Elaboration of the substantive issues

ETHICAL ISSUES IN FISHERIES

The importance of fisheries in terms of both welfare and economics can hardly be overstated. Ethical issues arise with reference to a number of different interests, all of which demand consideration. First, overfishing and ecosystem integrity are clearly major concerns as regards the relevant non-human species themselves. A number of ocean species have been depleted, and biodiversity is under threat. It is not just a matter of overfishing, however: there are also implications of different fishing practices for species welfare insofar as some are less humane than others.

With respect to human flourishing, overfishing ultimately has an impact on the availability and cost of food sources, and the survival prospects of whole communities. In addition, phenomena such as globalization and technologization have implications not only for biodiversity and human physical survival, but also for traditional practices and ways of living, as industrial interests increasingly affect the interests of small-scale fishers. These changes and trends on the international scene are not ethically neutral, but have the potential to affect for better or worse the prospects of different interest groups, in terms of welfare, freedom and justice. This can happen, moreover, in multiple ways. Interpretations of human freedom, for example, should not be reduced to mere freedom to market, on the one hand, and individual choice, on the other. A richer notion of freedom in terms of the maintenance of cultural identity is also important. This is what may be at stake in relation to fishing communities whose whole way of life may be undermined: the value of diversity in ways of living is an important dimension in itself. As regards social justice and equity, because the majority of fishing communities are concentrated in developing countries and, indeed, in the more rural areas of those countries, the potential for widening rather than reducing previously existing inequalities is clearly a matter of concern.

The economic viability of small-scale fisheries is clearly integral to the survival and health of fishers and their communities. Fish may be the main source of nutritious food for such communities and, without it, both food security and the right to food are severely compromised. It is important to recognize, moreover, that while fishers themselves may be regarded as the providers of fish to these communities, they are also consumers, and yet it cannot be assumed that their right to food is satisfied. They, too, may be liable to suffer from protein deficiency, especially if economic considerations are paramount.

THE ETHICS OF FOOD ADEQUACY, INCLUDING FOOD SAFETY

While the overriding concern is to ensure that sufficient food become available for all, the task to ensure that food is safe and healthy is a top priority for each individual, family, community and State – and humanity at large.

Food safety is put at risk in many ways. The plants and animals that we eat as food can become contaminated by various causes and processes. Food can be contaminated by disease-causing microbes or multicellular parasitic organisms. The disease-causing organisms can be components of the food itself, e.g. tapeworm or anthrax that infect the animal whose meat is then eaten as food, or they may have been mixed with the food as dirt, e.g. *Amoeba* or *Giardia* in uncooked vegetables. Toxic substances can be produced by agents that infect a crop that is then eaten as food, e.g. ergot in wheat. Contamination can also be a deliberate measure taken either to harm or to increase bulk, or even to sell a poisonous substance under the guise of something edible, e.g. oil from *Argemone mexicana* mixed with, or sold as, edible oil. Food or impurities in food can cause allergies, deformities or even mimic sex hormones and wreak physiological havoc.

Contamination generally has a negative impact on the quality of food and feed and may imply serious risks to human or animal health. In most countries, laws and regulations exist to ensure the safety of food and, more specifically, to ensure that contaminant levels in foods are as low as reasonably achievable, *inter alia* by requiring procedures that ensure both hygiene and food purity. However, many poor countries lack the capacity to formulate or to enforce such laws effectively. There are also international laws and standards for the purpose of ensuring food safety, e.g. the International Plant Protection Convention and the Codex Alimentarius. The latter have been taken by the World Trade Organization (WTO) as standards-setting instruments or processes in regulating international trade.

The most difficult aspects of ensuring safe and healthy food arise from the complexity of influencing habits. For example, fat in food is essential in the right amount, but it can raise cholesterol levels and lead to the hardening of arterial walls and to consequent heart failure. Similarly, sugars are essential for metabolism but, when consumed in excess, can exacerbate or cause diabetes.

Previous generations have learned which plants are safe to eat, and which plants are poisonous, e.g. many mushrooms, giving us our lore on food safety. They have even learned under what conditions a given plant species can become food and under what other conditions it becomes poisonous. For example, potato tubers are excellent food if they have developed underground, but they are poisonous if they form above ground and become green.

Many plants that are safe to eat are now cultivated as food crops. Their chemical compositions, and hence their physiological impacts, have stayed more or less unchangeable because their genetic make-up stays more or less unchanged. This has changed with the emergence of genetic engineering, which has made it possible to introduce genes into these crop species from other species that would never have been mixed naturally. This process makes their chemistry, and hence their possible physiological impacts on animals and humans, unpredictable. Our certainty of knowing the possible physiological impacts of a crop disappears as soon as it is genetically engineered. Even after we have tested all its possible short-term and long-term impacts on our physiology, we are still left uncertain as to whether the very process of genetically engineering has introduced instability into its genetic, and hence chemical, composition and, therefore, compromised the predictability and stability of its impacts on our physiology.

