

## **80. Ethical issues related to food sector evolution in developing countries: about sustainability and equity**

**Anne-Lucie Raoult-Wack and Nicolas Bricas**

CIRAD, TA 40/16, 34398 Montpellier Cedex 5, France;

e-mail: [anne-lucie.wack@cirad.fr](mailto:anne-lucie.wack@cirad.fr), [nicolas.bricas@cirad.fr](mailto:nicolas.bricas@cirad.fr)

*Keywords: sustainability, equity, developing countries, energy, dietary behaviour, food safety, biodiversity, cultural identity, knowledge property, gender issue*

### **Abstract**

After a century of major technical advance, essentially achieved by and for the industrialised countries, the evolution of the food sector in southern countries should no longer be thought of in terms of a "headlong pursuit". In the present context of demographic growth, urbanisation, increasing poverty and disparities, environmental degradation, and increasing remoteness in Man's relationship to his food, new priorities have emerged, and new ethical questions have been raised, mainly related to sustainability and equity. This paper analyses these ethical concerns in the following terms: can the model of food sector development initiated by the industrialised countries be applied to the entire world on a sustainable and equitable basis, given the effects of this development with regard to the energy consumed, the changes in dietary behaviour and the development of new food-related diseases in industrialised or urbanised contexts, the new demands in terms of food safety, the growing loss of consumer confidence in food products, and the questions of biodiversity and disparities.

### **Introduction**

The present international food landscape is very contrasted between northern and southern countries. Northern countries are richly endowed with a performing food sector, and an overabundance of food, but now have to face the disruptive effects of uncontrolled industrial and technological development on the environment and on society (Raoult-Wack and Bricas, 1998). In Southern countries, the food demand is still increasing and several hundred million people are still suffering from hunger or malnutrition.

Obviously, after a century of major technical advance, essentially achieved by and for the industrialised countries, the evolution of the food sector should no longer be thought of in terms of a "headlong pursuit". New priorities have emerged, which are not solely directed towards the production of healthy, nutritious food for all.

The first section of the paper analyses the challenges facing the future of the food sector in the present context of demographic growth, urbanisation, increasing poverty and disparities, environmental degradation and the increasing remoteness in Man's relationship to his food, that prevails in developing countries. These challenges, as well as present trends in food sector evolution in the North and South, raise ethical questions, mainly related to sustainability and equity, and these are discussed in the second section.

### **Challenges facing the future of food supply in developing countries**

The present challenges facing the future of the food supply stem from the need to satisfy food demand. These challenges have been analysed in previous papers (Raoult-Wack and Bricas, 1998; Raoult-Wack and Bricas, 2001; FAO, 2001). Firstly, food demand is increasing, with the world's population growing at an ever-increasing rate with an 1.7 million new mouths to feed each week. The problem arises mainly in the developing countries. Secondly, food demand is moving away from the areas of agricultural production, owing to the rapid rate of urbanisation, particularly in the developing countries, where it exceeds the rate of demographic growth. Thirdly, food demand is rapidly changing everywhere in line with present-day socio-

economic changes: changes in consumption trends related to changes in lifestyle (less time spent preparing and eating meals, women going out to work, eating out, infatuation with fast food, etc.), changes in the international context, with the new World Trade Organisation rules and the Codex Alimentarius, and changes in consumer requirements in terms of food safety.

All this is taking place in a context characterised by increasing environmental degradation, increasing poverty and widening disparities (Landes, 1998), but also by an overall long-standing, long-term move towards greater remoteness in Man's relationship to his food and to Nature in general. Several factors contribute to greater remoteness. With the movement of urbanisation, with the food sector becoming more industrialised and self-contained, with food supply chains growing longer and more complex and with food processing technologies and food itself becoming more sophisticated, consumers are moving away from their traditional proximity to their food (Raoult-Wack and Bricas, 1998). As a corollary, they are becoming increasingly suspicious of the industrial food sector and its lack of openness. The crisis associated with Genetically Modified Organisms (GMOs) and bovine spongiform encephalopathy (or "mad cow disease") are but further episodes in a series of crises that include baby milk, hormones in veal, food colourings and ionised foodstuffs in Europe, mercury in fish in Asia, and food aid cereals, flavour cubes and mangoes treated with acetylene in Africa (Raoult-Wack and Bricas, 1998; Raoult-Wack and Bricas, 2001).

Over the past decades, efforts devoted to the development of the food sector in the southern countries has been impregnated by the food sector model initiated by the northern countries and dominated by the idea of a transfer of knowledge and technology from the North to the South. Now the question is the following: could this model be applied to the entire world on a sustainable and equitable basis, given the effects of this development with regard to the energy consumed, the changes in dietary behaviour, the new demands in terms of food safety and the questions of biodiversity and disparities (Raoult-Wack and Bricas, 2001)?

### **Ethical issues related to sustainability and equity**

Ethical questioning related to the present food sector evolution were analysed previously (Fresco, 2000; Raoult-Wack and Bricas, 2001; FAO 2001). The challenge is to meet the present needs for food supply, without impairing the future of mankind and Nature. However when considering the long term of the present evolution, several critical trends appear, some of them are listed below (Raoult-Wack and Bricas, 2001).

