

## ETHICAL CONSIDERATIONS IN THE FOOD CHAIN

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### ABSTRACT

There are numerous questions to be discussed which are linked to agricultural ethics. Raw material production, animal husbandry, food production, commercialization and consumption have several ethical aspects. Nevertheless, up to now we have not dealt with ethical issues related to agricultural and food sciences comprehensively and institutionally. The agricultural ethics must find its proper place in the system of modern ethics along with bioethics, environmental ethics, business ethics and engineering ethics.

All of us are interested in foods, their availability, safety, nutritional status and wholesomeness. Our survival, health and welfare depend on the food supply, the production, processing and distribution of safe and healthy foods. In the developed world nowadays the question is not if we have enough to eat but more if the product is of high quality, safe and if it has been produced in a sustainable way while the environment and biodiversity was protected.

Owing to the technical and technological accomplishments of the 20th century, the domination of man has immensely grown on the environment. The activities of the participants of the food chain effect not only the natural but the sociocultural environment as well. Has mankind utilised rationally the available natural resources serving as a substantial background for the agricultural production and in this way for its own supply?

Does our quality of life improve with our growing wealth? Should we further burden the environment for our economic welfare? What will be the result of wasting the available and non-renewable resources? Can we meet the increasing demand of consumer society? Must we satisfy these expectations? Who has the right to decide which technology we may apply to achieve these goals? Are we aware of all the possible consequences of the new technology made by us? (Bánáti, 2008).

This paper reflects on some topics and questions of agricultural ethics such as global population growth, food security, rural-to-urban migration, ecological footprint, environmental concerns, consumption habits, food waste, biodiversity and new technologies which need more thorough discussion and debating in order to develop a long-term approach for a sustainable agriculture as the safeguard of future generations is needed. Of course, there are further ethical matters such as animal welfare, international trade or the question of bio fuels and brain drain which needs unfolding, however, this paper does not touch on these points.

### 1. INTRODUCTION

Ethics, simply put, refers to the rightness or wrongness of actions. People, groups, or institutions act ethically when they do "the right thing," and act wrongly when they do "the wrong thing." Obviously, one of the first problems encountered when thinking about ethics is "What makes actions right or wrong?" This thinking is referred to as the problem of finding ethical standards or criteria.

Food safety is an ethical issue because in the modern food production-transportation-processing-wholesaling-retailing chain, foods can be exposed to chemicals or microbial pathogens, or simply can be mishandled. The well-known food scandals of the last few decades such as the BSE, melamine, dioxin, avian flu or the H1N1 cases and the concerns of all kinds of residues, additives, antibiotics and hormones in foods generated consumers' fear of food worldwide.

Raw material production, animal husbandry, food production and commercialization have various ethical aspects. Nevertheless, up to now we have not dealt with ethical issues related to agricultural and food sciences comprehensively and institutionally. The agricultural ethics must find its proper place in the system of modern ethics along with bioethics, environmental ethics, business ethics and engineering ethics.

## **2. ETHICAL CONSIDERATIONS IN THE AGRI-FOOD CHAIN**

There are numerous questions to be discussed which are linked to agricultural ethics. All are general topics, and a complete analysis is much more than can be presented here.

### **2.1. Global population growth**

The world's population growth is currently following an exponential curve and is projected to reach approximately 9 billion by 2050 (FAO, 2001).

Could the Earth's resources sustain such a population? Common sense tells us that such growth cannot continue - otherwise within a few hundred years every square foot of the Earth's surface would be taken up by a human. Global population growth has already contributed to a serious loss of biodiversity and will pose serious ethical challenges to food production and distribution in the future.

Connected to the global population growth there is a problem of ageing population. Initially experienced by the more developed countries, the process has recently become apparent in much of the developing world as well. For the near future, virtually all countries will face population ageing, although at varying levels of intensity and in different time frames (Rahman et al. 2009).