The Panel reiterates its concern over genetic engineering's potential impact on the environment, health and on socio-economic conditions.

One particular use of genetic engineering has become particularly worrisome. It is now possible to modify crops genetically so that they produce chemicals for pharmaceutical use. This process is known as "pharming". A crop that has been genetically modified for pharming may transfer its transgenes to food crops through cross-pollination. Consumption of such affected crops would be tantamount to feeding on medicine without a doctor's prescription. Such an abuse of medication could lead to poisoning.

Once a crop is genetically modified to produce certain chemicals and its genes find their way into the crop population, it may not be easy or even possible to breed them out of the population. The crop may, therefore, be irreversibly modified. That is one of the key reasons why the Cartagena Protocol on Biosafety is based on the Precautionary Principle. The fact that major staple crops such as rice and maize are targeted for pharming is particularly worrisome for purposes of food security.

One ethical conclusion is, therefore, that when there is no obvious overriding advantage, it is better not to genetically engineer a crop. Even genetic engineering of animals that are used for food could become risky, especially if the transgenes are taken from micro-organisms or plants.

If it is impossible to ensure conditions for containing the genetically modified crop, animal or micro-organism to ensure that transgenes will not find their way into any part of an agricultural or natural ecosystem, genetic engineering for pharming purposes seems to be ethically unacceptable.

Food can be considered unsafe for consumption because of religious or cultural reasons. When food is locally produced and consumed, its composition and handling will most probably remain sensitive to these religious and cultural values. Such sensitivity is reduced with distance, and hence with globalization. A greater sensitivity is thus required of the transnational corporations and various governments that are driving the globalization process. This sensitivity is especially needed with transgenic food sources. Care must be taken to ensure that the sources of the transgenes do not offend these existing sensitivities.

Poverty can push people to eat unsafe or unhealthy food. That widespread poverty remains in our world during this era of unprecedented wealth and quick communication and transportation is an ethical challenge to humanity.

ETHICAL ISSUES IN FOOD AID

While the right to be free from hunger has been recognized as a fundamental human right, the stark reality is that hundreds of millions still suffer from hunger and malnutrition. Extensive pockets of chronic hunger exist in many countries because of inadequate access to land or to income with which to purchase food. It is an ethical imperative for States to pursue a rights-based development with the aim to ensure that all their inhabitants have access to adequate food, and an imperative for the international community to assist in creating opportunities for every State to reach that objective.

International food aid will remain a necessity in many crisis situations, whether they are human-induced or the result of natural disasters or environmental degradation.

The Panel recognizes that the international community has developed significant institutional capacity to provide food aid in such situations, but significant shortcomings remain in quantity, quality, safety and delivery. More preparatory measures should be taken to ensure that food given is sufficient, adequate, culturally acceptable and safe, and provided in ways that help to restore sustainable food security in the affected areas as quickly as possible. Donor States should ensure that their food-aid policies strengthen the will and ability of recipient States to ensure food security for all, with particular emphasis on the most vulnerable.

The food aid given should not disrupt local food production, and donors should promote increased use of local and regional markets to meet the food needs in famine-stricken areas. The Panel refers in this connection to Article XII.1 of the Food Aid Convention, 1999, which reads: "In order to promote local agricultural development, strengthen regional and local markets and enhance the longer-term food security of recipient countries, members shall give consideration to using or directing their cash contributions for the purchase of food: (i) for supply to the recipient country from other developing countries ('triangular transactions'); or, (ii) in one part of a developing country for supply to a deficit area in that country ('local purchases')". The food aid should be carried out in ways that facilitate longer-term rehabilitation of, and development in, the region, and thereby help to make the affected groups food secure at the earliest possible stage.

The aid should meet the nutritional and dietary needs of the receivers, and should be in conformity with local food cultures.

Ethics requires that food aid given in crisis situations should respect international food-safety and food-aid standards. Informed consent should be obtained from the recipients to avoid distrust, which can seriously weaken the effectiveness of the aid. Should genetically modified food be the only available option, it is essential that it be given only as processed food, not as seeds that could cause transgenic plants to mingle with local plants, with unpredictable environmental consequences. Even if this qualification is respected, the long-term health effects are little known. Thus, the victims of starvation may ironically be open to long-term health effects even as their immediate survival may be ensured with genetically modified food.

The decision of a recipient country not to accept genetically modified food should be respected.

