effects of Navdanya's 'officially' taught organic management practices, ventures into hitherto hardly researched area. Using know-how acquired over many years of working with and also for Navdanya, the farmer concerned starts experimenting on a very sophisticated combination of different ingredients from which he expects equally sophisticated and positive effects on his fruit trees. At this, his fundamental considerations are based on the careful evaluation not only of the desired effects of the resulting mixture but they also cover reflections on each ingredient's effect and contribution to the formula as a whole. Not only does he know about the preparation of effective organic sprays, stimulants and tonics but also is he very well familiar with the inherent properties of their individual components. Also, following the current state of information disseminated by Navdanya, he incorporates in his formula locally available materials. It is highly interesting to observe how this farmer also takes a very stringent and systematic approach, taking into careful consideration not only the effects of ingredients used but also the different problems he faces during the various stages of fruit growth and maturity. Having thought carefully about all this, his aim is to come up with individually designed formulas that, however, are not lineally geared towards a single objective but rather incorporate a combination of strengthening, stabilizing and take advantage of biocidal effects to varying degrees, the latter taking full effect during different period of fruit growth. Thus, it is the interplay of his highly methodical, well-informed reflections and his venturesome and creative individual potential which makes the farmer concerned a wonderful example for how agriculturists should be understood as energized agents who, through continuously employing their individual capabilities and creativity, actively and consciously generate change.

All those examples make it obvious how individual farmers are at the heart of the translation, implementation and modification processes of external innovations which are inserted into the local sphere. In this light, not only do farmers play a major part in the dissemination of organic management practices but also do the latter undergo sometimes quite substantial change. It therefore turns out that on closer consideration, Richards ideas on agricultural 'tradition' are indeed

helpful in that they put an emphasis on the continuous dynamics of even apparently static and enduring systems. Sometimes, Navdanya's organic knowledge provides creative stimuli to farmers; But sometimes, even though the corresponding management practices are often pre-designed to suit particular localities and thus inserted into the local farming communities as rather rigid and uniform schemes, these methods over time undergo changes which are at times simplistic and at other times highly sophisticated. In general it was found to be really common that farmers alter and modify them according to their own level of knowledge and to suit their particular situation and individual objectives. It has also turned out that, especially in the here investigated challenging environmental scenario, farmers cannot afford to rigidly hold on to particular management practices and so the spontaneous, flexible and performative side of the development of agricultural innovation becomes increasingly visible. There definitely happens a constant adding to external innovations, thus adapting them to better suit local and personal requirements. It was also shown how these processes of 'innovating innovations' are sometimes leading to the generation of practices which develop a dynamism of their own. Over time, they lose their innovative 'newness', thus turning into widespread and common agricultural practice. It becomes very evident from these explanations that, indeed, agricultural 'tradition' - even when it is based on innovative elements that are inserted into local environments from external intervention agencies - is permanently in motion since it is constantly being passed on, applied and transformed by individuals. In addition, the finding that this process takes place on a very individual level and is moreover characterized by extreme dynamism, supports not only Richard's approach of regarding agriculture as being continuously in motion, but also speaks for the usefulness of Latour's model of translation which attaches great importance to the personality of adopters, maintaining that the latter were a heterogeneous population of greatly diverging and conscious individuals. The ultimate result of these considerations points at the unpredictability of the whole translation and modification process: Neither can one forecast how any externally inserted innovation is going to spread within local farming communities nor is it possible to predict the course and scope of its transformation.

With the aid of the above explained examples it has become explicit that farmers' individual agency is at the heart of the matter. Since both the dissemination of innovative knowledge and practices as well as their transformation are processes which are based on and characterized by individual capability and activity, it is absolutely reasonable to think of agriculture as an essentially *performative* activity – which is all the more true in the case of knowledge on organic agriculture and the respective management techniques. From this point of view, local farmers' individual capacity of initiating and carrying out highly flexible and creative performative processes places their underlying reflexive agency at the centre of both agricultural operations and the inventive

changes of organic techniques. Juma gets right to the point saying that 'a farmer is a person who experiments constantly because he is constantly moving into the unknown'<sup>408</sup> - a statement which applies to the continuous development of internally generated developments and innovative elements brought from outside. However, to consider this important performative aspect to be based largely on spontaneity and flexibility, thus being 'not a design but a result'<sup>409</sup>, is too simplistic to do justice to farmers' ability to systematically examine and purposefully reflect on the methods and techniques they are using or that are available to them. Quite on the contrary, it was also shown that farmers are most definitely in a position to understand the basic principles external innovations are based on and that, furthermore, they also have the ability to explicitly and clearly point out their problems. By means of combining these two factors, local farmers can well come up with the formulation of hypotheses which often draw on no more than a simple external stimulus but can nevertheless be quite sophisticated. From this point of view, 'performance' does not merely denote a range of 'crisis exit strategies' the farmer deploys when it is too late for target-oriented and planned action; Rather, the examples examined above indicate that marginal farmers - at least those who are motivated enough to engage in the application of organic methods and techniques - clearly pursue their own methodical approaches which include not only careful and detailed observation and contemplation but also deliberate and systematic trial-and-error experiments as well as the validation or invalidation of the latter.

Therefore it can be noted that local farmers are not only at centre of the dissemination of organic management practices which are brought to their respective community from outside, but that they are also engaged in a continuous, dynamic and innovative process of implementing and transforming them. Depending on a wide array of various influential factors within a particular locality and premised on the individual farmers motivation, know-how and socio-economic situation, this process includes aspects of a systematic strategy based on the precise formulation of particular problems as well as targeted, solution-oriented considerations. Due to this multifacetedness which first and foremost includes highly individual premises and actions, the here studied process takes on some quite complex quality, ranging from the adoption of single simple elements to development of very sophisticated advancements. In this regard, there is no prescribed route or progression concerning the dissemination, transformation and further development of externally inserted innovations. However, is a major feature that both stable and comprehensible as well as highly spontaneous and flexible factors play a leading role in these processes, revealing their thoroughly dynamic character. And it is also for this reason that the true potential of any innovation

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408 Juma, C. 1987

409 Richards, P. 1989: 40

only unfolds in its concrete performance, its application through individual farmers in particular local environments where Navdanya's innovative impulses turn into organic management *practices*.

## **10. Conclusion**

### **10.1 Looking back: From Global Discourses to Farmers' Agency**

'Development is indeed a momentous engagement with freedom's possibilities.'

(Sen, A.K. 2000: 298)

The endeavor to study organic agriculture in India started with the simple objective to investigate in detail the role small and marginal local farmers play within this highly complex and multilayered matter which has long since taken on global dimensions. However, in order to systematically build up a comprehensive understanding of the issue in all its dimensions, it should first be noted that, over the last ten years at the longest, organic agriculture not only has established itself as a multi-billion dollar business segment in global markets, but at the same time has become an essential part of a new international rural development paradigm. It is important to realize that the focus on organic farming is set within the context of massive changes in global food production which have grown out of historical developments and which have massively affected global agriculture in general and the Indian agricultural scenario in particular. Just like the introduction of green revolution seeds, methods and technology has fundamentally altered agricultural production not only on the subcontinent but on a worldwide scale, there has now dawned another, 'organic' era which might have similar effects – at least, this is what is often maintained by politicians, scientists, tradespersons, environmental activists, grassroots organizations and farmers alike.

There exist large volumes of studies, analysis and investigations concerning the repercussions of the Green Revolution on the Indian agricultural sector from a multitude of viewpoints. Moreover, there can be found extensive reports on the economic viability of organic agriculture as well as fairly detailed accounts on the development prospects for marginal agricultural scenarios. However, by far the greatest share of those does not provide any substantial data concerning the investigation of organic agriculture on the microlevel which is why so far, there can hardly be found any substantial information on the effects of organic farming in rural Indian contexts from local farmers' perspectives. This circumstance already adverts to the massive differences in terms of approaching this rapidly growing sector and its different meanings. So, while at one end of the spectrum some are hoping for substantial returns and high profits from a market niche which is still largely serving

the needs of well-funded customers, at the other, organic agriculture is expected to be the long sought remedy to a number of urgent and prevailing socio-ecological problems that obviously could not have been resolved to this day. This is especially true for the Indian context.

