

# Commitment will feed world

Rapidly growing populations, ongoing urbanisation and global efforts to lift more people out of poverty are leading to new patterns of food consumption. **Jacques Claassen** reports.

**W**hile there are technically no reasons to doubt our capacity to feed the world's growing population, challenges abound. Food safety and modern biotechnology scare many people. The understanding of urban populations of where food comes from, and how it is produced, is dwindling.

This is according to Prof Louise Fresco of the University of Amsterdam who recently held a series of lectures in South Africa.

Land totals only 30% or 15 billion hectares of the Earth's surface area and there are only 1,5 billion hectares of arable land for food, feed and fibre production. In 2010, arable land amounted to only 0,2ha/person – or the equivalent of a plot of 45m x 45m – while the required minimum was 0,5ha/person. Therefore, the question arises whether we can produce sufficient food.

"Thanks to technological advances, it nowadays takes only 12 man-hours to produce 1ha of wheat compared with 600 man-hours in the Middle Ages. Moreover, average yields have increased tenfold, while labour productivity has increased 200 to 300 times," said Fresco.

She added that although there was a definite place for smallholder production, agriculture was no longer a craft, but an industry.

Instead of adapting to the environment, agricultural production is carried out by trying to control the environment. During the last 50 years in particular, technological advances such as genetic improvement and improved growing techniques using fertilisers, pesticides, irrigation and substrates in greenhouses have enabled farmers to reach a high level of value-adding.

## 'I ASK MYSELF IN WHICH CASES ONE COULD HELP THE POOR WITH BIOTECHNOLOGY'

"By using the best conventional crop technology and the best of biotechnology where there are no alternatives, citizens, countries and governments around the globe should work together for a hunger-free and more peaceful world," said Fresco.

Biotechnology alone will not be the solution to produce quality food in sufficient quantity.

"I'm against people saying unless we've got GMOs we cannot feed the world. As a scientist, I ask myself in which cases one could help the poor by using biotechnology. Fighting striga in Africa is such an example. With GMOs, we should move



PROF LOUISE FRESCO

forward cautiously and in a balanced way."

Striga or witchweed is a weed that affects cereal crops in many parts of Africa, reducing production by 30% to 100%.

The world's current population exceeds seven billion, of which two billion do not get enough micro-nutrients, including 850 million that go hungry. Two billion

people, meanwhile, are overweight. Obesity is also often a result of poverty.

Given projections that the world population will exceed nine billion by 2050, indications are that another two billion will be malnourished by that date, according to Fresco. Unless inroads are created to provide the first two billion with proper diets, there is a worst-case scenario that four billion people will not have enough micro-nutrients by 2050. The human body needs at least 200g of fruit and vegetables per day.

Producing sufficient food that is appropriate in a specific cultural context goes hand in hand with increasing purchasing power. Currently, an income of \$1/day/person is regarded as the poverty threshold.

Fresco said that the Millennium Development Goal of halving the world's poor by 2015 had been reached two years ahead of time. But although one billion people had been lifted out of poverty in the last 20 years, 75% of these were in China.

"The next one billion people who are to be lifted from poverty are

living in Africa and southern Asia," she said.

## CONCERN

According to Fresco, growing urbanisation and increased income levels lead to higher demands for animal proteins and a greater dietary diversity. The middle and upper classes increasingly consider food as a way to establish identity and seek health, in the process increasing the market for fruit and vegetables. But they have shown a greater interest in fast food.

Another factor is that consumer concern has led to increased demands for transparency and regulation for sustainable, animal and environmentally friendly production. Today, the entire food chain is the focus of optimal resource use efficiency, including energy and reducing greenhouse gas emissions.

Fresco regarded the notion that metropolitan agriculture could make a significant contribution towards food security as wishful thinking. "It might work in SA cities, but not in megacities with limited space and where soils are polluted." Recycling of organic waste was, however, an encouraging trend, she felt.

Convinced that the world would be able to feed its population, she expressed concern that too many governments were unaware that investment in agricultural research could make a bigger contribution to fighting poverty than investing in other sectors.

She also advocated including these topics in school and university curriculums.