ETHICAL PERSPECTIVES ON ANIMAL WELFARE AND THE INTENSIFICATION OF ANIMAL PRODUCTION

FAO has begun exploring various approaches and parameters to address animal welfare in the context of intensification of animal production. This is a welcome and timely move, as policy-makers have not, or have inadequately, addressed the ethical dimension of animal husbandry in its current industrial form. Public awareness is also generally low. Yet, a

number of developing countries are embarking on the intensification of animal production, following the model of industrialized countries.

The social and cultural contexts for animal husbandry are diverse. The family farm in Europe that relies on mechanical systems, the corporate-scale management of animal production and the small farms in a developing country each raise different ethical concerns and corresponding responses.

The Panel recommends that FAO, in its further work, should take a comprehensive approach. This could include: the spectrum of relationships between humans and animals in different cultures and societies, and their respective ethical underpinnings; a distinction between *rights* and *values* as they relate to animals; the ethical implications for those developing countries that are considering the intensification of animal production for the export market, in the context of the diverse social and cultural situations; the other non-food multiple uses of animals in agriculture.

The Panel also recommendes that FAO examine the ethical implications of the application of new and emerging technologies, including genetic engineering of animals for pharmaceutical production and cloning. With the advent of genetic engineering, the range of animals that is used for experimental research is also increasing. These trends leading to new forms of intensification of animal production need to be examined as societies and their policy-makers are assessing the new technologies.

The Panel noted its appreciation of the paper *Animal welfare and the intensification of animal production: an alternative interpretation* by Mr David Fraser.[4] The "alternative interpretation" was innovative and can stimulate useful discussions. Because it is explicitly limited to the situation and evolution of intensive animal production in North America and Europe, the recommendations are accordingly tailored to those regions. The Panel agreed that it would be an important contribution to the FAO Ethical Readings.

THE ETHICS OF SUSTAINABLE AGRICULTURAL INTENSIFICATION

The intensification of agriculture has increasingly become a large-scale business in many parts of the world, not only in industrial countries. This acceleration has been facilitated, to a great extent, by development of biotechnologies. Agricultural intensification here is understood to occur when there is an increase in total productivity resulting from a higher productivity of inputs, including better or more suitable seeds, more effective use of fertilizer, improved agricultural practices and the like. Agricultural intensification is also accomplished when a certain level of productivity is maintained while the inputs are reduced. The primary concern herein is with increased productivity.

More than 800 million people in the world are severely malnourished. The human life expectancy of 75 years, common in developed countries, is much shorter in the developing regions of the world, owing to child mortality and malnutrition throughout the life span, as well as poor medical care and other factors. Hence, there is serious concern and an urgent

[4] FAO. 2005. *Animal welfare and the intensification of animal production: an alternative interpretation*. FAO Readings in Ethics 2. Rome (available at: http://www.fao.org/DOCREP/009/a0158e/a0158e00.htm).

commitment to increase food production in ways that can make food available to those who are presently food insecure, and therefore to improve food distribution and availability in regions where food is scarce.

The Panel identified two related concerns with ethical implications: (1) how to expand the availability of food to those in need, while (2) avoiding harmful ecological and other consequences, such as a decrease in genetic diversity owing to overuse of ever fewer seed varieties and reduction in the variety of cultivated crops, including a tendency to replace crops that are traditional in and limited to particular cultures or regions of the world, because of their lower productivity.

Agricultural intensification has gradually occurred since the Neolithic revolution. Indeed, the "invention" of agriculture as a technology to obtain food beyond hunting and gathering was in itself a form of intensification, which was, in turn, a prerequisite to human civilization. The agricultural "revolution" – that is, the development of agricultural crops and the domestication of farm animals, which happened independently in various centres in Africa, the Andes, Central America, the Far East and the Near East – made possible the creation of villages and, eventually, larger human settlements, as the increased production of food enabled a dramatic growth of the human population.

Yet, throughout human history, a sizable proportion of humankind has suffered from malnutrition and hunger. There can be no doubt that agricultural intensification, to the extent that it increases the availability of food for those in need, is ethically desirable. The "right to food" has recently been acknowledged by the community of nations. The implementation of the right to food calls for an increase in food supply in ways that can overcome situations of food insecurity. To achieve this increase will require agricultural intensification, but it is also access to food, and not only the amount of food produced, that will make fulfilling the right to food possible.

The Panel reiterates the recommendation made by the previous Panel at its second session (2002) that agricultural intensification could be and should be ecologically sound, avoiding greater dependency on and gradual reduction of non-renewable resources and maintaining respect for the global biosphere. Agriculture consumes, modifies and, in many respects, sustains natural resources. Farmers exploit nature but, through the domestication of agricultural plants and farm animals, they also contribute to the diversification, conservation and enrichment of natural resources. There is an ethical imperative that agriculture use wisely all natural resources and ensure that non-renewable natural resources be preserved for future generations.