### **2.2. Food security**

792 million people lack access to food in the developing world (FAO, 2001). In the face of persistent and widespread hunger, therefore, the 1996 Rome Declaration on World Food Security and the World Food Summit Plan of Action reaffirmed the right of everyone to have access to safe and nutritious food and specified the need to clarify the definition of the right to food. They also reaffirmed the fundamental right of everyone to be free from hunger urging attention to the implementation and realization of these rights as a means of achieving food security for all (FAO, 1996).

### **2.3. Rural-to-urban migration**

Rural-to-urban migration also continues in many parts of the globe, leading to a world that will soon have more urban than rural inhabitants. Given that young adults account for the majority of migratory moves, rural-urban migration tends to accelerate demographic ageing in rural areas, resulting in considerable shrinkages in the rural labour force. This

will have profound consequences for agriculture, as the transportation and processing of food products and people's ability to purchase them become even more essential as components of food security (FAO, 2001).

#### **2.4. Ecological footprint**

Our ecological footprint is the measure of our consumption level. An average of 2.28 hectares per person is needed to provide food, energy, fibre and other input for life. Huge inequalities exist around the world. Hardly more than half a hectare (0.53 ha) is needed in Bangladesh,

but the ecological footprint is 9.5 in the USA, 8.04 in Denmark, 5.4 ha in the UK, 4.98 ha in Austria, 3.96 in Poland, 3.55 ha in Hungary and 2.87 in Romania.

The ecological footprint includes the space needed for the production of crops, vegetables, catching fish et cetera, so, mostly the land used by agriculture for the production of raw materials. There are over 100 cities or regions worldwide which have assessed their ecological footprint. In 1961, the first year for which ecological footprint accounts are available, humanity's footprint was about half of what the Earth could supply – it was living off the planet's annual ecological interest, not drawing down its principal. Human demand first exceeded the planet's ability to meet this demand around 1986 and this state of overshoot has characterized every year since.

There are different approaches to reduce the ecological footprints, either aiming to reduce our direct impact on the environment by becoming more efficient in the use of resources or considering environmental matters when deciding which products and services to buy.

Consumers in industrialized, highly developed countries have much bigger footprints thus bigger responsibility than others. The total area of the Earth's surface needed to support our individual existence, our ecological footprint very much depend on the foods we buy, consume and waste (Bánáti, 2008).

#### **2.5. Environmental concerns**

Global agriculture will be under significant pressure to meet the demands of rising populations using finite, often degraded, soil and water resources that are predicted to be further stressed by the impact of climate change. The sector deserves more attention when it comes to both climate change threats and opportunities. The impact of climate change on agriculture could result in water shortages and drought, new diseases, heat stress and we can expect to see flooding and droughts becoming more frequent and more severe. Destruction of tropical forests and other native vegetation for agricultural production has a role in elevated levels of carbon dioxide and other greenhouse gases. Higher temperatures would eventually reduce yields of desirable crops, encourage weed and pest proliferation.

Agricultural production practices can have toxic effects through organic wastes and chemical pollution, which can affect no target organisms, leave chemical residues on food, and expose farm workers and other human beings to harm. Second, agricultural use of soil, water, and genetic resources can be wasteful. In many areas of the world, plant and animal genetic resources and land, air, water, forest and wetland resources - the renewable natural resources on which human life depends - are being rapidly degraded. Overuse of marginal lands continues apace, turning fields into deserts and depriving future generations of vital crop and pasture land. Simultaneously, misuse of irrigation water is depleting aquifers and causing the salinization of fertile lands. Long-term approach and the safeguard of future generations is needed (FAO, 2001).

