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ORIGINAL PAPER

# “It was Hard to Come to Mutual Understanding . . .”— The Multidimensionality of Social Learning Processes Concerned with Sustainable Natural Resource Use in India, Africa and Latin America

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**Abstract** Sustainable natural resource use requires that multiple actors reassess their situation in a systemic perspective. This can be conceptualised as a social learning process between actors from rural communities and the experts from outside organisations. A specifically designed workshop oriented towards a systemic view of natural resource use and the enhancement of mutual learning between local and external actors, provided the background for evaluating the potentials and constraints of intensified social learning processes. Case studies in rural communities in India, Bolivia, Peru and Mali showed that changes in the narratives of the participants of the workshop followed a similar temporal sequence relatively independently from their specific contexts. Social learning processes were found to be more likely to be successful if they 1) opened new space for communicative action, allowing for an intersubjective re-definition of the present situation, 2) contributed to rebalance the relationships between social capital and social, emotional and cognitive competencies within and between local and external actors.

**Keywords** Sustainable use of natural resources · Social learning processes · Communicative action · Local knowledge · Expert knowledge · Power

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## Introduction

A major difficulty in striving for sustainability is the entirely normative character of the concept; to make it operative, individuals and groups must translate it into action-guiding ethical values (Wiesmann 1998). Sustainable development requires an integration of the ecological, social and economic spheres of life, with a view to achieving intra- and inter-generational equity (United Nations 1992). Thus, striving for sustainability increases the already high level of complexity of current forms of societal interaction and organization, with the result that uncertainty and risk have become immanent categories of development. Because of the close relationship between complexity, uncertainty and risk, sustainable development should be conceived of as an emergent systemic societal learning process aiming at changing the norms of interaction within and between different social actor groups (Ramírez and Fernández 2005).

‘Action research’ is both a concrete approach and a means of operationalising such societal learning processes. ‘Action researchers’ explicitly intend to get involved in the flux of real-world situations, aiming at mutual, collaborative, critical and deliberation-based interaction about specific issues and between researchers and non-academic actors (Checkland and Holwell 1998). Action research implies participating in societal processes of knowledge production that clearly go beyond the idea of ‘knowledge or technology transfer’. Action research thus recognises that solutions to ‘real-world problems’ can only be developed on the basis of an integration of scientific and non-scientific forms of knowledge. This is particularly important in the development context of non-western societies, where ‘action research’ always leads to an encounter between highly diverse and often competing and contradictory forms of knowledge, as represented for example by indigenous people, shamans, scientists, experts, bureaucrats and politicians.

Kemmis (2001) distinguishes between three approaches in the theory and practice of action research. The most prominent is a ‘technical’ approach, mainly concerned with the functional improvement of certain practices. This approach is complemented by action research of the ‘practical form’, which besides aiming at functional improvements, reflects on the pertinence of the underlying goals and objectives by taking account of the ways through which they are linked to certain forms of self-understanding and context. The third form, ‘critical or emancipatory’ action research, which aims at connecting the personal and political levels in order to “overcome felt dissatisfactions, alienation, ideological distortion, and the injustices of oppression and domination” (id.: 92), is much less practiced.

This last form of action research can be linked to the emerging concept of the ‘social learning approach’. The ‘social learning approach’ has become increasingly important in environmental policy-making both in developed and developing countries (Parson and Clark 1995; Wollenberg *et al.* 2001). It offers a way of making operative the idea of the ‘emancipatory’ approach of action research. The ‘social learning approach’ represents a philosophy focusing on participatory processes of social change; it is based on an actor-oriented approach that forms part of a theoretical framework in which social processes are defined as non-linear and non-deterministic (Woodhill and Röling 2000). To the social learning approach is informed by a social constructivist perspective and is closely related to ‘systems learning in organizational contexts’, as proposed by Hwang (2000).

The shift from multiple to collective cognition is defined as a key feature of the social learning approach (Röling 2002:35). Multiple cognitive agents are understood as actors tending to maintain mutual isolation. But the more they become interdependent, e.g. in the context of resource management, the more they are likely to get caught in conflictual or competitive, power-driven relationships emphasising the differences between them. In

such situations, action research based initiatives make it possible to broaden the space for communication, allowing for more reflexive communication, e.g. through platforms or fora for the deliberation about the use of natural resources and the negotiation and coordination of relevant aspects and activities. Such reflexive communication enables multiple but separate cognition to develop into collective and consensual cognition. The shift from multiple to collective cognition is legitimised by recent experience in the field: diverse groups who interact as problem solvers in this manner have been found to frequently outperform groups of highly specialised experts (Hong and Page 2004).

### **Social learning, learning loops and communicative action**

Social learning processes focus on institutional ‘double and triple loop learning’ (Maarleveld and Dangb’egnon 1999). Instead of unilaterally improving the performance of existing institutions and structures (‘single loop learning’), social learning processes aim for ‘double loop’ learning. This implies a focus on the transformation, innovation and creation of new intra- and inter-institutional norms of interaction, taking into account the principles of sustainability. Double loop learning is often related to what is considered to be ‘triple loop learning’ (Flood and Romm 1996). ‘Triple loop learning’ takes into account that double loop learning can be disabled if one of the other two dimensions (single and double loop learning related to performance and norms respectively) starts to ‘colonise’ the other. Instead of co-evolving as two qualities of personal or collective learning processes, one domain potentially loses the possibility of being an arena for gaining, new unexpected insights. Consequently, triple loop learning puts forward a third question: in addition to asking whether participants ‘are doing things right’ and ‘are doing the right things’, the question is now whether “rightness [is] buttressed by mightiness and /or mightiness buttressed by rightness” (Flood and Romm 1996:229). Triple loop learning is therefore based on a complementary view of theories and methodologies that emphasise the diversity of—probably—insoluble issues at stake. This is particularly important in the field of sustainable development where—due to high levels of complexity and uncertainty—it is essential to consider the emergent qualities of social and natural processes.

