Food Sec. (2010) 2:195–196
DOI 10.1007/s12571-010-0075-2

EDITORIAL

In this issue

Richard Strange

Received: 6 July 2010 / Accepted: 6 July 2010 / Published online: 19 August 2010

This issue starts with a very upbeat review of agriculture in Sub-Saharan Africa by Dennis Garrity and associates. The crucial point here is the intercropping of food crops with shrubs or tree species that fix nitrogen and add organic matter to the soil. These sustain a green vegetative cover of the soil throughout the year—hence the title of Dr Garrity's paper, "Creating an Evergreen Agriculture in Africa". Particular mention is made of the Acacia, *Faidherbia alba*. Not only does this tree fix nitrogen but it also has a remarkable phenology—leaves are shed during the early rainy season when field crops are being established and only regrow at the end of the wet season. Thus there is little competition for light, nutrients or water during the growing season. Dr Garrity documents the important role of such intercropping in boosting yields of food crops and its widespread adoption in four Sub-Saharan African Countries.

The next three papers are also concerned with crop plants. It cannot be reiterated too often that plants are the source of mankind's food and therefore the growth and health of plants are of paramount importance in feeding a world population destined to reach 9 billion by 2050. As pointed out by Julie Flood, the health of plants is a Cinderella subject when compared with that of animals and even more so with that of humans. Yet much poor human health can be laid at the door of inadequate nutrition and indirectly at the door of plant disease which so debilitates our crops. As Dr. Flood mentions, estimates of 30–40% of food lost between "field and fork" are common. She illustrates the problem with an example of a disease of a cash crop , coffee wilt, caused by the fungus, *Fusarium xylarioides*, and stem rust of wheat caused by another fungus, *Puccinia graminis tritici*. In 1998 a strain of the latter was found in Uganda which is virulent for many of the modern wheat varieties. One estimate suggests that 50 million ha or about 25% of the area occupied by wheat is at risk. A particular fear is that it is bound to spread via its wind-borne spores to India and Pakistan where at least two-thirds of the crop is susceptible.

Controlling and preventing the spread of plant disease is the subject of the paper by Katharina Dehnen-Schmutz and co-workers. Using the example of potato in the UK, they show that generally government regulations have worked well in protecting the crop. These include the prevention of the introduction and establishment of potato pathogens and control measures.

Insect pest are another reason for poor yields of crop plants. Since the 1930s, the bacterium *Bacillus thuringiensis* has been used as a biopesticide mainly to control lepidopterous pests of forest trees and agricultural crops, and the larvae of mosquitoes and fly species that are vectors of serious diseases of humans and livestock. The active ingredient is a crystal protein produced in large quantities in the spores of the bacterium. Variants of the protein are produced naturally and others have been synthesized artificially, conferring variation in the spectrum of insects for which they are toxic. The genes encoding some of these proteins have now been incorporated into plants. Such plants have increased pest resistance and therefore the amount of pesticide required for their control has been dramatically reduced, a result that is also beneficial for those working with the crop and the environment. Nevertheless, there are still considerable barriers to the adoption of such "Bt" crops. These are discussed by Alan Raybould in his paper "Bt crops

R. Strange (✉)
Department of Biological and Chemical Sciences,
Birkbeck College, University of London,
Malet Street,
London WC1E 7HX, UK
e-mail: r.strange@sbc.bbk.ac.uk

and food security in developing countries: realised benefits, sustainable use and lowering barriers to adoption".

Price stability is an important component of food security, as graphically demonstrated by the riots sparked by the price hikes in food during the latter part of this decade. Michael Shin analyses market integration in Niger and shows that it broke down in the food crisis of 2004–5 but rapidly re-established once food availability became less restricted. He points out that market analysis provides a monitor of food security and, in times of crisis, illuminates the type of aid required e.g. food or cash transfers. Reliable transport is essential to market integration as underscored by Leathers and Foster in their book "The World Food Problem", which is reviewed in this issue of Food Security, making the construction of serviceable roads a high priority for Developing Countries.

The final paper by Beth Robertson and Per Pinstrup-Andersen is concerned with the alarming rate at which land is being bought up in poor countries by rich countries which are poor in land or water. These deals are shrouded in secrecy and often appear to pay scant attention to indigenous people of the lessor country whose land is deemed "available". Such people may have derived a living from the land for generations and should be protected in any such deals. There is therefore a need to make any land deal subject to an enforceable contract which not only compensates adequately those who may be displaced by the acquisition of their traditionally held land but also makes mandatory the provision for their well-being.

This issue also includes two reports of meetings, one on Development Policy, held in June at the University of Edinburgh, and the other an International Workshop on Food Security held in Beijing in March. The first asked the question "What Can Development Policy Learn from the History of Development?" Here there was trenchant criticism levelled at policy-makers for virtually ignoring the agricultural sector over the last two decades and their selective memory of past development issues. It is difficult to say quite how fair this criticism is but there is no denying that aid to agriculture has actually decreased during this period (see for example the paper by Julie Flood in this issue and the one by last year's World Food Prize Laureate, Gebisa Ejeta—*Food Security* 1: 391–401). The Beijing Workshop's perspective was as broad as this journal's with the overall objective being to review the range of issues underpinning a holistic concept of food security and, more specifically, how these could be addressed in the context of collaboration between China and the UK.

The issue concludes with a review of the book "The World Food Problem: Toward Ending Undernutrition in the Third World" by Howard D. Leathers and Phillips Foster. This is essential reading for all who hold a deep concern about the approximately one billion people on the planet who are undernourished.