Ethical considerations of agricultural intensification go beyond the utilitarian consideration of satisfying hunger and avoiding malnutrition; they must also take into account the preservation, and even enhancement, of distinctive traditions that define the character of nations and the cultural diversity of human populations. Agricultural practices and their products, as well as the preparation and kinds of food, are important components of the cultural traditions of humankind. Maize, potatoes and tomatoes have become important components of the food traditions of Africa, Asia and Europe, as well as of their folklore, music and the like, since the sixteenth century, when they were imported from the Americas –

where they were, in turn, important staples of the Aztecs and Incas. Similarly, crops original to Africa, Asia and Europe have enriched the culture of the Americas.

Food access must work for the good of society and, thus, not be accomplished at the expense of the other goods that define the national character. The welfare of a nation and its constituent population calls for the preservation of its culture, which includes its traditional crops and agricultural practices. These must be preserved and even enhanced while still taking advantage of, and being enriched by, non-native crops. Modern biotechnologies may, at least in principle, contribute to improvement of the productivity of locally distinctive crops. As noticed in the previous sessions of the Panel, a comprehensive assessment of these technologies is also necessary.

The desirable features of agricultural intensification should, then, vary from one to another cultural setting. Determining which are the desirable features in each particular cultural setting calls, of necessity, for the involvement of local farmers and the local population. The relevant stakeholders must be involved in a decision-making process that will have an impact on their own interests as well as those of future generations.

ETHICS, NUTRITION AND THE VOLUNTARY GUIDELINES ON THE RIGHT TO FOOD

In the report of its second session, 18–20 March 2002, the Panel expressed its deep concern over the global problems of hunger and undernourishment in a world of plenty. Although the number of undernourished people in developing countries has been declining, the rate of decrease is disturbingly low. The current pace has to be increased by at least tenfold in order to halve the number of people who were hungry in 1990 by 2015, a goal set at the World Food Summit in 1996 and reaffirmed at the Millennium Summit in 2000.

To support FAO Member Nations in their efforts to achieve the progressive realization of the right to adequate food in the context of national food security, in November 2004, the FAO Council adopted the Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security. This human rights-based practical tool contains 19 specific guidelines to guide States in developing their strategies, policies, programmes and activities for the achievement of national food security.

The Right to Food Guidelines cover a wide range of concerns related to many aspects of national food security. Although addressed primarily to States, in addition, they recognize the important role of various stakeholders, including local communities, civil society, the private sector and the international community. These elements of the Right to Food Guidelines provide ample opportunities for creative and cooperative undertakings. But, at the same time, they give rise to ethical issues, such as those related to Guideline 10 on Nutrition, for example – priority-setting, public–private collaboration and balancing the interests of the individual and government.

The forms of malnutrition vary within and across regions of the developing world. In some places, undernutrition and overnutrition co-exist, resulting in the so-called "double burden" of malnutrition. In a few places, overnutrition is the dominant public

health problem. However, for the developing world as a whole, undernutrition and micronutrient deficiencies are much more prevalent and serious. In developing countries overall, almost 800 million people are undernourished, and some 30 million infants are born each year with impaired growth resulting from poor nutrition during foetal life. In terms of undernutrition and overnutrition among preschool children, the estimated prevalence rates in 2005 were 112–141 million underweight and 15.0–22.5 million overweight children under five years of age.

Both undernutrition and overnutrition have serious health consequences and bear large social and economic costs. They both call for appropriate policies and effective intervention programmes. However, the problems of hunger and undernutrition deserve first priority for several reasons. Unlike the case of overnutrition, where the prevalence of undernutrition is high, mortality rates for infants and children under five are also high; even mild-to-moderate undernutrition in young children is associated with a higher risk of dying from common childhood diseases. Moreover, an increasing number of studies support the foetal-origin-of-adult-disease hypothesis of David Barker. If poor nutrition during foetal and infant development is indeed a risk factor for overweight in adulthood, then, preventing undernutrition in early life may be the best way to prevent obesity in later life.

Several surveys have shown an increasing prevalence of overweight in urbanized sections of low-income countries. It is undernutrition, however, that is almost always the dominant public health nutrition problem in poor countries. It is in these countries where there is a much greater likelihood that States fail to respect, protect and promote the people's right to adequate food, and where implementation of the Voluntary Guidelines is most urgently needed.

The high profile given to overweight and obesity may lead those who do not know the sad realities to assume that globally, and in many developing countries, the dominant malnutrition problems are no longer undernutrition and micronutrient deficiencies, but overnutrition. It goes without saying that, in all countries, the adverse consequences of overweight should not be ignored, and appropriate measures should be put in place. However, the enthusiasm to address an emerging problem of overweight should not sidetrack the government in any country from carrying out its responsibility to eradicate hunger and undernutrition. Putting first things first in nutrition is very important both nationally and internationally.