Thus, it was presented in detail in chapter two how India's agricultural sector remains by far the most important component of the country's rural population's livelihood, constituting the basis of existence of hundreds of millions of small and marginal farmers. It was also explained at length how, even though in the wake of the green revolution national food production increased significantly over a prolonged period of time, this development has substantially failed in providing the country's population with adequate, steady food supply and means of reducing widespread and persistent poverty. Quite on the contrary, decades of overuse of natural resources in the name of increasing agricultural outputs have meanwhile come to undermine the country's agricultural basis in a highly alarming way, thus plunging the sector into a major crisis. With water availability for agricultural purposes reaching critical levels and huge areas of arable land being under serious threat from all kinds of degradation – which are mainly attributable to the heavily lopsided overuse of highly subsidized external chemical inputs – the livelihoods of large parts of the country's population is seriously threatened. This situation is aggravated by the fact that the Indian government keeps on sending out contradictory political and economical signals which also contribute to further distortions.

While the immediate focus of this research derives from this specific situation of major crisis in the Indian context, at the same time, it is important to realize that a very similar set of problems also applies at the global level where, more than half a century after the initial phase of the green revolution, international efforts concerning rural development often enough are still targeting at combating prevailing food insecurity and the overuse and rapidly progressing degradation and depletion of natural resources at a global scale. Against this background, it thus comes as no surprise that the promotion of alternative, more sustainable and socially equitable approaches to agriculture has made its way at the top of virtually all current agendas on rural development<sup>410</sup>. Reasons for this were provided in detail in chapter one. However, since the there presented thoughts provide the foundation to the overall focus and objective of this research both in terms of methodical reflections as well as purpose- and content-related considerations, at this point, they shall be briefly presented once again.

In order to approach its particular characteristics and the currently strong appeal to both Indian and international planners of rural development alike, it was thus explained at length how organic

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410 In fact, some even argue that 'rural development can be seen as the search for a new agricultural development model' altogether.

See: Van der Ploeg et al. 2000: 392

agriculture is commonly understood – and also officially defined<sup>411</sup> - to differ from conventional agricultural production in two major ways: First, it is considered to make sensitive use of local resources while at the same time promoting long-term health and stability of local agroecosystem. This, so it is claimed, could be achieved by foregoing the use of external, chemically-based inputs and instead, by utilizing organic on-farm inputs and making use of natural biological cycles and activities. Second, the commonly promoted concept of organic agriculture is strongly based on the taking into account not only of locally available resources, but also of specific local climatic, physical and social conditions, thus taking into considerations not only particular environments but also particular people and the knowledge and skills of local populations. The explanation for the reason why organic agriculture has so quickly come to play such an important part in international discussions on sustainable development lies in the combination of these two aspects: Through essentially focussing on the connection between local environmental issues, sociocultural capital and the socio-economic situations of marginal and resource-poor rural populations, organic agriculture promises space for bottom-up decision making and the empowerment and self-determination of local farmers, households and communities.

Also in view of the major shift of perspective which, in the early 1990s, redirected the focus from the hitherto dominant macroperspective of economic growth and increased agricultural production towards the localized access to food at the household and individual level, it is hardly surprising that organic agriculture – and the powerful notion that it was essentially grounded on principles of particularity, individuality and locality – has become an almost constitutive part of all major agendas concerning sustainable rural development. However, even though recent development policies now mainly build on the idea that the major purpose of human development was to offer people more options in order to promote their basic freedoms, capabilities and personal achievements rather than considering the unidirectional ‘trickling down’ of economic benefit to be the decisive means to reduce socioeconomic inequality and to eventually eliminate global poverty and hunger, these conceptions often enough remain purely rhetoric. This was shown to be the case both on the international scene as well as in the Indian context<sup>412</sup>. Following these considerations it became evident that, since also global discourses on human development are substantially shaped

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411 This statement refers to the ‘Standards of Organic Agricultural Production’, laid down by the Codex Alimentarius and IFOAM’s ‘Basic Standards for Organic Production and Processing’.

For a detailed overview see chapter one.

412 Concerning the former aspect, I am here referring to the attempted production of a reductionist discourse on behalf of the World Bank and the FAO, discussed extensively in chapter 1.2.1. The fact that also at the Indian national level, there exists a strong and continued adherence to overcome premises of uni-linear agricultural growth and economic expansion with regard to approaches to rural development, is already suggested in chapter 2.3. However, this subject does not become a major focus of attention until the outset of the third chapter, where the narrow focus on export-orientation of organic premium products is used to illustrate the highly asymmetrical premises of India’s official orientation regarding rural development policies.



by different spheres of interests and influences, the rhetorical arsenal - which today commonly includes buzzwords like 'participatory development', 'cultural sensitivity', 'sustainable livelihoods' or 'bottom-up empowerment' - must not be confused with the actual realization of the respective agendas. Therefore, although there clearly has taken place a major paradigm shift in favor of a fundamentally actor-centered alignment, powerful and reductive notions of economic growth and one-sided income-oriented strategies towards rural development and human well-being often are still firmly in place.

Nevertheless, organic agriculture has become a constitutive part of this new approach to global development. Since it acknowledges the inextricable connection between persistent social injustice and food insecurity within rural populations and the sustainable use of local resources – where the term 'sustainable' relates to a substantially broadened perspective including a fundamentally actor-centered, culturally sensitive approach – organic farming in development contexts is increasingly seen as a potentially powerful instrument for enhancing the broad introduction of ecologically and culturally sensitive alternative rural development through putting people at the center of focus.

Against this background, chapter 1.3 underlines the realization that multifacetedness is a very prominent aspect of the concept of organic agriculture, pointing repeatedly at the fact that the latter emerges out of various spheres. It results from a large number of purposes and objectives and thus serves a wide range of different interests. In its whole expansion, organic agriculture is laden with multiple meanings and complex representations and is charged with multilayered connotations and opinions on various levels ranging from international development bodies and transnational corporations to grassroots movements and smallholder farmers. More poignantly formulated, the concept of organic agriculture even contains a paradox: While on the one hand, it is used as an internationally applied administrative tool for harmonizing economic spheres and thus levels individual aspects, on the other hand it is viewed as being strictly bound to particularity and locality. Following these considerations, it has become evident how the organic concept is entangled in complex webs of significance and a multitude of discourses where it is frequently politicized and instrumentalized. Also, especially when used within contexts of human development, it is commonly used as an instrument of propaganda in order to create rather strong polarizations, asymmetries and stereotypes. Frequently, it is contrasted with conventional agriculture and is thus bestowed with an explicitly alternative character that contains within itself a heavily polarized notion of option and choice, the latter being commonly associated with some kind of political, social or ecological resistance. This statement seems particularly applicable to the here investigated Indian context: Since the drastic changes towards 'conventional' agricultural production and working methods, brought about by the broad introduction of green revolution techniques, is being

held increasingly responsible for the profound crisis affecting the country's agricultural sector as well as the sometimes dramatic impacts on broad segments of its rural population, organic agriculture is commonly subjected to the attempt of establishing an anti-pole to conventional methods of agricultural production.

However, in light of the discussion concerning the various entanglements of the organic concept within often highly contested fields at various levels and complex webs of significance, it stands to reason that there is no clear dividing line between the two. On the contrary, it is evident by now that in the context of international rural development, organic agriculture must be understood as a quite extensive and complex concept and there does not exist a simple explanation which could really claim to have captured its quintessence. However, there exist certain essential attributes and chief constituents cropping up again and again when it comes to organic agriculture's potential contribution to rural development issues, namely the management of local resources in a holistic way; showing cultural sensitivity and including the local cultural repertoire; enhancing long-term ecological stability. While these key elements are all heavily biased towards the microlevel in that they presume an actor- or household-centered methodological orientation, at the same time, the whole issue reveals a wide discursive field, pervaded by strong and far-reaching interests, tensions and inconsistencies.

Accordingly, in order to take into account the various discourses which evolve around the subject of organic agriculture, not only must the latter must be viewed as a highly processual, dynamic and mutable concept, but also is the momentum of power gaining increasing importance. Being always present in discursive fields, power - or rather the different influences and interest related to it - is always 'performed' in actu and is again embedded into specific policies, strategies, activities, perspectives etc. The tracking of power-relations thus allows for a fundamental shift in perspective, focussing on 'fields of practice' where power becomes manifest in that it plays a key role in the constitution of reality. Through this, it becomes possible to meaningfully bring together different spheres and discursive fields within a particular, concrete space where the multifacetedness and dynamics of organic agriculture are becoming tangible. Otherwise abstract discourses come alive with actual meaning and relevance and can be used to comprehensively complement the picture in order to not only make visible essential flows of all kinds of information, ideas, technologies and so forth, but also to shows how their effects are determining the realities of concrete people in particular locations. The meaningful interweaving of these spheres - this 'grounding' - is the basic prerequisite for the creation of a comprehensive analytical understanding of organic agriculture since '(...) it remains important today to reflectively cultivate more partial and cautious positions of

observations that nonetheless grapple with 'big' questions<sup>413</sup>.

