



## Shaping the future of agriculture

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**November 2002 was a hectic month for Louise O. Fresco, head of FAO's Agriculture Department.** It began in Manila, where she represented FAO at the CGIAR's annual general meeting. From there, it was off to Dublin for the inaugural consultation of the International Assessment on the Role of Agricultural Science and Technology, convened by World Bank. The month ended in The Hague as guest of the Netherlands government for a public debate on the future of Netherlands diplomacy and foreign relations. December at FAO headquarters, in Rome, promises to be more "business as usual" - which means managing FAO's largest department and its \$90 million biennial programmes on crops, livestock, natural resources, biotechnology and agricultural support systems. To the background chimes of incoming emails (average 100 messages a day), she talked about the future shape of agriculture...

► **The year is drawing to a close on a world facing conflict and uncertainty. In times like these, how difficult is it to keep a focus on issues like poverty and hunger, let alone agriculture?**

"Along with the tension and a sense of insecurity, there is also an acute awareness of our collective responsibility for the well-being of global society. If anything, the past year has seen a deepened sense of global ownership of problems that are all closely linked to agriculture, poverty and hunger - from economic globalization and trade relations to the use of biotechnology and conservation of the environment. In times like these, we have to look for opportunities, and reshaping agriculture for the common good presents just such an opportunity."

► **But some see ahead of us a period of continuing friction over many of the problems you mention...**

"The world is more complex than in the past, and it is being made ever more so by globalization.

Categories like 'developed' and 'developing' countries are probably not useful anymore. We could say there are three 'worlds'. One more or less coincides with the OECD group - 1,000 million people for whom food security is not an issue, who are removed from their agricultural roots, who are increasingly conscious of environmental issues but for whom international aid and development are low on the agenda.

"At the other extreme are more than 1,000 million people who live on less than \$1 day. These people are mainly rural, and they are chronically malnourished either quantitatively - the 800 million or so who simply don't get enough to eat - or through micronutrient deficiencies. They live in countries where the free market economic model does not work, or at least not adequately. They are the ones who qualify most for humanitarian assistance, but the whole approach to development needs to be reformulated, because at present we don't have good answers for these people.

"Between those extremes of wealth and poverty, you have 4,000 million people in countries where the state and the market economy generally don't function very well. On the positive side, however, many of these countries really want to participate in the market economy, and those are the ones that are pressing us for assistance in accessing world markets, protecting their food chains, implementing good agricultural practices, applying biotechnology, and so on.

"That global panorama correlates with how we look at agriculture developing in the future. The first is that the challenge is still definitely about food quantities. But we have not looked enough yet at food quality, which means not only food safety aspects - unwanted residues, hormones, pollution, etc. - but also the very strong link between food and human health. It's increasingly evident that many chronic diseases, such as cancer and cardiovascular diseases, are closely related to diet. The question: is how can we ensure that in 10 years time everyone has access to a healthy diet? We are not yet there at all.

In many countries, the agriculture sector isn't geared to produce sufficient lean proteins and vegetables, let alone produce it in a way that reaches everyone at a reasonable price. Part of the solution may be plant and animal breeding programmes that select for health-related characteristics, not just for yield, which means re-thinking our whole approach to technological advances in agriculture."

► **Globalization seems to have a bad name particularly in the sector of food and agriculture. What are its implications for agricultural development?**

"Like it or not, the world is going to be evermore interconnected. There are massive movements of people and goods and it's unlikely it will stop. But the major paradox of the market economy model is that the more you globalize and the more you leave the market free, the more you need to regulate it, to correct its negative effects on public goods - such as the environment, equity and public health. That is why we need agreements, guidelines, standards and standard-setting authorities, and this is the area where FAO has a rapidly growing role: in advising the middle group of countries, in shaping the thinking of the richer countries, and protecting the most vulnerable at the bottom end of the scale. What we should aim for is 'globalization with a human face', one that respects diversity. To achieve that, we might take the advice of the economist, Joseph Stiglitz, to 'scan globally and re-invent locally'. Local adaptation often amounts to reinventing best practices in a new context.

► **Biotechnology arouses both enthusiasm and alarm. How do you see its role in agriculture?**

"There is no consensus in most countries on how biotechnology and, in particular, genetically modified organisms [GMOs], should address the key challenges in food and agriculture. FAO recognizes both the great potential, and the complications, of these new technologies. Some of the reactions to biotechnology are irrational, but the important message is that people feel

they have not been adequately consulted on the question of what shape their food production, food supply and agriculture should take. But much of the public alarm overlooks the fact that biotechnology's greatest potential is **not** in GMOs but in biotechnology processes - molecular markers, proteomics and so on.

"Taking a long-term view, biotechnology may offer some interesting alternatives for major regions of the world where agriculture will be the economic mainstay for the foreseeable future. For example, in marginal, dry areas, could goats and sheep produce pharmaceutical or other chemical products in their milk? At the moment that presents both technical and ethical problems - it would be mean some biological change in the makeup of those sheep and goats - but it would certainly help these areas produce something with a very high value per unit of product. Of course, such an approach is not acceptable to large parts of the public right now, although the use of biotechnology for medical purposes has become more acceptable.

"Because biotechnology raises all kinds of possibilities, we need to get a better idea of what is technically possible and also look at the ethical issues and at how we can involve producers and consumers in the discussion. This is one of the crucial questions being addressed by the World Bank's International Assessment of Agricultural Science and Technology, which FAO is co-chairing. What should we do with biotechnology - what part can it safely play in increasing productivity and improving crop traits, what role will classical breeding play? But, just as importantly, how we can put in place sufficient safeguards to ensure that biotechnology is not going to be dominated by a very small number of private companies, how to ensure adequate access for poor countries and devise checks and balances on the safety side? Here we should be worried about the weakening of the state. Where the market fails - or, in a way, is too successful - there must be a role for the state to regulate, both internationally and nationally. A weak state is going to be disastrous for poor people, and this is where the main risk of biotechnology lies."