A big challenge facing undernourished countries is to eradicate hunger and undernutrition without finding themselves beset with health problems associated with dietary excess and sedentary living. The difficulty of choosing an appropriate course of action to meet the challenge is illustrated in the case of two countries with long-standing problems of undernutrition and micronutrient deficiencies and an emerging problem of overweight and obesity. Both countries succeeded in fortifying soft drinks with vitamins. One country decided not to recommend the commercialization of the beverage in order to avoid obesity and tooth decay, while the other country took the opposite position in order to accelerate reduction of micronutrient deficiencies.

In connection with micronutrient intake, Guideline 10.3 of the Voluntary Guidelines encourages States to increase the production and consumption of healthy and nutritious foods and to consider adopting regulations for fortifying foods to prevent and cure micronutrient deficiencies. Food fortification has been used successfully as a major strategy to address micronutrient deficiencies in many countries, and has provided a venue for private sector participation in nutrition and health programmes. However, the dangers of unbridled food fortification and scientifically unsubstantiated health claims make it absolutely necessary for States to regulate discretionary fortification, which is the voluntary addition of nutrients to food by manufacturers.

Alongside health claims made in favour of fortified foods are health claims to promote dietary supplements, which have increased by leaps and bounds as more and more associations between specific food components, both nutritional and non-nutritional, and specific diseases are purported to exist, and with the passage of legislative measures that have resulted in substantial deregulation in marketing the supplements. Increasing routine use of dietary supplements, in particular vitamin and mineral preparations, indicates a need to strengthen the food and nutrition education of the public to enhance their understanding that individuals should be able to meet their nutrient requirements by consuming a varied food-based diet, and that supplements are needed only in special circumstances. The barrage of food and health messages from different sources, including experts and media, have made it difficult for the general public to know the way(s) to good nutrition and health. More than ever, consumers need to be better educated to enable them to determine which of the competing claims about this or that nutrient, food, food group or diet are relevant, credible and accurate. The advice of health authorities has a better chance of being understood and carried out when it considers the cultural context of food production, distribution and consumption. Accordingly, Guideline 10.9 of the Voluntary Guidelines encourages States to take into account individuals' practices, customs and traditions on matters related to food. However, this guideline may come somewhat in conflict with Guideline 10.2, which encourages States to take steps, in particular through education, information and labelling regulations, to prevent overconsumption and unbalanced diets that may lead to malnutrition, obesity and degenerative diseases. There has to be some kind of balance between the autonomy of individuals to make their own food-related decisions and the responsibility of government on matters related to the health and well-being of the people.

It is important to weigh carefully the role of various power-holders in decisions affecting the food and nutrition system, nationally and internationally. Some studies have raised serious questions about the nature and extent of influence of some stakeholders in choosing and defining nutrition problems, and in selecting and designing nutrition-directed interventions, including dietary guidelines for the general public. While the Voluntary Guidelines encourage States to involve all relevant stakeholders in the design, implementation, management, monitoring and evaluation of nutrition programmes, they also enjoin the States to take into account in all their undertakings important human rights principles, including non-discrimination, participation and accountability, and not to use food as a tool for political and economic ends.

ETHICAL PERSPECTIVES ON THE GLOBALIZATION OF FOOD AND AGRICULTURE

At its previous sessions, the Panel has focused on the processes of economic globalization in terms of its impact on food and agriculture. The main features are the expansion of foreign private investment in agriculture, food processing and marketing, largely through transnational corporations, and through an international trade in food facilitated by the reduction of trade barriers. The consequences of these processes on societies in the North and South, and in particular their impact on the environment and on people who suffer from hunger and malnutrition, need to be given ethical attention.

The ethical issues involved can be examined from the perspective of efforts at maximizing human survival. Life has existed on our planet for more than three billion years. New species arise and go extinct in a continuing process of change and regeneration. The life span varies enormously from one species to another; some persist for millions of years, others much less. Our human species is young on the planet's geological scale, and we may wonder what the future may bring to us and whether we may be short-lived, perhaps as a consequence of our own actions.

Humans are social animals and, through history, have associated at different scales, from the extended family and the village to the large nations and empires that have intermittently emerged over the past several millennia. Diversity among societies, as well as among individuals, is a desirable attribute of humankind, because it enriches the species in many dimensions. At the level of societies, diversity is expressed in the multiplicity of languages, legal systems, social institutions, forms of government, aesthetic experiences and preferences, moral codes and religious institutions and practices. This cultural diversity, a wonderful attribute of humankind as it is, should be preserved and enhanced, but it is also a source of conflict. Like interactions between individuals, interactions among societies can be enriching, but they can also be competitive, conflictual and even destructive.