As a consequence, the here proposed research in its methodical approach places great emphasis on the identification and tracing of particular localized configurations of organic agriculture and thus follows methods of qualitative ethnological investigation. This basically means that it gives priority to the evaluation of microlevel data that were collected during long-term fieldwork in a number of relevant localities, above all, however, in Saur village, Uttarkāśī district in the state of Uttarākhand in northern India. It is therefore an ethnological case study within a relatively strictly delineated local setting which, in the sense explained above, nevertheless attaches great importance to broad contextualization. More specifically, the on-site collection of data for the purpose of this research is based on active participation, personal observations, reflections, practical experiences as well as informal conversations and, at times, direct questionings.

It is becoming clear that this research understands individual actors – and for that matter individual farmers - as the central units of investigation for both methodical and content-related reasons: Not only does the individual farmer constitute a key element when it comes to significant and convincing ethnological grounding, but also is his personal agency and activity commonly portrayed to be at the very center of the concept of organic agriculture. Therefore, a comprehensive answer to the question whether the promotion of organic farming in India - based on the much acclaimed fundamental orientation towards the encompassing inclusion of locality - can really live up to its promise of sustainable, bottom-up decision making where local farmers are encouraged to actively take part in their own 'empowerment' through resorting to their very own reservoir of physical and cultural resources, needs to include a detailed examination of the value of local farmers' individual activities. Therefore, while it is important to reveal particular local configurations of organic agriculture, at the same time it must be examined in what ways and to what extent local small and marginal farmer's agency can be judged as being contributive or even constituent to the dynamic process of generating, disseminating, adopting, implementing and developing organic agriculture. In order to finally be able to appropriately deal with the powerful notion that organic agriculture allowed for some kind of 'alternative', more environmentally sustainable and socially just development which, in the long term holds the promise of breaking the vicious circle of environmental degradation and socio-economic marginalization, the here applied, fundamentally actor-centered methodical approach is a perfect fit.

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413 Ong, A. & Collier, S. J. (eds.) 2005: 17

## 10.2 The Role of Navdanya

In the Indian context, official efforts of promoting organic agricultural production are hardly a decade old and so far have been almost exclusively guided by rather narrow export-oriented interests. Therefore, at least on behalf of official bodies and agendas, the domestic potential of organic agriculture in terms of increased food security, context-sensitivity and a more environmentally sustainable agricultural production so far has hardly received the necessary attention. Rather was it revealed in chapter 3 that the overall export orientation of the organic sector in India is extremely dominant - which is closely linked to the fact that, despite the frequent affirmation of applying a much more sophisticated and multilayered development approach to the propagation of organic agriculture, 'well being of the people' is still much too often being equated with an increase in agricultural production and market expansion.

However, due to the severe and persisting crisis of the Indian agricultural sector and its profound repercussions on large sections of the country's rural population, the promotion of organic farming in the Indian context is also a central part of many private and non-governmental efforts. It so happened that the first of these were undertaken some 25 years ago in the hill areas of Uttarākhāṇḍ state in northern India where the organization 'Navdanya' is inseparably linked with this initial organic 'movement' and might indeed rightly be claimed to have pioneered it. In its grassroots work, also Navdanya closely relates to actor-oriented strategies of context-sensitive capacity-building. Also, in contrast to most official agendas, the ongoing development of direct market access with particular emphasis on domestic sales channels is an important aspect of the organization's work<sup>414</sup>. The organization's understanding of rural development and human well-being is based on a comprehensive and rather ambitious range of concrete measures and activities of 'empowerment', which are all geared towards the strengthening of marginal farming communities. At this, encouraging individual farmers' self-responsibility and initiative is crucial to the organization's self-avowed goal of enabling ecologically sustainable and socially just development from below. While Navdanya's interest in the promotion of organic agriculture has emerged out of the desire for extensive political change on a large scale and is thus quite comprehensive in character, it is needless to say that this motivation is not necessarily true for local farmers who have adopted organic agriculture. Rather, the underlying reasons that today, a substantial part of the farming households of Saur village speak of themselves as being organic farmers are very much shaped by local factors.

However, it is important to understand that Navdanya plays a key role in that it interrelates both

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<sup>414</sup> A detailed discussion of the respective measures and activities as well as an account of the formation and development of the organization can be found in chapter 4.

local and translocal contexts, thus creating a particular and distinct image of and practical approach towards organic agriculture in its area of influence. The organization interlinks different sites and spheres and thus internalizes global social and ecological discourses. It has built up a comprehensive range of practice-oriented schemes and measures which are being carried into rural marginal farming communities through extension workers. Furthermore, by means of providing an 'interstitial knowledge space' where, very roughly speaking, knowledge-generative processes can take place, Navdanya is decisively involved in the generation of knowledge on organic management practices – an issue which turned out to be of crucial importance in the context of this research and thus has received considerable attention. As a consequence, particular local configurations of organic agriculture in the region can be understood only against the background of Navdanya's historical development, ideological background and actual activities in terms of generating, promoting and developing its concept of organic agriculture. With this in mind, the hill areas of Uttarākhand were found to provide a most advantageous basis for the comprehensive investigation of the transformative potential of organic agriculture in marginal rural contexts.

### **10.3 The Scope of Organic Agriculture I: Reducing Vulnerability**

In order to understand the relative importance of organic agriculture for local farmers, their households and communities, it needs to be emphasized time and again that the here investigated local scenario of Saur village lies in an elevated mountain region, thus being inherently subject to very specific and challenging environmental conditions. As explained in detail in chapter 3, it is the challenging farming conditions – arising from difficult climatic conditions, high levels of fragmentation and inaccessibility of landholdings - in combination with relative physical remoteness, that make Saur village a typical example for a rural Indian mountain community of subsistence-oriented farmers. As a matter of fact, local agriculture is characterized by a high degree of own consumption, hardly capable of producing considerable surpluses, and thus hardly suited for output- and market-oriented 'conventional' agricultural production. Also, in an environment as fragile and complex as the one concerned here, human intervention in the form of agricultural activity, constitutes an all the more sensitive task and must be permanently and carefully monitored. Nevertheless, as in so many other marginal rural areas India, conventional agriculture is widely practised in the hill areas of Uttarākhand, too. However, with these regions being characterized by high degrees of inaccessibility and great scarcity and vulnerability of arable lands, this way of 'conventionally' producing crops comprises merely the use of chemically-based agroinputs – which nevertheless can be quite substantial. At times, farmers also report to buy seed material from the

market. Mechanized forms of agricultural production, however, do not exist in this scenario.

It is against this background that above all the long-term usage of chemical agroinputs – which is a fundamental component of the commonly prevalent conventional, output-oriented agricultural production – has had severe impacts on the local population's delicate basis of livelihood and is therefore a frequent topic of discussion amongst farmers. Moreover, since conventional agricultural production is not only geared towards increased crop yields, but also largely linked and subjected to market conditions, the inherently low competitiveness of subsistence holdings in the here investigated agricultural scenario in combination with substantial structural disadvantages – above all the remoteness to urban centres and limited market access – puts local farmers in a very disadvantaged position<sup>415</sup>. For the farmers of Saur village, any agricultural operation is a very risky enterprise and therefore, right from the outset of their agricultural endeavours, they very often find themselves in a relatively weak position characterised by high degrees of dependency – a fact which is all the more true when it comes to chemical-intensive conventional forms of agricultural production. Also, while conventional farming often tempts local farmers into the cultivation of cash crops and thus further exacerbates economic and environmental constraints, organic agriculture with its emphasis on local cultivation conditions – which includes the use of locally available natural and human resources and local species of food crops instead of capital-intensive investments - can lead to the sustainable improvement of the locally specific ecological basis. In marginal rural scenarios such as Saur village, it makes therefore especially sense to first of all increase local food security before focussing on the marketing of – possibly also organically grown – cash crops. Here, organic agriculture, through its focus on locality and its inherently high potential of promoting the long-term stability of local marginal farmers' basis of livelihood, can make a decisive contribution in terms of enhancing local food security and increasing the quality and diversity of the consumed foodcrops. At the same time, organic production can help making local organic farmers less vulnerable to outside influences that are beyond their control.