What kind of social interaction makes it possible to relate institutional transformation with different forms of learning? As pointed out by Røling (2002) sustainable resource management requires moving beyond a simple aggregation of individual preferences. This implies that values and visions related to the ‘nature’ of human beings and the societies they build become part of the communication process. This in turn entails institutional transformation, i.e. overcoming the too simplistic assumption underlying many conventional theories of negotiation and bargaining that the pursuit of self-interest is the ‘only viable’ or ‘second best’ way of balancing the interests of the different groups that form a society. Within the context of sustainable development, defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations 1992), social interaction and institutional transformation of this kind is particularly important. Indeed, because future generations cannot participate in current negotiation processes, sustainability-oriented development must explicitly go beyond the search for a consensus based on the assumption of fixed preferences, and the pursuit of self-interest by individuals and groups currently alive.

Røling and Maarleveld (1999) point out that the social learning approach allows to avoid the pitfall of understanding social processes only in terms of an aggregation of individual preferences by adopting a systemic view and taking account of the distinction made by

Habermas (1984) between ‘strategic’ and ‘communicative action’. They highlight that Habermas has done much to place social learning and collective action on the agenda as an alternative to development unilaterally relying on technology and competition. Taking account of the ‘theory of communicative action’ thus is a central element of the social learning approach, which is best described as a means of shifting from strategic (egocentric) to communicative action, meaning that individual and collective action is coordinated on the basis of a joint definition of action-relevant situations (Habermas 1984).

The criteria of ‘comprehensibility’, ‘truth’ (with respect to the objective world), ‘rightness’ (with respect to the normative social world) and ‘honesty’ (with respect to the actors’ subjective world) used by Habermas (1984: 99) for the definition of communicative action can therefore be applied in further analyzing the transformation of existing or emerging new forms of interaction and the kind of collective learning processes associated with them. Habermas (1990) explains that all participants in communicative action must be free to question or introduce any proposal, to express any attitude, wish or need, and that a symmetrical distribution of opportunities to contribute to the debate must be assured. Moreover, he argues that enough time must be available to come to an agreement, implying that the outcomes are determined only through the force of the better argument. (id.: 88–89). Habermas’ theory is essentially emancipatory and agrees well with action research, allowing to build a bridge between theory and transformative action in concrete real-world situations (Kemmis 2001).

The theory of communicative action is particularly interesting for the analysis of the interrelation between diverse forms of knowledge, e.g. peasants’, experts’ and researchers’ knowledge: instead of trying to make a scientifically defined truth claim, communicative action is based on considering the basic conditions necessary for defining collective action based on ‘intersubjective validation’. The theory of communicative action thus provides an interesting background for dealing more systematically with the highly heterogeneous approaches, projects and programmes dedicated to ‘sustainable development’. In this view, ‘participation’ and ‘empowerment’, generally used in an undifferentiated manner and as an end in themselves, become the means to create space for more communicative action in spheres where strategic action prevails.

Stressing the importance of communicative reasoning as part of social learning processes does not mean, however, that one ignores the fact that ‘strategic reasoning’—as this egocentric and goal-oriented concept is called by Habermas—shapes an important sphere of social life. However, as pointed out by Leeuwis (2000), although social learning approaches occupy a central place in the transformation of ‘strategic’ into ‘communicative reasoning’ in the sense defined by Habermas (1984), social negotiation based on self-interest needs to be taken into account as well, since sustainable development has a high degree of complexity, uncertainty and potential conflictivity. Although the concept of communicative action does not play a prominent role in sustainable development debates, a growing number of studies highlight its relevance to rural development (Phelps and Tewdwr-Jones 2000; Purdon 2003) and urban development (Ahearn 2000).

While this more emancipatory understanding of sustainable development is increasingly important in the North, the situation in Southern countries is different: although participatory approaches to development have a long tradition in Southern countries, the potentials and limitations of the theory of communicative action for analysing the changes in patterns of social interaction still need to be reviewed more systematically (Jacobson and Storey 2004).

The premises outlined above imply a high priority for dialogue and participation based on specific patterns of communication. Narratives thus play a fundamental role in the search for

more communicative action. According to Harris (1995), narratives are used to organize the experiences of individuals; they play an important role in the forming of social groups, guide the processes of socialization, and are used to maintain control in organizations. Moreover, Somers (1994:606) points to the narrative approach from a more general theoretical perspective, stating “. . . that it is through narrativity that we can come to know, understand, and make sense of the social world, and it is through narratives and narrativity that we constitute our social identities.”

Research on social learning processes has demonstrated that social learning cannot be forced upon actors. Instead, actors can be positively influenced by the creation of learning situations within social spaces that make it possible to involve different actor categories within real-world social processes. Social networks, platforms, deliberation-oriented policy arenas and social movements thus become prominent ‘spaces’ for social learning processes (Steins and Edwards 1999). Such processes have also proved to be useful for tackling the contradictions and deficiencies of formal democratic decision-making processes and the latter’s increasing loss of legitimacy. Social learning processes significantly broaden the space for communicative action in the strategic field of implementation, which is often dominated by local elites, bureaucrats, ‘development’ experts or scientists (Wiesmann *et al.* 2005). More specifically, in the domain of natural resource management, research on social learning processes has generally emphasised the attributes (Schulser *et al.* 2003) or the outcomes of collective learning processes (Wu and Pretty 2004). Other research has focused on the performance of platforms as spaces for social learning (Maarleveld and Dangh’egnon 1999).