Interactions among societies should enable the flow of ideas, knowledge, technologies and resources, as well as the movement of individuals across societies. In the past, distance and physical and language barriers restrained intersocietal interactions, which remained at a relatively low level for much of humankind's existence. Intersocietal interactions have gradually increased since the Neolithic revolution and the discovery of agriculture and animal husbandry in several regions throughout the world, to a large extent in association with the uneven dispersal of agriculture and animal domestication from centres of origin to other regions. Technological developments have further eased interactions among the regions of the world. Globalization has, thus, become possible and, in the minds of many, inevitable. The increasing use of the English language is an important facilitator of globalization but, as is the case in other aspects of globalization, it may have negative consequences. Numerous languages throughout the world have become extinct in recent centuries, and the rate of extinction is accelerating. The extinction of languages entails the extinction of cultures. Loss of cultural diversity is an undesirable consequence of globalization.

Globalization of food and agriculture may also have negative implications, although positive consequences follow as well.

The feature of contemporary economic globalization that entails important ethical (as well as economic) implications is the disequilibrium and other asymmetries between the industrialized countries of the North and the developing countries of the South. Less than 20 percent of humanity lives in the industrialized North. Yet, the North owns more than 80 percent of global wealth. Northern corporations, which are all large compared to their Southern counterparts, establish branches in the South where they buy up or otherwise eliminate, by competition, smaller ones. Corporations thus become transnational, with their headquarters in the North, where most of the economic profits also accrue, often at the expense of the mineral, biological and other natural resources, which are largely the patrimony of the developing South.

It can be argued that this profound inequality is the result of a historical process dating back several hundred years when, in some societies of the West, two important developments coincided: the new emphasis on individualized property and the outburst of technological and scientific innovations. While private property has much deeper roots in history, in a limited part of the world, the vastly increased encouragement of private capital, competition and entrepreneurship profoundly changed these societies and made them differ significantly from others where more collective cultural features were preserved. The primacy of importance bestowed on the propertied individual, gradually operating in conjunction with other such individuals under the construct of "legal person", led to the emergence of the large transnational corporations.

From this perspective, the patterns taken by contemporary economic globalization can be seen as a continuation and expansion of a historically developed superiority of power institutionalized during hundreds of years, where advanced business management combined with capital and technological control are major factors.

The use of technologies to entrench corporate control in agriculture is of particular concern for food and agriculture. One example is the Genetic Use Restriction Technologies (GURTs). In its first session, in 2000, the Panel unanimously stated that "terminator seeds", as they are popularly called, are generally unethical. The Panel expressed concern about the potential risks of spread through pollen of gene complexes responsible for sterility traits, the possibility of the sale or exchange of non-viable seeds for planting, and the potential negative impacts that the use of GMOs (with GURTs) has on genetic diversity. The potential socio-economic impacts on small farmers and indigenous peoples, particularly in the South, were also considered by Parties to the Convention on Biological Diversity in 2000 and again in 2004, with a number of countries having since prohibited the commercialization of GURTs. Yet the development and patenting of these technologies are continuing.

Over the next decade or two, the present trends towards global disequilibrium in wealth and power between the northern and southern hemispheres are likely to become more and more exacerbated, and so will the ensuing poverty of southern countries and accelerating loss of biodiversity, particularly in the tropical regions of the world.

While contemporary globalization has facilitated the free flow of natural resources, goods and services across territories, labour does not have the same possibility to move where the opportunities are. In this profoundly unequal world, the young are likely to become increasingly restive and confrontational. This could result in a rebirth of the local community of like-minded people. It could also result in opposing local communities, exacerbating global tensions.

The drift towards increasing inequality and the loss of diversity can be reversed, however, by reactions against current trends emanating from the countries of the South, as well as from concerned individuals and institutions in the North. If their corrective reactions prevail, a new, genuinely participatory democratic system might emerge, with strong local communities that care for both their members and for their environment. States will become the instruments that serve the local communities in their territories and agents for constructive cooperation in the solution of common problems of a social, economic and cultural nature and in the promotion and protection of human rights. The United Nations or successor organizations might truly become fora for participatory global coordination of decisions and actions of local communities, as well as of Member States and the community of nations. This international democratization process will take place, of course, only if cataclysmic conflicts do not destroy humankind as we now know it by its own actions or natural catastrophes.