The adoption of organic agricultural in Saur village clearly must be considered against this background of marginality. It becomes apparent that in the here investigated locality, environmental particularities not only stand in direct proportion to crop vulnerability and food security, but are also inextricably linked to socio-economic marginality. Due to the widespread use of agrochemicals which, being a vital part of conventional, expansion-oriented agricultural production and the prevailing paradigm of 'modern', commodity-centered agricultural processes and increased outputs, has long been promoted and encouraged by official development policies<sup>416</sup>, virtually every local

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415 This aspect is discussed in detail at the end of the third chapter.

416 A detailed discussion of the historical developments and particular rationalities which have resulted in this approach can be found in chapter 2.

farmer has gone through the experience of being confronted with the evidently negative long-term impacts of this practice. However, in an environment which is characterized by such complexity and fragility as the mid- and high-altitude mountain areas around Saur village, resilience to human and natural ecological imbalances is very low and recovery from environmental degradation happens slowly. In this regard, according to the farmers themselves, the effects of the regular application of agrochemicals have come to massively undermine the local population's general efforts to sustainably stabilize their soil's health - and hence also their very basis of livelihood. From this perspective, there clearly is a need for an 'alternative' approach to agricultural production which is set apart from the highly inflexible, uniform prescriptions of conventional agriculture and its negative long-term impacts on the local basis of livelihood, and in the scenario outlined here, it became apparent that organic farming indeed has the potential to play a positive role in this respect.

#### **10.4 The Scope of Organic Agriculture II: Strengthening Localities**

The challenging environmental conditions not only have severe impacts on agricultural production and economic competitiveness, but effect virtually all aspects of life. With agriculture constituting the single most important economic sector and means of livelihood for virtually all of the area's population, also the people of Saur village are deeply rooted in agriculture and most of them perceive their personal identity to be essentially related to agricultural activities. This is all the more true in view of their 'multi-component farming system' where all elements – that is common lands, agricultural lands, livestock and households – are highly interdependable and closely interwoven, thus fundamentally sustaining each other through contributing both directly and indirectly to the overall stability of the whole ensemble. Being a predominantly rainfed scenario, especially agricultural land plays a crucial role and must be seen as the key resource within this system where each component is directly constitutive to the functioning and 'well-being' of the others. The fact that fundamental interrelatedness between people, soil, animals and surrounding landscape constitutes an essential constant in the local population's sociocultural self-image is somewhat omnipresent in both what farmers say and what they do and becomes most obvious in what I have termed 'strategies of comprehensive health management'. These clearly show that the strengthening of the linkages between various components of the farming system is widely perceived as a task of vital importance and commonly understood to be an obvious responsibility. It is an essential, comprehensive and deeply-rooted local conception and largely congruent with individual farmers' understanding of the basis of human well-being. The people of Saur village quite naturally detect a deeply-rooted relationship of almost direct proportionality between the health of the soil of their

fields and their own well-being<sup>417</sup>. It is through this close interconnection, they say, that the use of chemically-based agroinputs also poses serious threats to their own and their families' health. Therefore, while the highly uniform prescriptions of conventional agriculture are largely perceived to have significant negative repercussions, the basic concepts of organic agriculture are indeed essentially in line with local farmers own understanding of responsible agricultural production.

In chapter 5, it was extensively presented that there exist genuine and substantial links between Navdanya's approach of organic agriculture and the cultural repertoire of local marginal farmers in the area in question. This is especially true with regard to the conservation-minded management of local resources which is primarily aimed at achieving long-term food security and individual health and well-being through the stabilization of soil health and fertility. Here, the individual farming household represents a crucial point of intersection – not only in terms of theoretical considerations. Also local farmers and their families consciously work towards an effective long-term stabilization of their fragile basis of livelihood. To accomplish this, the people of Saur village carefully manage nutrient flows between their fragile agricultural system's different components, thus coinciding with a fundamental objective of organic agriculture. Also, these flows are based on locally available on-site inputs and so avoid the use of external agrochemicals – which is another highly important aspect when it comes to the much acclaimed advantages of organic agriculture. In addition, the farming households of Saur village are quite familiar with the idea of 'managing' their farms in a comprehensive manner. They are well aware of their central role for long-term agricultural success which is marked by an extraordinarily high workload - the latter aspect being especially true for women – and all of them are familiar with the fact that the long-term agricultural performance of their farms is directly related to their own efforts in terms of comprehensive management. Therefore, while the promotion of organic agriculture – especially in the context of rural development agendas – is commonly associated with the objective of involving local populations through putting them at the centre of activity, this ambition is fundamentally compatible with the self-image of the farmers of Saur village.

However, through the widespread use of chemical agroinputs and the long-term following after commercially oriented patterns of agricultural production, locally existing concepts and strategies of comprehensive health management have lost much of their relevance and potential. Against this background, though, Navdanya's efforts of providing local farmers with essential practical tools and assistance for more effective management – above all the passing on of organic management practices and the promotion of local seed material through establishing regional seedbanks – definitely has the potential to substantially contribute to the revitalization of farmers' own cultural

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417 A thorough discussion on the connection between the human body, crops and food can be found in chapter 5.2.1



repertoire of agricultural knowledge, strategies and practices. Furthermore, it appears that local populations can more easily relate to the underlying principles and concrete activities associated with organic agricultural production.

### **10.5 The Scope of Organic Agriculture III: Considering People**

In the here investigated scenario of Saur village, as a result of essentially taking into account local livelihoods and locally accepted strategies of preserving the former, organic agriculture clearly is contributive to the self-conception of local farmers. Upon reversion, this also means that it is more readily accessible, acceptable and implementable than conventional practices and the associated principles and objectives. Moreover, the self-understanding of farmers is marked above all by high degrees of reflexivity and activity, which becomes visible both in everyday activities and explicit statements. Especially the former point at the fact that the local people see themselves as being part of an essentially interrelated environment in which they may not be the only active and influential entities, but in which they act as custodians. At this, the conscious monitoring of the balanced well-being of the local system's multiple components clearly is at the centre of local farming households' efforts.

Following these insights, the preliminary considerations in chapter 6 clearly show that, even though local marginal farmers are subjected to an extraordinary number of limitations and constraints, they nevertheless show high levels of well-considered, calculated and reflexive activity. With actor-centered approaches to rural development commonly placing great value on the development of local farmers' capabilities, also this investigation suggested to indeed consider individual farmers greatly significant and energetic agents whose particular decisions and activities must be understood as key elements in the promotion, dissemination and adoption of organic agriculture. In the course of the then following, rather theoretical reflections it was also explained how, even though personal agency must be considered to be a highly influential factor, at the same time there exists a very close relationship between the individual farmer and his respective community – which entails the conclusion that individual practice must be understood as being reducible neither to individual dispositions or motivations nor to the respective social framework alone. Rather, it was found that it is marked by deep complexity and dynamic interrelatedness where a fundamentally relational perspective on dynamically unfolding relationships and activities contributes to a comprehensive understanding of the individual potentials of farmers and the relevance and implications of their particular decisions and actions.

Therefore, in order to strengthen this fundamental position, chapter 7 dealt in detail with local

farmers' individual dispositions and activities concerning the adoption and dissemination of organic agriculture within the rural farming community of Saur village. At this, reflecting upon certain approaches towards the diffusion of innovation<sup>418</sup> helped identifying and making visible important key factors which in turn again pointed towards the strong and influential position of the individual farmer. It was thus shown how it is above all specific individual conditions - structural requirements, behavioral differences and character traits - that have a considerable influence on the whole process and comprise a wide range of variables. In this regard, it was explained how differences in the gradual adoption of innovation reflect not only variations in the supply of adequate information – both on the existence of the innovation itself as well as information on its performance – but also point at underlying structural and behavioural differences between individual potential adopters. At this, it is important to realize that all these aspects have at their centre the individual farmer's agency and personal capability: Every farmer has the potential of acting as a source of new energy and to actively contribute to the movement of organic agriculture. Therefore, the individual farmer must be seen as effective and energized entities within who is vested with the fundamental potential of acting out his very own schemes and strategies. This means that, while ideas on organic agriculture are initially being 'inserted' into rural communities from the outside, it is always individual farmers who opt for or against them on often quite personal grounds and who then in turn essentially contribute to their dissemination within their respective societies. Taking into account the considerations developed in chapter 6, the investigation of these processes was based on a performative point of view that perceives the social fabric to be essentially made up of both dynamically unfolding relations and active individual contributions. Chapter 7 made it clear that, indeed, this approach is useful in pointing towards hitherto largely neglected complexity of the adoption and diffusion of innovations, while at the same time giving the activities, practices and capabilities of individual farmers their rightful place.