## 2.6. Change in lifestyle and consumption habits

There is a change in lifestyle and consumption habits. Consumers in the developed regions of the world have a wide choice of what and how much to eat, how to consume and waste their foods. They have a sufficient supply of safe and nutritious foods, very often even a surplus of foodstuffs (Bánáti, 2008). The less frequent shopping, longer shelf-life foods, the consumption of highly processed and ready-to-eat convenience foods often result in unhealthy conditions of humans in these countries. There are an increasing number of overweight and obese people suffering from diet-related diseases and there is a strong correlation between bad consumption habits and these diseases. Responsibility lies not only with food producers, food business operators, policy-makers but also with individuals and their choices in food consumption. However, contradictory information provided by the media on what to eat, how much to eat or about matters such as GM foods and food additives is not helping consumer awareness either.

Moreover, there is the question: as billions of people around the world seek to emulate the high meat-consuming diets of the developed countries, how long will the Earth's natural resources be able to sustain an industrial agricultural system devoted to high-volume, low-cost, monoculture production of animal feedstuffs? (CAST, 2005).

## 2.7. Food waste

The wastage of food occurs at all stages of the life cycle of food, starting from harvesting, through processing and production via trade and finally consumption and household level. A 50 % reduction in food waste could reduce the environmental impact (in the form of greenhouse gas emissions) by 25 %. However, besides the considerable impact on the environment the expenditures of labour, energy, resources and waste management which have to be spent along the food's life cycle need to be looked at from an ethical point of view (Schneider, 2008).

## 2.8. Biodiversity

Biodiversity is threatened as a result of widespread specialization in agricultural production, industrial pollution, deforestation and the introduction of invasive species. Traditional and modern farming methods need to be reconciled in order to maintain indigenous knowledge of diversified farming systems and biodiversity.

Today's limited use of plant biodiversity for food production can be illustrated as shown in Figure 2.

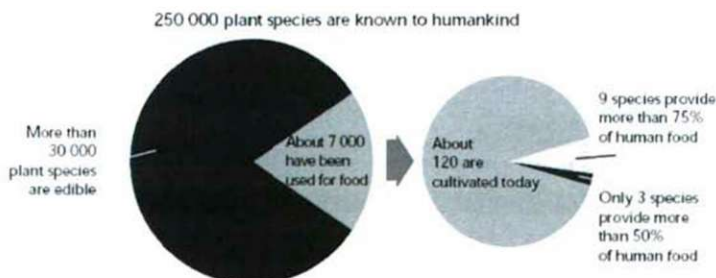


Figure 2. Today's limited use of plant biodiversity for food production (FAO, 2001)

## 2.9. New technologies

Another reason for ongoing ethical dilemmas is that new technologies might have unexpected consequences. Science and technology have provided great benefits in the past and are likely to do so in the future, as long as they are properly managed and applied.

New technologies such as xenotransplantation, cloning, genetic modification and nanotechnology have emerged into the agro-food industries and with their help we can meddle in nature in an unbelievable way. How far should we go?

New technologies generate both admiration and fear in society. They ensure unprecedented opportunities (e.g. the genetically tailored diet) but they can also carry unforeseen hazards (e.g. the accumulation of nanoparticles). Modern technology gave numerous opportunities into the hand of mankind and we must set its limits. Simultaneously with the appearance of new ethical norms, we must be prepared for analysing the consequences to be observed in the future (Bánáti, 2008). Science and technology have provided great benefits in the past and are likely to do so in the future, as long as they are properly managed and applied. When deciding whether certain developments or technologies should be accepted or promoted, we have to look at the risks and the benefits.

## 3. CONCLUSION

After all, the most direct strategy for institutionalizing ethics is for everyone in the food system to begin to include some consideration of ethics in the actions, decisions, and policies they create or support. This strategy means that farmers, food processors, scientists, research administrators, regulators, and decision makers at the highest levels routinely would reflect on the ethical rightness or wrongness of their own actions and decisions, as well as those of others; engage in debate as appropriate; and, ultimately, try to act ethically. The improvement of sustainable production in agriculture, including forestry and fisheries, should generally be beneficial to all.

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