Ethical issues associated with the globalization of food and agriculture include the following:

- The growing power of transnational corporations and the growing discrepancies in wealth between northern and southern countries should be monitored so as to reduce the inequities and to avoid greater social and political instabilities within and across countries, especially confrontation between the North and the South.
- Areas of the South that are rich in natural resources are often politically unstable, sometimes owing to competing interventions to safeguard the interests of transnational corporations. International action should seek to forestall and reverse these trends.
- Natural resources, goods and services move freely across territories; labour, by and large, does not, increasing global instabilities, which need to be reduced and ultimately eliminated.
- Famines and genocide continue to occur in the world. International sensitivity needs to be enhanced to deal with them.
- Languages are disappearing fast, and the smaller ethnic groups that spoke them are coalescing into the neighbouring larger ethnic groups. Whole lores of knowledge and untold cultural traditions are disappearing with them. These disappearing languages have not been written, so that the loss in knowledge is irretrievable. Even when a language does not disappear, much of the oral lore is lost when children learn a new dominant language that is written. The globalizing world is not recording such disappearing lores fast enough to save the knowledge they contain. This loss could cost the human species cultural traits that might have been adaptive to local or even global shifts.

- In spite of physical barriers that may be built in response, information will continue to unite the world, and neither rich nor poor, neither North nor South, may stem the flow of knowledge and, eventually, people, across borders.
- Scientific and technological information, on the other hand, continues to be treated secretively by private interests in the form of confidential information concerning matters of science and technology. This process should be reversed so that the growth of science and technology will become universal and to the benefit of all humankind.
- Southern countries may lose their value as markets for the goods and services of transnational corporations and be totally ignored, thus handicapping in one more way their potential for agricultural, industrial and economic development.

Globalization has gone far enough to make isolationist options not possible. Whether strong or weak, whether rich or poor, whether big or small, societies have no option but to work towards a new world where all individuals have their basic rights to air, water, food, health, education and housing respected so that the preservation of biodiversity will be maximized. Otherwise, the human species will experience increasing confrontation and conflict, and perhaps bring about its own demise.

GLOBAL GOODS, GLOBAL SERVICES AND PRIVATIZATION

There is some uncertainty in the terminology we use when we speak about "global public goods". The phrase refers to different types of resources, material as well as immaterial, such as land, water, biodiversity, air, atmosphere or knowledge. That uncertainty is itself the sign that, behind the phrase used, the production and distribution of public goods are emerging today as crucial ethical issues that need to be fully recognized, understood and dealt with as such by the international community. If it is true that the notion could be approached from many different viewpoints as it includes many dimensions – economic, legal, social or human – ultimately they all amount to its ethical or normative import: the concept of GPGs is better defined by its ethical foundations, as well as the thinking and behaviour it demands from the international community.

To think differently, what we primarily need is the notion of "humanity" as a regulative principle. Historically, "humanity" had too often been used in a way that excluded different peoples (defined as barbarians, primitive, uncivilized) from its concept. We can consider that, today, the contemporary global world has come to the notion of humanity as the indivisible totality of all human beings living on earth. What GPGs demand now is that the prospective dimension also be understood and fully incorporated in our understanding of humanity as including the future generations yet to be born. Humanity as an indivisible present and prospective totality is the ethical foundation on which the very notion of sustainability – which is so crucial to the exploitation of common goods – rests. It is also the basis for considering those "global commons" as relevant to public services, not to be privatized, if they have to be managed with full consideration of "humanity" thus defined, that is:

1. Used *equitably* to benefit all and particularly the poor and the disadvantaged, and not just the corporations or the nations that are equipped with the wealth and

technology to exploit the resources. The trend of the dominant world economy towards privatization and ownership of natural and intellectual resources goes against such an equitable use of GPGs.

2. Used *responsibly* with full consideration for future generations: this is an important dimension of intergenerational equity.

The Panel therefore:

- stresses the importance of what is called "ethics of the future" in defining our tasks and responsibilities concerning the "common heritage of humanity", of which GPGs are part;
- emphasizes the importance of promoting a global society and global citizenship and not just global finance or economy. "Humanity" as defined above should be the primary ethical content of globalization;
- calls on governments and relevant international organizations to put GPGs at the centre of international cooperation, beginning with a clear understanding of the nature and scope of these goods. It is crucial to orient our thinking towards the idea that GPGs are an important aspect of peace-building and security;
- calls on the international community to place discussions on international conventions and treaties under the auspices of this ethical notion of humanity when dealing with financing and management of GPGs, protection of natural resources (biodiversity), ownership (private and communal), usufructory and access rights;
- notes, with concern, the trend of privatization of natural resources and commons (from the local to the global) in the pursuit of economic liberalization, and calls for a deeper understanding of this phenomenon, its ethical implications for local communities, nation states and the international community, and appropriate responses.