Research on the nature of social learning processes is still incipient. Several studies (Dewulf *et al.* 2005; Millar and Curtis 1999; Rist *et al.* 2003) show that investigating the patterns of communication which emerge during collective learning processes might allow to shed light on the arenas and conditions that either enable or hinder a shift from strategic to communicative action. Such a focus could contribute to better understand the potentials and limitations of social learning processes.

Against this background, the present paper presents key insights gained through emancipatory action research focusing on experiences emerging from four case studies in which social learning processes were enhanced through specific workshops for local and external actors carried out in rural India, Latin America and Africa. The workshops, entitled ‘Autodidactic Learning for Sustainability’ (ALS) aimed at enhancing social learning processes between representatives of rural communities, NGO staff and researchers.

An ALS workshop brings together a group of 20–30 participants composed of representatives from villages and communities, and members of development organizations. It creates a temporary platform for the enhancement of collective learning processes. The workshop ideally lasts 21 days and is animated by a team of 2–3 moderators, following a sequence of thematically focused sessions (CDE 1998). It takes place in a specific working environment where local and external actors interact. Roughly half of the participants are development personnel, and the other half are members of the local community.

The workshops were understood as intensified periods of social learning in which small interdisciplinary teams of action-researchers represented some external actor groups. The main difference from conventional action research was that all participants became informants, students, researchers, and teachers. The aim of the workshops was to enable the joint production of knowledge based on a collectively constructed systemic view of natural resource management in the different areas of intervention. This made it possible to critically revise current forms and contents of interaction within and between local and external actor categories, taking into account the principles of sustainable development.

The analysis of the transformation of participants' narratives during the ALS workshops was used to assess to what degree the intensification of social learning processes can contribute to creating space for more communicative action between local and external actors of specific projects aiming at more sustainable use of natural resources. For a first level of generalisation, the case studies were compared in order to identify common features of the social learning processes, i.e. features that were found to be relatively independent from the specific context of the workshops. The outcomes of the workshops from the perspective of a further institutionalisation of social learning processes are presented in a separate paper (Rist *et al.*, 2006).

### **Main characteristics of the case study areas**

A total of four workshops carried out in India, Bolivia, Peru and Mali were evaluated. The contexts of the workshops, presented in Table 1, were very different.

In all four cases, there were major differences between local people's and external experts' knowledge. They constituted a typical 'development interface' where the endogenous knowledge of local actors encountered the science-oriented forms of knowledge of 'development experts' and researchers. The researchers participated in the ALS workshops as external actors. This allowed them to observe and register the changes in the narratives of the other participants as well as to get to know them personally, as a basis for ex-post interviews and participatory assessments of the learning achieved during the workshops.

In the four case study areas the researchers carefully observed the patterns of communication and participation, and the outcomes of communication throughout the workshops. Complementary semi-structured interviews were conducted with local and external participants. The conversations during the workshops were recorded in India and Bolivia, while in Peru and Mali this was only possible during certain parts of the workshops. For this reason, the personal accounts discussed in the following section represent mainly the words of participants from India and Bolivia. However, their impressions and opinions are also valid for the Peruvian and Malian cases.

### **Dynamics and main features of social learning processes in local development interfaces**

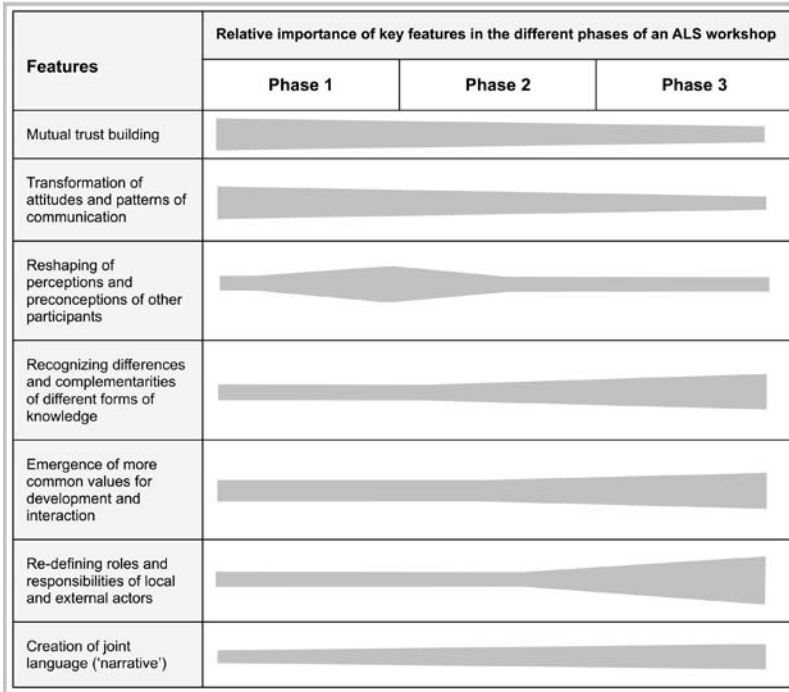
Because the case studies took place in very different contexts, the comparative analysis considered only those changes in the patterns of communication that proved to be highly context-independent. We suggest that these are the most interesting elements because they reveal more general features, potentials and limitations of social learning processes emerging from the interface between peasants, experts and scientists.

During all workshops it was observed that the emerging social learning processes followed a common temporal structure. The initial high disparities between the communication patterns of the different clusters of participants gradually disappeared, as narratives developed that revealed higher levels of consent among the different actors. The emerging narratives clearly pointed towards a more collective definition of the current situation and spelt out what adjustments were needed to better integrate the imperatives of sustainable development into the use of natural resources.

