In this issue

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This issue contains ten original papers, five of which form a special section arising out of a food security initiative by Stellenbosch University, South Africa. There are also three book reviews.

The first of the original papers by Ali Oumer and associates concerns the relationship between soil management and livelihood strategies among householders in the Central Highlands of Ethiopia. They showed that those households which derived their income mainly from potatoes were not only better off than those which adopted other livelihood strategies, but were also more likely to undertake good soil management practices such as applying compost and manure, techniques which are likely to maintain fertility.

Marcia Chaves and associates point out the fundamental role played by wheat in the calorie and protein requirements of much of the world's population and discuss how this is threatened by the three rust fungi that infect the crop; stem rust, leaf rust and yellow rust. These three rusts not only cause debilitating diseases but, owing to their ability to produce fantastic numbers of airborne spores, spread rapidly. Additionally, resistance genes, which may have been laboriously introgressed from wild relatives of wheat, seldom give protection for long as the fungi mutate to overcome the resistance they confer. One particular example is that of the races of stem rust known as “races of the Ug99 lineage”, so named because of discovery of the initial race in Uganda, which was reported in 1999. These races are able to overcome the resistance conferred by at least three resistance genes. Unfortunately, wheat in Africa, the Middle East and South Asia is dependent on these genes for resistance to stem rust. The races of the Ug99 lineage therefore represent a considerable threat to food security in these areas.

The next two papers are concerned with “chemicals”, the word being put in inverted commas as often what people mean is synthetic chemical compounds. However, as Gordon Gribble points out in his paper “Food Chemistry and Chemophobia”, everything, including food, is chemical although we may choose more attractive words to describe the chemicals we like such as aroma and taste as opposed to the synthetic ones we don't. Gribble defines chemophobia as the exaggerated fear of anything “chemical” and states that it is quite widespread in the Western world and in Asia. Pesticides are, of course, chemical compounds of concern owing to the possibility that they may affect non-target organisms, including ourselves, yet it has been estimated that we consume 10,000 times more natural pesticides than synthetic ones. Antibiotics are a particular class of pesticide with which most people are familiar and many have received for treatment of bacterial infections. However, they are also used to treat animals. Consequently, meat from treated animals may be contaminated by antibiotic residues which may be consumed by humans. Peter Silley addresses the question of the effects of such residues on the human intestinal flora, an important step in ensuring the safety of our food supply.

Kym Anderson and associates make the point that Asia is home to the majority of the world's poor, and more than 60 % of the budget of poor households there is spent on food. Although the recent short term price spikes in agriculture products have had serious implications for the poor, they argue that long-run trends have policy implications for food security that are at least as important. Using projection of markets to 2030, they show how trade policies are altered to insulate domestic markets from short-run fluctuations around their long-run trends and examine policy options for ensuring food security in Asia and elsewhere. These include boosting the growth rates of agricultural productivity to deal with long-run concerns and using more-appropriate domestic policy

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measures rather than trade policies to cope with price volatility.

In the first of the papers from the Stellenbosch University Food Security Initiative by Scott Drimie and Milla McLachlan, the authors state that food systems are complex and cannot be understood and addressed using mono-disciplinary approaches only. They therefore argue for a systemic approach to address food insecurity in South Africa which will combine rigorous disciplinary and interdisciplinary research involving health, agricultural and social sciences as well as engineering.

Sydney Mavengahama and associates point out that wild vegetables are an important source of food in South Africa where they are eaten as “relish” to accompany the main staple, maize, although for very poor families they may substitute for some food crops. Not only do these wild vegetables make the staple more palatable, they are also important sources of essential micronutrients, such as beta carotene, zinc, and iron. Absence of these from a diet results in “hidden” hunger.

Louwrens Hoffman and associates ask the question, Are gamebirds a sustainable food source in southern Africa? They answer in the affirmative, providing that certain criteria are met. These revolve around the quality of the meat, which is contingent on both the environment of the birds when they are alive and post mortem. They also point out that guinea fowl are already farmed extensively by villagers in Zimbabwe.

Sue Jackson and associates have carried out a wide ranging study of the potential for enhancement of mussel and oyster culture in Saldanha Bay which lies some 65 miles Northwest of Cape Town. The bay is part of the Benguela Large Marine Ecosystem and in summer, strong wind-driven coastal upwellings bring cold nutrient-rich water to the surface. This provides a productive environment for phytoplankton growth and pulses of this rich water move into the Big Bay section of Saldanha Bay every 6–10 days creating a sheltered yet well-circulated environment that is one of few suitable for oyster and mussel culture in South Africa. The authors calculate that mussel and oyster culture in the bay could be increased by between 10 and 28 fold with consequent increase in employment and livelihood

opportunities. Unfortunately, a number of factors stand in the way of achieving this. They range from regulatory issues, such as incomplete implementation of a cohesive and accessible financial support policy, to slow processing of mandatory samples required to monitor product safety. Other problems include price undercutting by imports subsidized in their countries of origin, extremely high lease fees for water levied by the parastatal harbour authority and lack of medium- and long-term lease tenure.

The final South African paper by De Cock and associates concerns food security in the rural areas of the Limpopo province of the country. In a survey of 599 households, 53 % declared themselves to be severely food insecure. The main household characteristics that determined a household's food security status were shown, by multivariate analysis, to be education, household size and dependency ratio, household income and district in which the household was situated. The authors consequently suggest that policy priorities should be focused on the promotion of rural education and creating an enabling environment for the rural labour market.

Food security is the subject of the three book reviews, differing perhaps in the readership to which each would appeal. *Food Security in Australia* is a collection of 28 chapters written by a total of 68 contributors. Despite its title some of the information is relevant to other parts of the world, which is unsurprising considering that Australia, in addition to largely feeding its own population of 22 million, also exports sufficient food to feed a further 40 million. The other two books, “Full Planet—Empty Plates” by Lester Brown and “One billion hungry: can we feed the world?” by Gordon Conway are more universal. The first is quite short, 150 pages, and is designed to give the concerned citizen a grasp of the subject. The second at 439 pages with its challenging question in the title is remarkably comprehensive. As Jeff Waage, the reviewer states, it is essential reading for anyone seriously concerned with this question, whether they are development professionals, agricultural scientists, or concerned citizens seeking a better understanding of the complex relationships today connecting hunger, poverty, agriculture, globalization, science and environmental change.