In this light, the adoption and dissemination of organic farming turns out to be a many-layered process of social interaction over time in which, depending on a number of crucial factors, individual farmers play a central part through taking deliberate and well-considered decisions. One of the main determinants necessary to that end is the respective farmer's status of information, and it was found that a good many farmers consider the acquisition of information and knowledge to be the main condition for the successful conversion to organic agriculture.

Especially from a development perspective that emphasizes local populations' self-determination and the bottom-up expansion of fundamental capabilities, knowledge on organic agricultural

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<sup>418</sup> An extensive discussion on the subject of classifying 'innovations' and the question of how organic agriculture must be understood as an innovative concept can be found in chapter 7.1

production is commonly maintained to be 'the capital of poor farmers' and a crucial element in the latter's efforts to gain more control over their own means of production, resources and, ultimately, lives. However, even though everyone involved seems to agree with the fundamental importance of the issue - disseminating knowledge on organic management practices also is commonly understood to be a key activity of the involved development agencies and organizations - it is still widely used in a very simplistic, undifferentiated way and therefore often generates substantial misrepresentations. At this, clearly, the much-vaunted, yet largely underresearched, 'organic management practices' are of particular interest and importance, and therefore, a whole section of this research has been devoted to the task of investigating in detail the exact origin and formation of the latter. This investigation made it clear that the very knowledge base underlying organic agriculture – and especially the organic management practices which are being promoted by Navdanya in the area in question – is only partly based on local farmers' knowledge and already existing methods and techniques, but rather is essentially constructed through a complex and dynamic process, involving elements from different knowledge assemblages and incorporating elements which might have originated in an altogether different domain of knowledge. Furthermore, it was hereby revealed that the promotion of organic farming in general, and the transfer of the related organic management practices in particular, clearly embodies a centre-outwards approach and, moreover, also encompasses a top-down flow of ideas.

Against this finding, it is the critical and constructive reconfiguration of different components of local farmers' knowledge in order to 'adjust' them to socio-ecological conditions that are possibly vastly different from their original context, which constitutes a key factor in the generation of organic management practices. It was thus found and explained in detail how particular individual actors, through broadening and reconfiguring different elements from different knowledge assemblages and -spaces, play a decisive role in the investigated process of knowledge generation, and how this process is essentially based on their personal knowledge repertoire, motivation and innovative capacity. Without a doubt, the importance of this factor of individual innovative contribution to the whole complex of organic agricultural knowledge is greatly underestimated and usually gets lost in the delusion of uniform global standards.

## **10.6 The Scope of Organic Agriculture IV: Building on Local Potential**

It is however very important to understand that, being themselves essentially constructed through processes of reconfiguring different assemblages of knowledge from different knowledge domains, the organic management practices in question exhibit quite fluid boundaries and transitions. This basically means that, unlike, for example, chemically-based external inputs which operate in a very uniform and predictable manner, knowledge-based innovations show a much higher transformative potential and 'materialize' in various different ways, finding their expression in innumerable local configurations.

Based on these insights, chapter 9 finally revealed that – even though being clearly founded on asymmetrical flows of information - the knowledge on organic agriculture which is passed on to the farmers of Saur village must primarily be understood as a resource which aims at opening up space in individual decision-making and promotes the expansion and inclusion of individual farmers' capability. Basically, organic management practices must not be seen as readymade pieces of technology, but as a knowledge-based framework or innovative impulses, leaving room for farmers' self-management and the incorporation of local cultural elements of agricultural production and livelihood strategies. In the case under examination it became clear how, due to the highly challenging environmental conditions, local marginal farmers' modus operandi is based on a more flexible and dynamic attitude anyway since they cannot afford to rigidly hold on to static methods and immutable information. At the same time, though, great care must be taken not to overwork closely interrelated and fragile livelihoods. Therefore, it has been observed that the local farmers do not merely deploy a range of crisis exit strategies the farmer makes use of when it is too late for target-oriented and planned action; Rather, it was found that many marginal farmers clearly pursue their own methodical approaches - which include not only careful and detailed observation and contemplation, but also deliberate and systematic trial-and-error experiments as well as the validation or invalidation of the latter. Local agriculturists must therefore be understood as energized agents who are not only interested in the long-term stabilization of their livelihoods, but who are also used to actively and creatively generate change through continuously employing their individual capabilities and knowledge. Against this backdrop, clearly the farmers of Saur villages are not only vested with the potential to make significant contributions in terms of the physical dissemination of externally inserted innovations, but also with regard to the latter's qualitative modification: While they are at centre of the adoption and intra-communal dissemination of organic management practices, at the same time they are also substantially engaged in the continuous, dynamic and creative process of implementing and transforming them.

It can thus be said that, with reference to what has been explained during the opening chapters of this research, organic agriculture holds great promise in terms of local rural development. Especially with regard to the Indian scenario where, by massively employing green revolution practices, decades of heavy overuse of natural resources have widely contributed to the erosion of local natural resources and where this situation is severely threatening the livelihood basis of millions of marginal rural farming households, organic farming provides a realistic alternative and way out of further environmental degradation and socioeconomic marginalization. Grounding the concerned marginal farmers' basis of existence on a more sustainable, locality-oriented agricultural basis rather than on a growth-oriented approach which depends on the usage of external inputs, was found to be meaningful and promising for a number of important reasons. All of these are however related to two fundamental issues which have been addressed in the course of this research and which must be regarded as a touchstone when it comes to considering and evaluating the transformative potential of organic agriculture in marginal rural farming communities, namely ecological sustainability and, inseparably linked with this, social equity. The key question whether organic agriculture holds the potential of triggering a long-term development that is inherently regardful of these issues, clearly depends on its basic capacity of putting people at the very center of focus. From this perspective, it was explained how organic agriculture can make a substantial contribution to the long-term stabilization of soil health, thus preserving marginal farmers' single most important natural resource. This not only implies the steadying of local food security situations, but also effects numerous positive changes in terms of local peoples' well-being. Therefore, while organic agriculture is conducive to the strengthening of local agroecosystems, as a result of this it also helps in reducing marginal farmers' multiple vulnerabilities. In addition, it was found that in the case under examination, the basic principles of organic cultivation in essential respects were consistent with local conceptions of agriculture and its relevance for the local environment, thus showing a high level of cultural sensitivity. It was further explained how organic agriculture indeed provides ample scope for the comprehensive unfolding of individual farmers' potential – both in terms of structural preconditions as well as individual motivation and creative potential. Since organic management practices must be seen as rather fluid, dynamic and knowledge-based resources, they leave substantial room for individual, flexible and dynamic adaptation and transformation. The crucial factor for their successful implementation therefore clearly is individual agency.

In summary, it can clearly be stated that organic agriculture has the potential to substantially strengthen marginal localities. Especially in the Indian scenario, where the local livelihoods of rural farming communities are increasingly coming under massive pressure from several sides, organic farming holds great promise in terms of realizing a socially and environmentally accountable

approach to bottom-up development which fundamentally takes into account the crucial linkage between the ecological and socioeconomic aspects of marginality. Indeed, through its fundamental orientation towards the inclusion and strengthening of particular localities as well as its quality of providing space for the individual potential of marginal farmers, organic agriculture must clearly be considered a serious opportunity of allowing for meaningful participatory development where local farmers and their households and communities can actively draw from their own cultural reservoir and expertise.

### **10.7 Looking Forward: Further Research**

Organic agriculture is a burgeoning segment to achieve environmentally sensitive and socially inclusive rural development. Over the last two decades, its popularity has increased significantly as a direct outcome of the new development paradigm which emanated from the first HDR in 1990. In addition, it was at about the same time that substantial after-effects of green revolution practices became visible – which is particularly true in the case of India. Therefore, given its recent upsurge and ‘alternative’ nature, the academic study of the role of organic agriculture for marginal rural communities is at a very nascent stage. Most of the studies done on the subject are either rooted in purely theoretical development literature or in macroeconomic studies on the profitability of developing international market potentials. While these studies focus mostly on the political and financial side of promoting organic farming, its concrete implications and meanings on the microlevel, based on relevant ethnographic data, is a relatively underresearched issue so far.