Seven common key features of the changes in the patterns of interaction during the workshops were identified (see Fig. 1). Although these features were found to co-exist throughout

**Table 1** Main features of social organization, and the agro-ecological, socio-economic and political situation of the case study areas, based on detailed analysis resulting from ALS workshops (Cissé *et al.* 2004; Escobar 2004; Premchander *et al.* 2003)

Case study	Social organization	Agro-Ecological situation	Socio-economic and political situation
Bolivia & Peru (High Andes)	Strong community-based use of natural resources; high degree of autonomy and formalization of community institutions; governmental institutions and NGOs play minor roles in resource management	Mountain ecosystem; high dependency on climatic variations; erosion; overgrazing; intensification of land use combined with migration to other ecological zones and cities	Subsistence, reciprocity and market oriented production with temporary migration; decrease in prices for agricultural products and off-farm labor; radical model of decentralization parallels loss of legitimacy of regional and central government structure; strong social movements
India (South of India)	Family and cast-based use of natural resources; relatively strong interference of government institutions and NGOs; lower degrees of autonomy and problems with collective resource management	Semi-arid ecosystem; drought for 4 years; overexploitation of water resources; intensification of land use; soil degradation (salinisation, mechanisation, use of mineral fertilizers); advanced state of deforestation	Subsistence and market-oriented production combined with great dependence on off-farm activities; decrease in price of agricultural products, 20% people migrate to other states; decentralized government structure; target-oriented approach and mainly services reach people who have economic and political influence
Mali (Southern region)	Diversity of traditional organizations representing different ethnic groups; increasing presence of functional organizations of development initiatives; natural resource management is family and partially village based showing low levels of interference of government institutions; relative high interference of traditional authorities	Semi-arid ecosystem; drought prone food production based on diversifies agroecological zones mainly used for grain-based cropping systems; forests are scattered in the agricultural dominated landscape	Diversification of livelihood systems (agriculture, subsistence, high input market oriented production of cotton, rice); dramatic price decreases; dissolution of traditional division of labour between agriculturalist, livestock keepers (nomads) and hunters; decentralisation in course; conflicts with nomadic ethnies and massive return migrants from Cote d'Ivoire



**Fig. 1** General features of social learning processes emerging during an ALS workshop, their relative importance at different stages of the processes

the learning processes, their relative importance at different stages of the processes was clearly differentiated. Thus, building mutual trust among the participants is a prominent feature mainly at the beginning of the learning process. It goes along with a gradual transformation of conventional attitudes of communication. Exchange of information alone between local and external actors was found to be insufficient to increase mutual trust among the participants. The generation of more trustful relationships was closely related to the development of less hierarchical patterns of communication, which were then perceived as changes in attitude. The evaluations done by the participants underlined the fact that for attitudes to change, participation in the everyday life of local actors was decisive. This in turn led to a change in the mutual perceptions and preconceptions of the participants.

A peasant from Peru put this as follows: *“An important aspect of this [ALS] workshop—compared to others—was that we as peasants sat at the same table with the technicians. In other workshops they discriminated against us, referred to us disrespectfully as ‘indios’ and cooked different meals for us and for themselves, and the technicians even ate apart. Never before did we sit at the same table and shared a meal with them. We hope that this will not be the last workshop and that we will continue to reflect on other topics. This is a social change of very great importance: we are all persons and treat ourselves in the same way”*.

An Indian farmer confirmed that they experienced the same kind of changes in the patterns of interaction between external and local actors: *“We were like friends after the workshop. All external participants were good. They motivated us to talk and work in the group. During the group exercises our relationship really developed well. They shared many things during the workshop and without them, we may not have learnt so much.”*



An external actor participating in the same workshop in India expressed the change of perception as follows: *“I see that this [workshop] served as the beginning of a change in attitudes; it means no longer believing that we as technicians know everything and recognizing that we can also learn from the peasants. For their part, it also meant a change because at the beginning they had an attitude of ‘I do not know anything’ whereas the technicians do know”*.

The less hierarchical patterns of communication enabled a gradual transformation of the mutual perceptions of ‘the Other’ and the forms of knowledge others bring into the learning process. Most often this became evident at the end of the first phase, after about one week of the workshops.

Advancements in the former three aspects created space for more intense communication on the basic patterns of interpretation underlying local and external forms of knowledge. As a consequence, basic common features, differences, contradictions, potentials and limitations for the integration of different forms of knowledge became a prominent element of the learning processes.

What this meant in practice can be exemplified by a discussion that took place during the workshop in Mali. The task was to elaborate a transect of the community, registering natural resources and the social actors related to them. Before doing so, the mixed groups of farmers and professionals had to determine how they would register actors and resources. While the external actors wanted to register natural resources and actors separately (as suggested also by the moderators), the peasants argued that for them this would be simply ‘meaningless’. For them, resources and actors build a ‘living unity’ directly related to their ancestors. Reporting these discussions in the plenary session resulted in an interesting insight for outsiders and peasants. While the latter were very satisfied because they were able to make their own concepts prevail, the professionals emphasized the importance of this episode for learning and adapting to local ways of thinking.

When presenting the results of the transects, all participants agreed that local people have their own understanding of natural resources. Besides soil, plants, animals, water, etc., the peasants also registered clouds, rain, sun, wind, sacred water sources, mountains and caves as important ‘natural resources’. As a result the external participants openly admitted that they were surprised by the degree of holism underlying local visions. A fascinating dialogue emerged, in which external actors explained to themselves and to the farmers the limitations of their more reductionist way of looking at nature and society. The participants debated this experience and came to the following conclusion: interaction between external and local actors often fails because professionals make their own vision prevail while local actors normally do not dare to bring their own views into the discussion. Opening external visions and perceptions to the collective debate constituted a clear ‘de-powerment’ of outside actors. At the same time, it constituted an obvious empowerment of local actors, who are normally not allowed to learn about, or assess the values and knowledge of outside actors.