ETHICS AND INTELLECTUAL PROPERTY RIGHTS IN FOOD AND AGRICULTURE

Intellectual property rights have been extended, especially during the past 25 years, to a wide range of information, materials and products relevant to food and agriculture. The United States Supreme Court decision in *Diamond* v. *Chakrabarty* (1980), which admitted the patentability of micro-organisms *per se*, the adoption of the World Trade Organization Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS Agreement") in 1994 and, more recently, a growing number of free-trade agreements, have propelled the expansion of intellectual property protection in that field. Plant varieties are subject to breeders' rights in a large number of countries, while many allow patents over genes and plant cells, as well as plants as such. Trade-secret protection (e.g. for parental lines) is also available in many jurisdictions.

The granting of IPRs has been justified on different grounds. Inspired by Locke's theories, such rights have been regarded as an extension of the individual's identity: as with other outcomes of labour, intellectual creations would belong to those who produced them. This

conception, which has significantly influenced the protection of authors' rights in Europe, has declined in importance over time as more economic or utilitarian approaches (based on Bentham's ideas) have become central to the development of IPRs law and principles.

Creation and innovation are crucial for improving the quality of life, including through better nutrition. In order to stimulate them, IPRs allow title-holders to make an extraordinary profit and in that way recover investments in research. To attain this objective, IPRs confer exclusive rights that empower title-holders to prevent third parties from using or otherwise exploiting the protected knowledge. IPRs are, hence, an instrument created by society to attain certain objectives. They constitute a tool and not an end in themselves. Their recognition and exercise must be subordinated to the overriding interests of society and, like other policy instruments, subject to ethical scrutiny.

While most innovation for food and agriculture does not depend on IPRs, the acquisition and exercise of IPRs in this field raise a variety of ethical concerns.

First, IPRs protection aims, according to standard economic theory, at encouraging future innovation at the price of restricting the present diffusion of protected products and processes. This theory, however, assumes that the increased prices that IPRs allow title-holders to charge can be reasonably absorbed by consumers, who will benefit in any case from future innovations. But in the context of poor societies, this is not often the case. IPRs protection may just mean the lack of access to innovations for the poor. For example, limiting access to high-yielding seeds, or imposing high prices on inputs (such as agrochemicals) may further marginalize poor farmers and increase social inequality.

Second, the ethical implications of private appropriation of plant genetic resources and their components, as well as of other living forms, need careful consideration. The patenting of merely isolated genes, the basic building blocks of life, has raised particular concerns. Genes are not invented, but are part of nature. Isolating them or discovering what their function is requires scientific competence, but does not involve an inventive activity.

Many national patent laws have recognized the possible conflict between the granting of patents and morality. This is also reflected in international law: the TRIPS Agreement expressly permits WTO Members "to exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect public order or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by domestic law" (Article 27.2).

What is moral or not obviously varies among countries and cultures and evolves over time. For some cultures, the very idea of appropriation of life forms through patents is unacceptable. For example, in WTO discussions, the African Group has objected to the patenting of life forms, as allowed or required (in the case of micro-organisms) by the TRIPS Agreement. As a minimum standard, patents should be rejected when an invention would be so morally abhorrent that its patenting would be inconceivable.

Third, IPRs may not have unethical effects *per se*, but may induce innovation that is ethically unacceptable. For example, the possibility of acquiring patent rights may create incentives for developing technologies that generate suffering of animals or create risks to

the sustainability of farming practices and agriculture. Paradoxically, some of these technologies (such as GURTs) may, in the last instance, make IPRs less relevant, as control over the diffusion of the innovations may be obtained through technological rather than legal means. Under international rules, countries are not obliged to recognize patents over animals and plants, and should consciously use this freedom to set out the rules that fit their economic needs and ethical perceptions.

Fourth, a large number of patents have been granted over planted genetic resources or their associated traditional knowledge, without the prior consent of those who developed or preserved that knowledge or without any benefit-sharing with them. Misappropriation ("bio-piracy") over such knowledge is legally questionable in many cases because of lack of novelty. More fundamentally, it can be legally challenged on the grounds of absence of inventorship, as long as patent applicants have not invented what they claim. There are also serious ethical grounds on which to refuse the attribution of rights to parties who have merely collected existing materials and information. It is necessary to have more transparency in patent applications in order to avoid these practices, such as through an obligation to disclose the origin of the genetic resources and associated knowledge claimed in patent applications.

Finally, while innovations from seed and biotech companies and other formal innovators can be protected under IPRs regimes, farmers' innovations generally remain outside the IPRs system, without any recognition or compensation. This results both from the way in which protectable innovations are defined under standard IPRs laws, and from a lack of the technical and financial resources necessary to acquire and enforce IPRs. The concept of Farmers' Rights, now incorporated into the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), responds to the moral imperative of addressing this unbalance. But the implementation of Farmers' Rights needs concrete and effective actions, which are still missing or insufficient to ensure that justice is done for thousands of individual farmers and communities. ●