Against this background, the here presented research has extensively dealt with exactly these weak points, revealing hitherto underrepresented and neglected perspectives and dynamic processes which are particularly relevant from rural farmers’ perspectives. While commonly, in favour of an overly narrow focus on the economic situation of marginal farming households, other, maybe even more relevant aspects are being pushed into the background, the present research deliberately has largely avoided to deal with the subject of income-generation. A major reason for this decision can be found in the opening chapters of this research, where it was explained at length how - especially against a backdrop of rural development considerations - discourses on the long-term effects of organic agriculture are often being reduced to their economic dimension. The argument that organic agriculture had the fundamental potential of enhancing income and therefore automatically triggered comprehensive improvements, is often employed with such regularity that its significance is now severely diminished. In fact, it is commonly used in a very generalizing, if not even reductionist way, which is why this research pursues an approach of coming closer to local peoples’

opinions and expectations concerning organic farming's other features - which often go unnoticed in the light of usually overly powerful economic aspects.

Nevertheless, the latter definitely have a certain value and it must be noted, that the fact that in Saur village, over the last decade, there has developed a lively community of organic farming families not only lies in its substantial broadening of the scope for individual activity, decision-making and the inclusion of local cultural elements summarized above, but also is connected to the fact that Navdanya's approach of promoting organic agriculture includes capacity building measures that support very down-to-earth considerations regarding the cost-effectiveness of and additional income opportunities through organic agricultural production. In its attempt to promote and solidify organic agricultural production in rural areas, over the organization over years has worked out a rather comprehensive approach of concrete measures, which has also been designed for the purpose of eventually enabling rural marginal communities to generate additional income from a field of new activities and practices. Apart from a broad number of activities that are related to agricultural knowledge and practice, these also include efforts of direct marketing of agricultural products as well as concrete schemes of capacity-building in terms of processing and value-adding activities<sup>419</sup>. Also here, particular emphasis is placed not merely on the development of profitable agricultural production and subsequent marketing of the produce, but also on the essential issue of actively integrating local farmers, their households and even whole village communities into numerous activities and processes at different stages.

It is therefore not the case that marginal farmers and farming households in the here investigated local scenario are merely concerned about issues of adequate food supply or matters of health and well-being of themselves and their immediate surroundings. Although these are clearly issues of great relevance to local the local population and far from being an idealized notion, at the same time, however, virtually all of the local farmers – i.e. organic and conventional alike - strive for the production of a surplus of marketable cash crops – an ambition which surely is attributable to the fact that agriculture constitutes the single most important economic sector and the major means of livelihood in this area and which fosters the multiple dependencies mountain farmers in the area are facing. Needless to say that, from a monetary perspective, the long-term preservation of soil fertility commonly is not only expected to provide a safe and stable supply of healthy, high-quality food, but also to ensure future monetary income. Against this background, the fundamental means of achieving this aim are frequently maintained to imply substantial monetary savings for marginal farming households. It is of course true that one of the immediate benefits resulting from the promotion of the use of freely available local agro-inputs – and this includes also the making

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419 An extensive introduction into these schemes has been given in chapter 4.

available of seed material – lies in the monetary savings of individual households. However, although this argument is regularly confirmed by local farmers during the first talks, over time it fades into the background and is replaced either by the above-described findings related to issues of health management and by matters of *earning* money rather than *saving* it<sup>420</sup>. Therefore, from a monetary perspective, it is not the savings potential of organic agriculture which is of primary interest to the farmers, but rather the opportunity to generate more income from their produce. Also here, more research is needed in order to find out whether this mindset might indeed have its origins in the decades-old and persistent promotion of highly capital-intensive and expansion-oriented forms of agricultural production on behalf of the relevant Indian authorities where, more exactly, subsistence farming was commonly evaluated according to its productivity, competitiveness and share of marketed produce<sup>421</sup>.

Apart from the above-mentioned theoretical considerations of shifting the basic focus of this research away from the somewhat 'conventional' - or income-oriented – perspective, there are also practical reasons for this: While local marginal farming households have long since supplied Navdanya with marginal quantities of marketable agricultural produce, it was only at the time of the field work and research to this research when wider efforts in this regard were initiated. This primarily involved numerous interesting schemes concerning the expansion of rural networks into urban areas and corresponding fields of activity which have been designed to entail economic betterment for individual farming households and marginal rural communities on the one hand, and to produce economic gains for Navdanya on the other. In addition, especially women had become the focus of attention for several good reasons in this context. However, it is probably only now, at the time of the finalization of this research, that the first effects of these schemes are becoming visible. Therefore, while the economic success of this strategy ought to be subjected to further

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420 The only exception in this regard is the frequently discussed subject of transport costs of agricultural produce and, indeed, there is not a single farmer who does not have strong feelings about the associated costs. Even though the latter clearly are perceived as a permanent nuisance, it must also be noted that, due to Saur village being relatively well connected to public transport, this issue is of only minor importance for its people. It is for this reason that, within the framework of this research, a detailed investigation on the subject of transportation, the resulting costs and Navdanya's attempts of attenuating these was reduced to a description on the general dimension of this problem at the end of chapter 3. However, this situation does not apply to the more remote and thus even less accessible areas of Uttarkāshī district, where the massive structural disadvantages that are responsible for not seldom exorbitant transportation costs are of much greater presence. In order to obtain a more complete picture, future research should consider also this aspect more closely.

421 It is, however, striking that this notion is largely in line with India's long-standing agricultural policy and schemes of rural development where the main target was to enable farmers to participate in markets, with the general strategy being the increase of farm productivity through introducing new technologies and expanding market activities. From this perspective, subsistence agricultural activities were almost always considered from a viewpoint which associated marketable surpluses with efficiency, progress and modernity whereas attributes commonly ascribed to subsistence farming were usually associated with backwardness and inefficiency. During the course of the second chapter, the historical dimension of this situation was unfolded. In addition, it was explained at length how this overall orientation often is still very firmly in place today.



research, at the same time the latter must also include in-depth investigations into the associated socio-environmental implications in order to avoid a reductionist perspective.

On a final note it can be said that this research strongly suggests that the individual farmers' agency plays a much greater role than is commonly understood or, to be more precise, than is commonly taken into account when it comes to considering rural development. Through following and investigating the promotion of organic agriculture and its associated management practices within a very particular and highly personalized context, this dissertation indicates a number of crucial aspects from which it can be concluded that organic cultivation indeed has the potential to give due weight to local conditions and potentialities. Its promotion and implementation thus promises the comprehensive and sustained improvement of the living conditions of marginal farming communities. At the same time, evaluating issues associated with income-generation and the marketing of organic crops lie beyond the scope of this study. Nevertheless, it reveals a number of crucial aspects for the sustained promotion of organic agriculture within marginal rural contexts, thus fuelling the author's hopes of not only giving local farmers their rightful place in rural development, but of maybe even stretching the applicability of this research to other localities beyond the here investigated scenario.

Against this background, the here applied, fundamentally actor-centered methodical approach is a perfect fit for the investigation of organic agriculture as an efficient 'development tool' for marginal rural areas.

## Methodological Appendix I: Interview Excerpts

### 1. Excerpt from interview with B. Shaw on November 29<sup>th</sup> 2010:

D: And ah... and what are the goals of your... of the UOCB, what is the overall... aim?

B. Shaw: See, basically, ah... the state of ah... Uttarakhand ah... decided to ah... ah...ah... push organic farming especially for the mountain... districts as a trust area for agricultural development in a survey in 2001... And the state was formed in 2000, November. And ah... there was a visionary bureaucrat at that time, Dr. Tolia (?) who said that it's not just about saying something, if we're really up to do something, ... we need have an independent agency ah... working only for ah... the sector. And the present agency is the (line?) departments, as they say. If they're not...ah...ah...sort of, they won't be able to push the movement really in a movement ...form, we'll just remain as a... as...as department ah you know... program and... (...) move forward from this. So the Board was ...was established and we are very clearly that...support the farmers for ah...trainings. For that... we develop the technical modules, we don't do extension really... so much, because we don't have the extension ...people. We are not present, the Board is not sort of visible in the ...in the...in the districts or in the villages so much. But we prepare the technical modules. We have a training center in Almora ah... (...) and that's where we do a number of trainings, institutional training programs for a number of agencies. And... we also prepare the modules for training which are supposed to be ... then carried out by the extension departments out in the districts.