The discussions on the potentials and limitations of different forms of knowledge always led to the discovery that what really makes a difference between external and local knowledge are the values that underlie them. Through this insight, discussions in the groups began to focus on the ethical dimensions of the development interfaces in which they are enmeshed. This led to the recognition that before mobilizing economic, social or technological resources, a more commonly shared basis of values should be established. The discussions of the ethical dimensions were subsequently broadened, considering what McIntyre (2003) has described as the ontological and epistemological dimensions of learning and problem-solving.

From the point of view of a Bolivian external actor, the experiences related to important values of development and the kinds of relations among actors linked to them were expressed

as follows: *“Through this workshop I could understand why the peasants, even when they migrate from their communities, always come back; it is because of their different view of life. This ‘cosmovision’ for them is integrality, it is this particular concept of ‘kawsay’ (life) that they manage and that I didn’t understand at the beginning; but now it serves me well. It helps me to see things more integrally and in a way that frees me of my own bias.”*

The recognition of the differences between different forms of knowledge, and the discovery of the ethical dimension of knowledge, began during the second phase and became increasingly important during the last phase of the workshops.

The more local and external actors became confident and mutually acknowledged the potentials, limitations and multiple dimensions of their own knowledge, the more attention was also drawn on critical reflection about the current roles and responsibilities of local and external actors.

The following statement reveals how these aspects positively affected the self-definition of the roles of local actors in Bolivia: *“... On the basis of what we contributed [in regard to the knowledge and social and cultural situation of the community] you [the technicians] talked of self-esteem. We realized that this is related to the fact that sometimes we remain quiet or we appreciate people coming from outside, representing other cultures. Self-esteem means that we have to value all we know and the culture we have much more. Therefore, it was good that these technicians came to us.”*

On behalf of the external actors, an Indian extensionist formulated this as follows: *“The combination of farmers—who had practical experience—and staff from the NGO—who had theoretical knowledge... contributed towards an in-depth understanding. This could happen because the program had been organized in the field and was planned for a duration long enough for individuals to discuss at length and at their own pace. This kind of workshop helps people themselves to design programs according to their own needs.”*

An external participant in the workshops in Bolivia was asked to comment about the differences she saw with regard to the use of participatory methods applied in the workshop, compared with conventionally used PRA methodologies. She answered: *“Participatory rural assessment is normally pre-structured or semi-structured and the community fills in the tables and maps and makes sketches. Of course, this also facilitates participation, but here we apply another method that is much more participatory. This is a great achievement, because we deepen our understanding of the community, based on joint analysis. If you come to the point where the peasants expose you to their own understanding of development it really de-structures you... even if you do a conventional PRA, you normally tend to validate your own concepts of development.”*

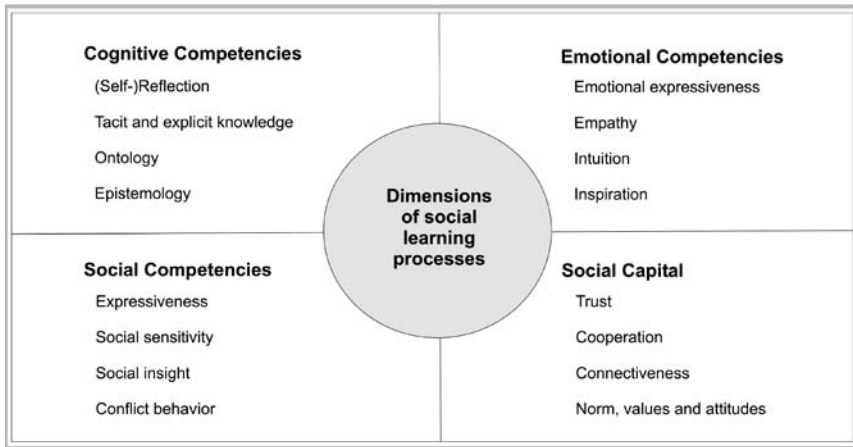
The above statements are highly representative of the kind of evaluation that external participants made. Besides knowing a lot of new things related to the local communities, they always emphasized the fact that interaction in the workshop led to more confidence with local people. By saying that they began to *feel* like they became part of the farmers’ community, they referred to an emotional and social quality of the learning process. The involvement of social, emotional and attitudinal dimensions in the learning process were also highlighted in the Indian workshop. In the final evaluation, an extension worker put it this way: *“Community people thought they were learners, whereas NGO participants were the teachers. Though the important aspect of attitudinal change is that it takes a longer time; after an initial period, we were able to conduct the workshop like a seminar between equals.”* Another external participant from Bolivia added to the same topic: *“At the beginning it was difficult, but towards the end we achieved conscious and interactive participation among peasants and professionals. The peasants felt that we were like part of them; they were able to identify themselves with us and we with them; we began to be part of the community.”*

By the end of the workshops the participants all started to reflect on what they felt as a deficiency: the more the learning process was advancing, the more the local as well as external actors felt the distance to the rest of the members of the institutions and organizations to which they belonged. The participants became aware that the kind of experiences they went through and the additional knowledge that this brought should be made available also to those who did not have the opportunity to participate in the workshops. In some cases this led to frustration, mainly among participants from external institutions, who felt that their learning would be 'in vain' because the translation of the achieved insights would require organizational changes. These were seen as hardly possible, be it because of internal structural and ideological factors or because of economic dependencies from funding agencies whose priorities were clearly different. Local actors shared the same kind of preoccupations, but instead of getting worried they translated the experiences gained into a demand for repeating this kind of intensified social learning in a context that would allow all, or at least part of the most influential community members, to go through the same experiences.