A first critical trend is related to energy consumption. The present trend in the growth of demand and the rate of urbanisation reinforces fears of a widening gap between people's needs and long-term food production. Town-dwellers eat more meat and more processed products with a built-in service factor (convenience foods), in other words calories that cost more to obtain, and this is accentuated by their rising level of income. To supply populations with enough food, more and more energy has to be injected into the processing system, given the increased sophistication of the technology it uses and the services involved (packaging, portioning, pre-cooking, etc.) In the industrialised countries, it has been estimated that more than 80% of the fossil fuel energy in the food chain is used in post-harvest operations (transport, storage, processing, packaging, distribution, cooking). The food sector accounts for about 30% of the fossil fuel energy used in these countries (Heilig, 1993). The newly industrialised and urbanised countries are hence moving towards an agro-nutritional model in which the energy requirements are too high to be sustainable for the entire world.

The second critical trend is the long-term detrimental effects of present dietary behaviour trends on health. In the northern countries, but also in the newly industrialised countries of the South, the overabundance of food products on the market, with ever-higher fat, sugar and salt contents, combined with changes in lifestyle (less physical exercise) and the blurring of dietetic reference points, is reflected in an increase in illnesses caused by dietary excess: overweight, obesity, diseases of the cardiovascular system, acquired diabetes, cancer.

The third trend deals with the exacerbated consumer concerns about food safety. The need to take this concern into account has become a watchword for politicians and business firms. However, there are major risks involved: i) the risk of reducing the population's immunity in the long term through the provision of increasingly aseptified food; ii) that of creating resistant pathogens, already responsible for a constant increase in levels of food sterilisation; iii) that of preventing the natural protection of food by its natural competitive flora. Too much hygiene may be counterproductive!

The fourth trend deals with the impact of industrialisation of the processing systems which leads to a reduction in variety and biodiversity. Technical constraints of large scale processing lead to the selection of a few adapted agricultural raw materials and microbiologic flora. This is reinforcing the tendency already inherent in the industrialisation of agricultural production systems.

The fifth trend deals with the respect for cultural specificity and identity. Food is a powerful medium for the construction of cultural and collective identities, in a context of major internationalisation. The start of internationalisation is far from recent, given that Europe has imported tropical goods like spices, sugar, coffee, cocoa and tea since the 12<sup>th</sup> century. The major presence of large companies in the media and the world-wide distribution of bread, rice, chicken, dry milk solids, beer, hamburgers and Coca-Cola may provoke fears that local produce will disappear and that food will become completely standardised. This risk must be taken into account, even though further analysis of consumption practices reveals a considerable capacity for appropriating and reinterpreting external elements thanks to local styles of cookery and consumption.

The sixth trend concerns the ownership of knowledge. There is deep-felt anxiety on this subject, as evidenced by the exchanges recorded during the 1999 World Conference on Science in Budapest. It appears to essentially spring from scientific and technical "domination" by the northern countries, the technological and economic dependence of the southern countries, a lack of respect by the North for the South's technical resources (or an ignorance of them), and "pillaging" of the South's resources by the countries of the North (genetic material, know-how, raw materials, scientific skills, etc.) (Raoult-Wack et al., 1999). By identifying and characterising the traditional knowledge of a particular human community, a research team can potentially disseminate it on a world-wide basis, through its publications. Nothing then prevents other communities or business firms from appropriating and using such knowledge. The community that had time-honoured ancestral control of this knowledge can find itself dispossessed of the possibility of putting it to economic use. It is still legally very difficult to protect traditional knowledge, in particular for poor countries that do not have access to the costly tools of international legal protection.

A last trend deals with the gender issue. Whether on a world-scale and over a long period of time or on a more local level, it is noticeable that the development of the food sector often results in the appropriation by men of activities that were usually the domain of women. Even projects for the mechanisation of small-scale processing operations in tropical countries cannot escape this problem. The introduction of motorised mills for cereals or roots and tubers, of oil presses or of dryers very often results in the seizure by men of the know-how previously put to economic use by women. The consequences of this phenomenon are not yet known, but this should still not stop us from wondering about the risks involved.

## **Conclusion**

Current trends in the evolution of the food sector are giving rise to questions and debates of an ethical nature. Some of the ethical questions presented above have already become consumer concerns: the search for less polluting packaging, for more natural, more authentic products that enable consumers to rediscover their roots, the rejection of scientific innovations linked in part to uncertainty about the long-term environmental effects of the technologies used (e.g. transgenic or irradiated foodstuffs). This type of social concern should lead to the revision and modification of priorities, models and methods of intervention in

national and international public policies, in particular research priorities and nutritional education and dietary behaviour, and induce politicians and business firms to pay greater attention to such questions.

**References:**

- FAO, 2001. Problèmes d'éthique dans les secteurs de l'alimentation et de l'agriculture. <http://www.fao.org/DOCREP/003/X9601F/X9601F00.HTM>.
- Fresco, L.O., 2000. Scientific and ethical challenges in agriculture to meet human needs. *Food, Nutrition and Agriculture*. 27,4-11.
- Heilig, G.K., 1993. Lifestyles and Energy Use in Human Food Chains. Working Paper 93-14, International Institute for Applied Systems Analysis, Laxenburg, Austria, 27 p.
- Landes, D.S., 1998. Richesse et pauvreté des Nations. (Original title: The wealth and poverty of nations. Why are some so rich and some so poor.). Albin M. (ed), Paris 758 p.
- Raoult-Wack, A.L. and Bricas, N., 1998. Controllable development of the food sector in tropical areas: main challenges, fields of research and research procedures. *Outlook on Agriculture*. 27(4),225-235.
- Raoult-Wack, A.L., Toulouse, G., Kahane, J.P. and Bricas, N., 2000. Sciences et Développement. *Revue Sciences*. 00(2), 23-28.
- Raoult-Wack, A.L. and Bricas N., 2001. Food sector development: multifunctionality and ethics, *The CIGR Journal of Scientific Research and development*, <http://agen.tamu.edu/cigr/volume3.html>.