(...)

(for complete transliteration see digital medium)

### 2. Excerpt from interview with B. Shaw on November 29<sup>th</sup> 2010:

D: Okay. ... Ahm... Well, and...and.. what... what does 'organic' mean ...ah... in the sense ...in ...in... in the overall picture for UOCB? What ah... what is organic? Ahm... what does it mean for you... you know, like what is the...

B. Shaw: For organic basically why is the government interested in organic is... (vitality?) ...because it is...ah...it's a livelihood...ah... programme. Nobody is interested right now of organic for its environmental...reasons ... or its...ah...you know... other perhaps dimensions. But right now, it's mainly for its... its ah... ability ah...as...as a ...livelihood generation...ahm...

D: ...to farmers.

B. Shaw: ...diversification for the farmers. And especially for the hill regions where ...there is not much any chemical...ah... agriculture anyway. And then, neither there is scope for conventional agriculture. Ah... there are both things: One, it's not being practiced. Two, there's no scope for it. So, how do you... how do you develop those ah...areas? Especially those areas which (...) under rainfed? So organic... seemed to be a pretty good idea. That was through organic that the farmers could...ah...first through the different composting techniques that we have been telling the farmers and the plant protection while using local...you know, knowledge. And...even biological control at many places, it has worked. Our production has ...not gone down, in fact, in many areas it has actually gone up. And if the... there is a surplus which can come to the market, ...with a premium... and then if the Board's intervention in terms of aggregating the stuff.and...and...and... getting

ah...direct buyers... now that ah...has...in ah...its different ...ah... you know, ways...brought about and increased livelihood...you know...for the farmers. So that's important and that's the government wants to hear about and it's happy...that we have been able to bring about ah... you know an income generation from ...10 to even 80(?) percent among more than 5,000 or 6,000 farmers in the last...six, seven years. So the... so they're happy and it's good. And the other part, the flip side which right now is not being talked about but which is already there, is that the ...the soil...you know...conservation which is taking place...and the water retention...and the...the...health of the animal and the...farmer...and the generation of biomass. And so these are the other ... (...) the manifestations which are all there...

(...)

(for complete transliteration see digital medium)

### **3. Excerpt from interview with B. Shaw on November 29<sup>th</sup> 2010:**

B. Shaw: I don't know about the other hills...but in our hills like I said from the 60s, ...onwards...the downward trend of men started.

D: So they migrated to the city, to Dehradun or...

B. Shaw: They don't migrate. They just... okay, migrate, but not forever. They leave their... their families there. They move out for employment. And that has been a tradition of at least Uttarakhand. I don't know about Himmachal and other places...

D: I think the army is very big here, no...

B. Shaw: Army was big...and...and I think all started with the...this here is mainly because the literacy...I think in Uttarakhand has been...high...very high for a very long time. Somehow the people of this region...ah... treated illiteracy as a very serious ...even though they may be very poor but education was something which is a must. So a lot of people moved out to study...They may be very poor but they just moved down to study and they ... got themselves good jobs everywhere, even when we were part of Uttar Pradesh...the other state...you will see that the percentage of ...ah... government people from here, the army, the government, the bureaucracy, the police...and all of (...) hires from this place. This region has given three...three chief ministers to UP. And... a number of bureaucrats, IS have been of this region. So I feel the...there was this...ah...thing of moving out from this place in search for knowledge, information and better jobs. Guys ... didn't take their families with them. They came... some of them came back and some...some of them...just...went and didn't come back at all. And others...got left behind. So I think, what I'm basically... it's...it's...ahm...influence over agriculture suffered. So agriculture became a kind of an activity ...or...or... a kind of a...you know...not just an activity, ... it became a kind of a...a whole world which was ...sort of, you know, carried forward only by the women and the old people.

The old people started dying...and the women were there... and the able-bodied young fellows just started moving out... So I feel that the transition... from all the knowledge into the next generation never happened. And let me tell you the women of this place are very different. They, in fact, are the ones who are the farmers. Excepting for plowing the field, they're doing everything else. ... Whether it is the seed... whether it is ah... you know, the...they...the composting part, the animal part, the bringing in of biomass part...the...the harvesting part. The women have ah... loads(?) of knowledge. ... But they... ah.. don't ...they can't talk about it. They will simply do something

because it is being done how they have, you know, ...incalculated it or how they have seen maybe. And I would still say that there is a lot of...ah...knowledge system which ... prevails...but I... I can say that the compost part was something which they were not...they were not following...plant protection part, the doing was not so great because...I feel that in the earlier times, maybe it was not needed so much. Ah... the...the pitcomposting which they were doing was good enough, I guess, it was giving them...because that time it was fine and...the productivity was fine and I feel that the winter rains that we have ...ah...for the last 10 or 15 years...the winter rains of Uttarakhand which ...ah...has been... going down, then...and..you know, the graph is being low...very steadily. I think that has played a very, very...the most important role in deciding the agriculture future of ah...of the state.

(...)

(for complete transliteration see digital medium)

#### **4. Excerpt from interview with A. Jani on April 28<sup>th</sup> 2011:**

(...)

*D: Okay. And you can see like ah....ah... an increase in domestic demand ...in...*

A. Jani: Ya...

D: ... as well organic products ah...and diverse...

A. Jani: Yes. .. I want to give you an idea of some of the numbers ahm... In Delhi alone...ah...our sales ...in this last year...have increased by 65% in one year. ...So we have reached domestic sales for the first time ... of one crore. ...Pre...Previous to that...ah...you know...our total domestic sales of food, vegetables... everything...never crossed 50, 60 lakhs. ... So... We're suddenly ...in one year... And I think it's a function of the markets as well as ...you know our supply chain getting tighter... But in one year you've seen this level of growth...Next year we're hoping to do...you know... a similar percentage of growth...domestically...let alone export... whatever comes. So ah... there is a demand for it. And...what we are selling is the diverse...full basket. Ah...you know...and...people come to us. And they talk to the marketing team and say: If I buy this rice...what are the benefits of this? So... I think it's a question of if you don't have it in front of you people don't know ...that it exists and there are benefits of it. If there are options available, then...you know...intelligent consumers are willing to exercise that options.

(...)

(for complete transliteration see digital medium)

#### **5. Excerpt from interview with Dr. V. Bhatt on January 11<sup>th</sup> 2011:**

*D: What is the group certification then?*

Dr. V. Bhatt: Group certification means that... ah... this is called ...Internal... You form a group. Group of farmers ...Then they...ah... and you make a system... ICS, that is called ICS... Internal Control System. So you form an Internal Control System, then you make the diaries and you ...then you're responsible for filling the documents and all that... Of the farmers, you know. You have

to ...ah... make the traceability system right from the farmers' fields to the trader. Or may... if you have... ah...you know, outlets, then it has to be up to the outlets.

(...)

(for complete transliteration see digital medium)

#### **6. Excerpt from interview with D.S. Negi on March 27<sup>th</sup> 2011:**

D.S.Negi: Generally you know, the...ah...ah... you cannot say everybody. The young generation you can say that. Because young generation when they're born...they didn't see all...these old techniques what I'm talking...what we're...using in the Navdanya and what ah...organic farmers use. Their parents definitely did. But they seen only and ah...you know...commercial farming. They have to buy seed from...market, they have to buy seed...ah...fertilizer from the market (...). So they seen since they're born. (...) they work in the field...but they know...tractor can plough only field...one...shopkeeper can supply you seed and your ... fertilizer...your...everything. And you don't have to make the compost. You can not con...convert this all by ..compost. (...) So they get that knowledge from since they're child.

D: The young generation.

D.S.Negi: The young generation. So that's why you have to teach them everything. But...if you go to...old generation, ...the knowledge they're having...sometime you'll surprise to know their knowledge. They have such a good knowledge.

(...)

(for complete transliteration see digital medium)

#### **7. Excerpt from interview with D.S. Negi on March 27<sup>th</sup> 2011:**

D.S.Negi: 'And this all our people knows...our coordinators we share with them also. ... When we have a coor...whe...when we do coordinator meeting... ah... we share with them also...okay...I went to... Orissa or some farmer gave me this idea let's try this and (...) getting good benefit with that. And you people can do this also. ... So we always...pass message everywhere. Like here, you know. ... Even sometimes ah...we...ah...discuss with our family also, you know. ... They don't have any meanings of this but...you know...we got ah...excited to share this knowledge with somebody. So... like that you know...'