The observations made during the workshops showed for all cases that the creation of a social and emotional environment in which the participants feel at ease was of fundamental importance for successful communication throughout the 'working hours'. Before, after or during the 'working day' people kept on interacting and communicating more informally by taking the meals together, visiting some families nearby, playing football, music or coming together for chewing coca leaves or taking tea, etc. This allowed to conclude that the success made in terms of the more cognitive oriented dimensions of the learning process cannot be separated from what happened in terms of a wider socio-psychological environment, yet it also influenced the change of attitudes, social and emotional competencies of the people involved.

The analysis of the discourses through which different groups of participants referred to the interaction during the workshop showed that they gradually developed into a 'joint language' or narrative. These changes in the patterns of interaction between local and external actors led to an increasingly complex exchange of perspectives and knowledge. By the end of the workshop, the resulting narratives had significantly more joint elements, compared to the beginning. In all cases, external as well as local participants agreed that more sustainable use of natural resources cannot be reduced any longer to technical or merely economic questions. The issues related to the use of natural resources were re-embedded in the life-worlds of local people. Consequently, these issues were seen in the context of conflicts between the young and old generations, different castes, men and women, or different local, ethnic or religious identities in the making; they were also perceived in the perspective of external influences originated from competing political groups, corruption, decreasing commodity prices for local food crops and labour, etc.

The evaluation of the changes and transformations of interaction and communication observed during the workshops against the background of the criteria presented in the above discussion about the importance of the theory of communicative action, allows to establish the following: the observed process of communication between local and external participants allowed to flatten the initially highly hierarchical relationships in terms of cognitive, social and emotional superiority of external vis-à-vis local knowledge. This led to broadening the space for mutual questioning of conventional attitudes, propositions, wishes and needs of local as well as external actors. This in turn contributed to a more symmetrical distribution of opportunities for participating in the debates, which made it possible for a shared narrative to emerge that represented a joint definition of the present situation with regard to natural resource management and the requirements for its transformation in view of the principles of sustainable development. The formerly unilateral truth claim



**Fig. 2** Key dimensions of social learning processes in face-to-face interaction of peasants and experts and researchers in the field of natural resource management

of knowledge represented by exogenous—and to a less extent—by endogenous actors was transformed into communication based on intersubjective processes of validation, including normative and procedural forms of knowledge. Considering that all these elements are part of the definition of communicative action (joint definition of situations as a basis for coordinating action, based on comprehensibility, truth (intersubjectively validated), sincerity and moral appropriateness) the findings show a clear move towards the creation of more space for communicative action in the social interaction between exogenous and endogenous actors.

### The multidimensionality of social learning processes

The comparative evaluation of the intensified social learning processes emerging in different contexts showed as a common feature that they could all be understood in function of changes of basically four interrelated dimensions. These dimensions are represented by cognitive, social and emotional competencies, and social capital (Fig. 2).

The changes in the patterns of interaction during the workshop were closely correlated with a reciprocal and actor-specific transformation of social capital among the participants. Social capital was related to trust building, cooperation, and corresponding changes in attitudes as well as norms and values taken for granted. Our definition of social capital is related to Woolcock's (1998: 185), who concludes that social capital is the product of social interactions that draw on knowledge and identity resources which depend "on various qualitative dimensions of the interaction in which it is produced, such as the quality of the internal-external interactions, the historicity, futurity, reciprocity, trust, and the shared values and norms."

The intensified social learning processes gradually contributed to changing attitudes, allowing to increase mutual trust and the willingness to cooperate more closely (connectiveness), based on intersubjectively validated norms and values. A common feature in regard to this dimension of the social learning processes was that participants learnt quite fast to shift in the discussions from contradictory practices or situation-oriented statements, where

deliberation easily can become unproductive, to the underlying values associated with a controversial practice or issue. This permitted greater reflexive distance from more tacit interests and preferences among the debating parties. This allowed on the one hand, for the underlying ethical dimensions to be made explicit and enabled, on the other hand, to amplify the scope of deliberation towards levels that are less prone to hindering communicative reasoning.

A second dimension of social learning processes was related to social competencies: communicative expressiveness, sensitivity and broadening insight into the multiple dimensions of the processes of interaction with other actors proved to be key factors in facilitating collective learning processes. These elements are closely related to a skill-oriented approach to social competencies (Oppenheimer 1989) emphasizing social awareness. This concept is composed of three different components: social sensitivity (role playing and social inference), social insight (social comprehension, psychological insight, and moral judgment), and social communication (communicative expressiveness, social problem solving). Social competencies also proved to be closely related to the possibilities of handling conflicts or mastering unusual situations constructively, e.g. in face-to-face interaction between different members of castes (e.g. in India, Mali), where this is not very frequent. Social competencies developed in the course of the workshops were intrinsically related to the other three key dimensions of the emerging social learning processes.

A third dimension consists of emotional competencies, understood as the differential importance assigned to the development of emotional expressiveness, empathy, intuition and inspiration. These were other key factors that shaped the learning processes, as observed throughout the workshops. These aspects proved to be especially important in the context of intercultural communication between representatives of scientific and expert knowledge, and those persons representing different forms of indigenous knowledge, where the communication between human and non-human beings (gods, ancestors, and other spiritual beings) plays an important role in everyday life. Emotions, here, are simultaneously viewed as cultural concepts, making it possible to closely relate them to motivations for the enactment of cultural values. Confirming the findings of Lutz (1983), emotional competencies represented a critical nexus for understanding the creation of, and the participation of individuals in, social institutions.

