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EDITORIAL

In this issue

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This issue of Food Security contains 10 original papers and two book reviews. The first two papers discuss policies involving food and agriculture, with health an additional factor in the first of the two. These are followed by seven concerned with a variety of constraints that affect farm productivity in Tropical Countries and methods for dealing with them. The final paper deals with the importance of entomophagy (consumption of insects) in parts of South Africa and Zimbabwe.

In the first paper, Rebecca Kanter and co-authors have done a great service by analyzing 37 frameworks that describe the relationships among agriculture, food systems, nutrition and public health. Building on this analysis they have constructed an extremely useful diagram, which is relevant to a range of countries, particularly those in the low and middle income bracket. Understanding these linkages is key to successful policy interventions in these areas. Could the authors be persuaded to produce a poster version, which should then have pride of place on the walls of every policy maker concerned with these important developmental issues?

Leading on from this first paper, Johan Oldekop and co-authors make the point that "poverty, food security, and sustainability are intimately intertwined, driving conflict and synergy between environmental and societal concerns". Their focus is on a case study in the state of Minas Gerais, Brazil concerning the impact of the Purchase with Simultaneous Donation (PSD) program. Unfortunately, this has been limited, participation in the programme having no effect on changes in local agricultural practices, production or income. They suggest that management strategies, which are able to respond to local market conditions, could lead to more equitable and efficient food security and agricultural policies in Brazil, and these could be relevant in other countries.

The third paper by Travis Reynolds and co-authors is an impressively broad review of research, since 2000 in Sub-Saharan Africa and South Asia, into the environmental impacts and constraints associated with the production of major food crops. These are rice, maize, sorghum/millets, sweetpotato/yam and cassava. The authors show how pre-production of these crops can lead to a host of deleterious environmental impacts including soil degradation and erosion, the loss of wild biodiversity, loss of food crop genetic diversity and climate change. During crop production further negative impacts include soil nutrient depletion, water depletion, soil and water contamination and pest and diseases. Post-harvest environmental interactions are also discussed and the article concludes with a range of good practices for smallholder farmers, highlighting better management of crop x environment interactions and reduction of environmental impacts of crops in developing countries.

The paper by Beatrice Aighew and colleagues points out the difficulties in propagating White Guinea yam (*Dioscorea rotundata* Poir.), an important staple for millions of people in West Africa. In traditional methods, multiplication rates are low and the seed tubers are prone to infestation and infection by pests and diseases, respectively. The authors describe a number of methods with improved multiplication rates and also advocate tissue culture for the production of virus free material.

Water is a precious resource in many parts of the world and a necessity for the growth of crops. It is therefore imperative that it is not exploited in irrigation programmes where the returns do not justify its use. Mikhail Smilovic and colleagues have developed a method for the accurate calculation of potential changes in cereal grain production under different irrigation scenarios. They found in India that the irrigation of

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wheat, as currently practised, was almost optimal but that rice output could potentially be increased by 25%.

Wilson Leonardo and co-workers, studying maize-based smallholder farming systems in Mozambique found that labour rather than land constrained agricultural production and food self-sufficiency. In particular the hiring out of labourers from small farms constrained their availability for weeding at the appropriate time. Moreover, the use of a breathalyzer suggested that labour productivity was impaired by the over consumption of alcohol!

Post-harvest losses are generally considered to be something best avoided but in double cropping systems farmers may be willing to sacrifice some of the yield of the first crop planted in order to take advantage of optimal dates for planting the second (and more lucrative) crop. Peter Goldsmith and colleagues, working in Mato Grosso, Brazil, showed that farmers were willing to sustain greater losses in soybean, the first crop, than might be expected in order to plant the second crop, maize, at the optimum time.

Frédéric Baudron and colleagues point out that farm power appears to be a 'forgotten resource' in Eastern and Southern Africa where tractor hire schemes have mostly collapsed, the numbers of draught animals is declining and there is a growing shortage of labour. As a consequence there is a high level of labour drudgery, which makes farming an unattractive option for young people and disproportionately affects women. They suggest that much of this could be avoided by the use of small, multipurpose and inexpensive power sources such as two-wheel tractors and promotion of energy saving technologies such as conservation agriculture.

Poultry is an important source of meat, eggs and cash in almost all developing communities in Africa. In Ethiopia, during the year 2010/2011 over 42 million poultry died of diseases and other causes. In an attempt to find out if farmers were willing to pay for vaccination against two important diseases, Newcastle and Gumboro, Zelalem Terfa and co-authors used a contingent valuation method. The results were positive, perhaps owing to the severity of the poultry diseases in which farmers may lose whole flocks. They were therefore willing to pay up to 87 Ethiopian Birr (~5 US$) per annum for vaccination.

Interest in insects as a source of food and feed has been growing in the last few years but, in some communities, they have long been viewed as a delicacy. Cathy Dzerefos and Ed Witkowski draw attention to the role played by *Encosternum delegorguei,* commonly known as the stinkbug on account of its malodorous alarm pheromone. Once this is removed the insect becomes a nutritious food, which is highly prized among certain communities in South Africa and Zimbabwe. However, the authors fear that unsustainable harvesting methods, increasing commercialization and land transformation threaten this valuable resource.

Reviewers of both books in this issue of Food Security have reservations about the treatment of their topics. In the first, which is the second edition of *Rearing Animal and Plant Pathogen Vectors* by Maramorosch and Mahmood, Simon Carpenter found little that was new to justify purchase by those who already had the first edition. Moreover, many of the illustrations look dated and are of poor quality, a criticism voiced in connection with the first edition. In the second review, *Convergence of Food Security, Energy Security and Sustainable Agriculture*, edited by Songstad, Hatfield and Tomes, Steven Yearley found that although the ambition of the book, as suggested by the title, is reasonably well met, he thought that the nexus of the three topics of the title could have been better conveyed as well as the integration of the technical, policy and social scientific approaches.