(...)

(for complete transliteration see digital medium)

**8. Excerpt from interview with Dr. V. Bhatt on April 2<sup>nd</sup> 2011:**

(...)

Dr. V. Bhatt: 'So innovations, no...And ah...we ...we collect them, we ask farmers what are you doing, how you managed... So and then you know, we also tell other farmers just to experiment it, whether it works or not. Or whether it was just a chance.'

(...)

(for complete transliteration see digital medium)

**9. Excerpt from interview with Dr. V. Bhatt on April 2<sup>nd</sup> 2011:**

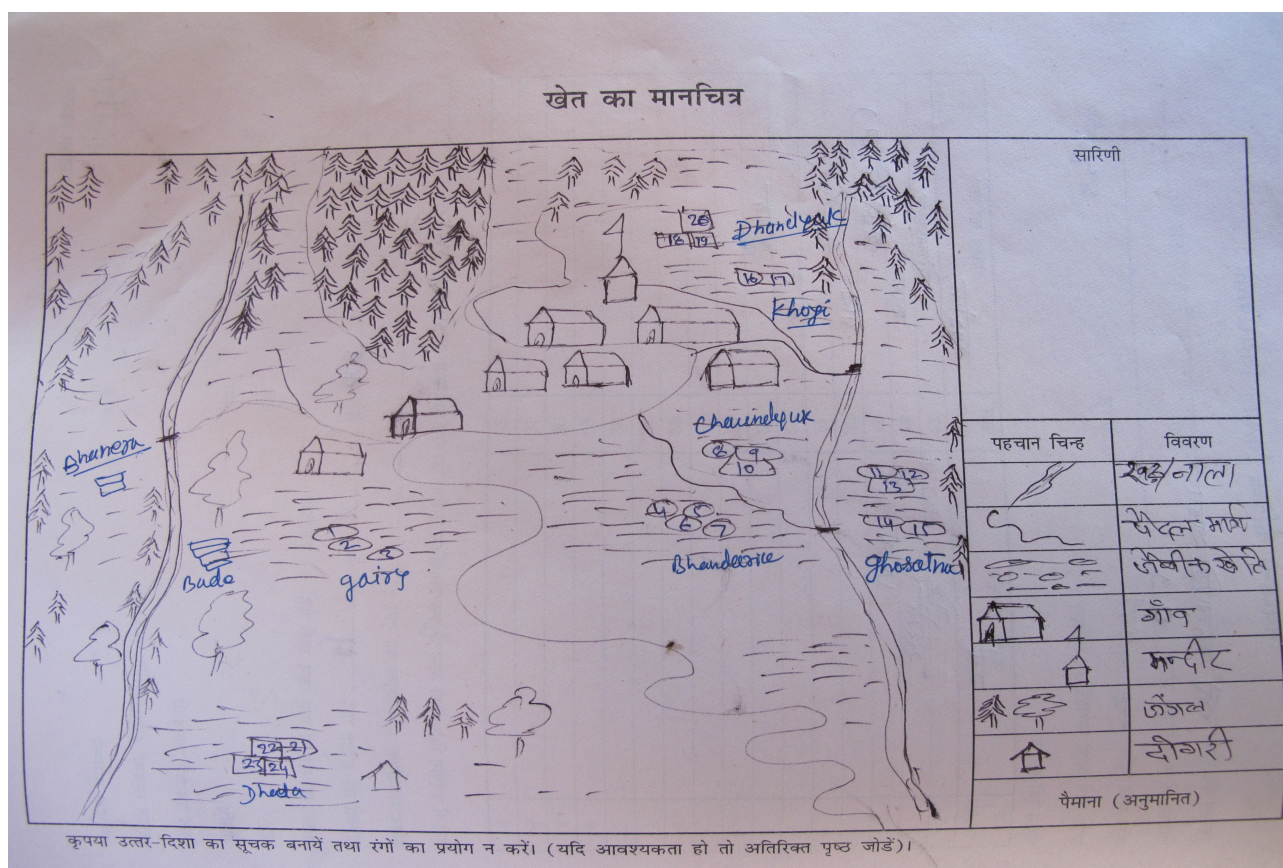
(...)

'I can tell you that ...ah I learned from the farmer ah...farmer the...the...mhhh...ah...the plants those who have blue leaf...blue flowers...they are very good for pest control. And I...I found it very effective, you know. (...) So you just collect the...ah...collect the plant with blue flowers...and you try it. Actually it has the alkaloids, you know...ah...you know, that kind of ...ah... I mean some...poisonous (...) The plants...which are not eaten by the goats and sheeps...very interesting, you know (...) And why they're...why they don't eat it...because either they're bitter. ... And when they're bitter that means that they have some alkaloids.'

(...)

(for complete transliteration see digital medium)

## Methodological Appendix II: Pictures



**Picture 1: Local farmer sketches map of scattered property**



**Picture 2: Fragmentation at Saur village**



**Picture 3: Farmer presenting varieties of kidney beans**



**Picture 4: Different rice varieties at Navdanya's Bija Vidyapith Seed University**





**Picture 5: Farmer training at Navdanya's Bijā Vidyapīth Seed University**



**Picture 6: Farmer training at Saur village with a group of Bhutanese farmers.**



Picture 7: One of the organization's seed banks in Saur village



Picture 8: Meeting of Sānkri's 'Mahilāe Anna Swarāj Samūh' and the local coordinator



**Picture 9: A typical external Kothār in Gundayatgao**



**Picture 10: M.D. Unlocking the family's Kothār**



**Picture 11: M.D. Preparing a drainage in a field.**



**Picture 12: Farmer working in the field**



**Picture 13: C.S.'s house, Saur village**



**Picture 14: Usually, fresh gober is simply spread on the fields and then incorporated via ploughing**



**Picture 15: C.S. Collecting fresh fodder leaves for his cattle**



**Picture 16: V.S. showing his apple orchard at Posla**



Picture 17: Vermicompost in Saur village



Picture 18: On the bucket has been written a formula for the production of jivamrt



**Picture 19: R. and G.P.G. presenting compost**



**Picture 20: B.S. applies his organic 'tonic'**



## ABBREVIATIONS

ACF	Ambuja Cement Foundation
APP	Agricultural Pricing Policy
APEDA	Agricultural and Processed Food Products Export Development Authority
BDAI	Bio-Dynamic Association of India
CACP	Commission for Agricultural Costs and Prices
DAP	Di-Ammonium Phosphate
DASP	Diversified Agriculture Support Project
EEC	European Economic Community
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
GHI	Global Hunger Index
GDP	Gross Domestic Product
GOI	Government of India
GPS	Global Positioning System
HDR	Human Development Report
HRV	Highly Responsive Variety
HYV	High Yielding Variety
IAC	IFOAM Accreditation Criteria for Certification of Organic Production and Processing
IAY	Indira Awaas Yojana
IBS	IFOAM Basic Standards for Organic Production and Processing
ICAR	Indian Council of Agricultural Research
ICS	Internal Control System
IFAD	International Fund for Agricultural Development
IFOAM	International Federation of Organic Agriculture Movements
IIEWS	Info International Educational and Welfare Society
IRRI	International Rice Research Insitute
IUWFS	International Undertaking on World Food Security
MAP	Monitoring Agri-trade Policy
MPI	Multidimensional Poverty Index
MSP	Minimum Support Prices
NABARD	National Bank for Agriculture and Rural Development

NFP	National Farmers' Policy
NGO	Non-Governmental Organization
NPOP	National Program for Organic Production
NSOP	National Standards of Organic Production
NSSO	National Sample Survey Office
OPV	Openly Pollinated Varieties
PMGSY	Pradhan Mantri Gram Sadak Yojana
RBI	Reserve Bank of India
RFSTE	Research Foundation for Science Technology and Ecology
RPS	Retention Price Cum Subsidy Scheme
SAS	Situation Assessment Survey of Farmers
SGS	Société Générale de Surveillance
SGSY	Swarnjayanti Gram Swarozgar Yojana
SSP	Single Super Phosphate
UOCB	Uttarakhand Organic Commodity Board
USAID	United States Agency for International Development
WCED	World Commission on Environment and Development
WHO	World Health Organization

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