The fourth dimension is related to cognitive competencies; reflection proved to be the most important aspect of the observed social learning processes. As interaction among the participants was embedded in the life-worlds of local actors, reflection was strongly oriented towards self-reflection. Instead of reflecting on existing general knowledge or theories, the process of reflection mainly focused on tacit and explicit forms of knowledge as represented by local actors. This increase in reflexivity re-shaped the relationships between tacit and explicit knowledge, leading to a dynamic of knowledge production and sharing that included new elements for both local and external actors. Another important feature directly linked to the development of cognitive competencies was increasing awareness of the interrelation of one's own and other participants' forms of knowledge and underlying ontologies (theories of 'objects') and epistemologies (theories of knowledge). These latter aspects were not dealt with using these specialised philosophical terms: they were evoked in a more practical way, e.g. when deliberating about the question of the relationship between human beings' spiritual practices and social and natural processes. A regularly emerging debate in all the workshops concerned the question whether a prayer, a ritual, or a meditation could influence not only personal behavior, but also wider social and natural processes. A key issue of the dialog between different forms of knowledge in all four cases was therefore the debate about the relations between mind and matter.

## The intricate pathways and complex dynamics of social learning processes

Conceptualising the observed social learning processes in terms of the above four dimensions helped to better understand why external and local actors—while participating in the same experience—learned quite different things, and how this, instead of widening the distance between them, led to a narrowing down of cognitive, emotional, social and ethical distances, opening space for more communicative action.

The mutual exchange of perspectives and knowledge led to an increasingly reflexive treatment of the knowledge and the socio-psychological environment from which it emerged. On the part of local actors, reflection about the relevance of their own forms of knowledge and the related social and emotional competencies generally led to a re-valuation of their own cognitive, social, emotional and ethical resources. For the external actors, on the other hand, there was a clear tendency to question the assumed universality of their own technical knowledge, recognizing the importance of values, attitudes, trust, social and emotional aspects in social processes related to natural resource management. This helped to broaden space for a more deliberative and equity-based process of knowledge sharing among all participants with a common interest in putting locally available resources at the centre of the debate.

Interestingly, the enhancement of reflexivity highlighted by local actors did not unavoidably lead to increasing the transfer of explicit knowledge from external to local actors. The growing degrees of reflexivity in the learning processes were clearly subordinated to the materialization of the collective construction of a commonly shared narrative, mainly rooted in local cultures. From this perspective, the increasingly reflexive exchange of exogenous and local knowledge did not lead to a ‘scientification’ of the narratives of local actors. A good example is the following statement by a Bolivian farmer in a plenary meeting, when referring to his understanding of ‘natural resources’: “*We are the earth. In Spanish you say ‘human resources’, ‘natural resources’. All that we have to make ‘walks right’ through our hands, doesn’t it? For this reason we are here as persons, looking in all directions in order to make the resources in this territory ‘walk right’ . . . In the past our grandfathers cared for the earth, saying ‘if we do not do it we lose her’; they felt obliged to her and, even if it rained, they said ‘you have to go out and dig a deviation ditch’. Now, with our own hands, we are releasing the earth, we are not willing to improve her anymore . . . but now there are some orientations and hints to make us aware and therefore we—talking to each other—are making it better . . . We do feel sadness when we think about what happens, but, . . . well, these are the things we have to improve, the aspects to which we have to give attention.*”

This statement shows how interaction in the workshop led to incorporation of some elements on which the external actors focused (e.g. the need for more soil conservation) into the rationality of the life-world of Andean peasants, and how this immediately became incorporated into a historical perspective based on their own culturally shaped patterns of interpretations.

A further example referring to the process of interaction itself was the expression of an Indian farmer remembering the fear he felt after an interview with a key person related to a severe conflict in his village (regarding the lack of cleaning in the area of the village water reservoir). He pointed out: “*I was scared of what could have happened if we had dealt with this issue in the plenary. The villagers could even have stopped the workshop . . . But I said a long prayer to his God to spare presentation of the cases during the afternoon session. Then I felt that his God put it into the moderator’s head not to discuss the issue further. This was the most painful experience in the workshop.*”

From such insights it was concluded that higher degrees of reflexivity, instead of unilaterally enhancing the ‘rationalization’ of endogenous forms of knowledge, led to more reflexive attitudes in the collective construction of narratives based on local cultures. Instead of questioning the pertinence of considering oneself as ‘earth’, or doubting whether a prayer could influence the behaviour of the moderator of the workshop, the social learning process motivated participants to share the ways in which local actors relate external phenomena to their own worldviews and life-worlds.

The evaluation of the specific importance of these four dimensions in the observed social learning process for endogenous and exogenous actors revealed clear differences. At the beginning, the basis consisting of shared social and emotional competencies and social capital was relatively narrow. Moreover, the differences were even more accentuated in regard to cognitive competencies, which clearly was a predominant feature brought into the communication process by the external actors.

It is this background that allows to understand why the widening of a shared basis for social capital, social, emotional and cognitive competencies was so important at the beginning of the workshops. Only on such a ground was it possible to engage in trust and respectful mutual dialogue based on reflection. The collective revision of the knowledge of local *and* external actors made it clear—for both sides—that there are severe limitations on action if it is unilaterally based on exogenous knowledge. This allowed more self-esteem and confidence to emerge within the group of local actors. At the same time, the external actors realized that improving their social and emotional competencies and increasing social capital both also significantly influenced the advancement of less hierarchical communication.

The differences in regard to the role of cognitive competencies in the learning process of local and external actors were decisive in shaping the dynamics of the social learning processes. The observed social learning processes showed a clear notion of reciprocity between local and external actors: The specific conditions of interaction made it easier for external actors to recognize and complement deficient social capital as well as social and emotional competencies. At the same time, for the local actors the systematization and reflection on their own knowledge helped them to transform parts of their tacit into explicit knowledge, allowing to significantly boost their cognitive competencies. As a consequence, a key contribution of external actors to the collective learning processes consisted in making them more reflexive, whereas local actors contributed the social and natural ‘objects’ to which reflexivity was applied, consisting of their basic narratives related to nature, human beings and society. Through this local actors, besides becoming aware of the values of their own knowledge, were able to learn to increase their social capital and the related social and emotional competencies that were necessary for the performance of their new roles as ‘teachers’ and leaders of the communication process with the external actors. In both cases, this led to a reduction of imbalances and one-sidedness in regard to social capital, social, cognitive and emotional competencies, creating new room for communicative action.

## Discussion

The findings reported in the present paper demonstrate that it is possible to actively intensify social learning processes through specially designed workshops for farmers, experts and scientists aiming at a more societal mode of knowledge production in view of a systemic approach to sustainable natural resource use.

This finding allows to point out—at least for the context of Southern rural societies—that communicative action aiming at societal production of knowledge for more sustainable

use of natural resources should not be understood only in terms of cognitive competencies. Although the speech-act as such is always based on cognitive competencies, the process of achieving higher levels of communicative action in real-world situations revealed itself to be conditioned also by the development of actor-specific social capital and social and emotional competencies.

The present study makes it possible to have a more differentiated perspective on a critique regarding communicative action raised by Southern authors (e.g. Morrow and Torres 2002) who—by drawing on Paulo Freire’s critical pedagogy—argue that communicative action does not ‘automatically’ emerge as soon as marginalized actors participate in development processes. Morrow and Torres argue that communicative action requires the formation of basic cognitive competencies, which many actors in socio-economically marginalized societal sectors are often deprived of. While confirming this critique the present study also shows that cognitively more competent external actors can inhibit the emergence of more communicative action as long as their basic social capital and social and emotional competencies remain unaffected by their cognitive competencies.

The findings of this study are consistent with the ‘model for change process for sustainability’ proposed by Ballard (2005:142 ff), who states that more sustainable development needs to consider at the same time the key process of ‘action and reflection’ and the relationship it has with awareness of what happens, agency to find meaningful responses in association with other people. However, the linking of social learning processes to communicative action framework brings to the surface the existing relationship between knowledge and power, which is somewhat implicit in Ballard’s argument (2005). This is in accordance with the findings reported by Wakeford and Pimbert (2004), who point to the need to create arenas where expert knowledge is put under public scrutiny, as a means of transforming actual power imbalances between representatives of local actors and elite groups. The study of the social learning processes aiming at a more systemic view of the present situation led to make explicit the often hidden a-priori assumptions of the superiority of exogenous vis-à-vis endogenous knowledge. This made it possible to address the issue of the domination of the development discourse by powerful elites, e.g. represented by development experts, politicians or researchers. Through the more communicative form of interaction, participants were able to create an inter-subjective understanding of their situations, expressed in new narrative elements of themselves and their worlds and the interrelations between them. This, in turn, can be interpreted as new forms of more collective social action.

The major limitations of such intensified social learning processes were found to be related to the duration of the workshops, the search for continuity and broadening of the scope of the collective learning processes, closely related to a critical assessment of the selection of the participants. The realisation of the workshops was preceded by discussions among and between local and external actor groups. A first reaction was to question the duration of the workshops (21 days: too long). Outsiders were generally concerned about the effects this could have on the output-oriented project planning and execution as required by the funding agencies, which have only little or no time and resources for learning. Local actors were more concerned about the definition of a period when the workload was less heavy, and the possibility of receiving some form of compensation for the time and resources they provided. Interestingly, in the final evaluation these concerns were replaced by a feeling of sadness that the workshop was over.

Due to the positive evaluation of the learning process, both local and external actors became concerned about their privileged situation in the sense of having gone through an experience that should also be made available to those members of their collectivities who had not been selected for the workshop. Although the workshop participants dedicated one



to two days to sharing workshop results with the other members of their communities, e.g. through an exhibition of posters, drawings, and transactions, or the presentation of role plays of the kind made during the workshops, local and outside participants all felt the need to anchor and institutionalise this kind of social learning process within their own organisations.

Local and external actors felt that the low or inexistent involvement of their authorities (community leaders or directors of NGOs) were critical aspects for scaling up and giving continuity to the emerging social learning processes. This revealed a difficulty in regard to the selection of the participants. Local as well as external actors were autonomous in the selection of workshop participants. The only recommendation given by the workshop moderators was to consider as far as possible a representation of all relevant actor groups of within a community or external organization. Arguing mainly with the duration of the workshops, this led to a relatively low representation of women, leaders and political authorities. According to the evaluations made by the participants, special attention should be given to overcoming the insufficient representation of women and local leaders when searching for ways to involve whole communities and organizations in the social learning processes.

With regard to involving locally based government representatives in learning processes, the case of India and Mali showed that this seemed to be not really recommendable. Besides the problems of attending a twenty-one day workshop, their participation at the beginning and closure of the workshops clearly showed that their presence inhibited the emergence of more open and communicative action between the local actors and the other external actors. This allows to conclude that intensified social learning processes should only be recommended if a minimal degree of closeness and connectivity between the actors involved exists. Moreover, if formal, ethnical or structural hierarchies are too strong, face-to-face interaction and communication is less likely to develop into communicative action.

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