In this issue

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This, the third issue of Food Security, consists of an increased number of articles, 14 compared with 12 and ten of issues one and two, respectively. During its production the G8 summit of 2009 released the “L’Aquila” Joint Statement on Food Security, which is reproduced in full on the following pages. Reading through this document one soon realizes that a considerable number of the topics mentioned have already been touched upon or given extended treatments in papers in this and the two previous issues of the Journal. They include the recent spike in food prices, the sustainable management of water and soil and the protection of diversity. It is encouraging to read that the countries represented at L’Aquila have committed themselves to the “goal of mobilizing \$20 billion over 3 years through this coordinated, comprehensive strategy focused on sustainable agriculture development while keeping a strong commitment to ensure adequate emergency food aid assistance.”

The other papers in this issue may be considered to belong to three categories: the experience of hunger and malnutrition (three papers); current and future threats to food security (four papers); and the means of overcoming the many factors which prevent the access of over 1 billion of the world’s population to a healthy and nutritious diet (five papers).

In the first of the three papers documenting the experience of hunger and malnutrition, Siddharth Agarwal and co-authors describe the situation in a Delhi slum where a ratio of >3:1 of unemployed to employed was a significant predictor of household food insecurity and where, according to a four-item scale, 51% of households

were food insecure. The next two papers, one by Scott Naysmith and co-authors and the other by Stuart Gillespie and co-authors document the disastrous worsening of food security in the countries of sub-Saharan Africa where there is a high incidence of HIV/AIDS. Not only does this ghastly disease incapacitate those who should be at their most productive, in terms of earning a living, but the sick also place a heavy burden on other members of families who care for them. In a particularly cruel twist of nature, antiretroviral treatment actually increases appetite which, if not satisfied, gives rise to unacceptable side effects and may cause discontinuation of medication. A further degrading social effect is that young women engage in dangerous sexual activity for gain on the principle that it is better to die later of AIDS than earlier from starvation.

The next four papers deal with threats from different quarters. In the first, by Chris Funk and Molly Brown, the threat is physical—increased drought in eastern countries of Africa over the next 40 years, a trend that appears to be already established. Darrin Martin and Dionne Shepherd address a biological threat, that of a serious disease of maize—an important staple of many African countries—caused by Maize Streak Virus (MSV). Early infections cause total crop loss but losses are less serious if infection occurs later. On a brighter note, these authors report the transformation of the plant with a defective version of a viral gene which is normally required for replication of the virus. The transformants had a high level of resistance against all known variants of MSV. A rather different biological threat is presented by Ebrahim Rahimi and co-authors—the contamination of milk by aflatoxin. Aflatoxins are a group of compounds produced by at least two species of the fungal genus *Aspergillus*, *A. flavus* and *A. parasiticus*. One of these compounds, aflatoxin M₁, is a liver carcinogen which is found in milk as a results of cows

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ingesting feed contaminated with the related compound, aflatoxin B₁ and metabolizing it to the milk compound. The fourth paper concerns the threat to food security posed by biofuels—some laying the blame for a significant proportion of the price spike in cereals in 2008 at the door of this commodity. Niek Koning and Arthur Mol suggest in their paper that there is a need for institutions to balance the global markets for food and energy.

The final five papers are more up-beat and point to the means by which food security can be improved. Sustainability figures prominently in these papers, three of which emanate from sub-Saharan African countries, the fourth from an Indian state and the fifth from the South American country, Bolivia. The first of the African papers by J.C. Bidogeza and co-authors lays the groundwork for better adoption of sustainable farming in the Umutara Province of Rwanda. They show that farms are not homogeneous but may be classified into five types based on the different socio-economic characteristics of the farmers such as gender, age, education, risk perception and land tenure as well as the availability of labour. These affect the type of sustainable technology adopted. The second of the African papers by Kiros Hadgu and co-authors assesses the impact of the tree, *Faidherbia albida* (synonym *Acacia albida*), on agricultural sustainability in the Tigray region of Northern Ethiopia. *F. albida* contributes to the ecosystem in several ways including the fixation of nitrogen, which increases soil fertility and results in better yields of barley grown in the vicinity of the trees. Sustainability is also a

theme taken up by Joel Negin and co-authors in their paper about the African Green Revolution. Building on the model of the Asian Green Revolution they point out that for success on the African Continent a holistic approach must be taken which integrates food availability, access and utilization. Moreover, this must include due attention to gender and nutrition as, without such an approach, inequalities may persist.

Moving away from the African Continent, U. M. Chandrashekara describes the amazing diversity of fruit bearing trees in coffee-based homegardens in Kerala, India. Of the 101 species found there, 46 were cultivated and the rest were non-crop species which were tolerated and protected but otherwise did not receive active management—a welcome contrast to the reduced diversity of species found in other agricultural systems. The final paper by Jeffrey Bentley, Eric Boa and 14 other co-authors (!) describes the great success of establishing Plant Health Clinics in Bolivia. Since 2000 the number of these has grown to 10 and more than 9,000 queries have been received. Early results demonstrate cases of the alleviation of poverty, reduction in pesticide abuse, increased harvests and other benefits. Fundamental to the success of this story is the ready appreciation by farmers that just as clinics for people can improve their health so can clinics for plants promote the health and productivity of their crops. Here, surely, is a model that can be widely adopted in the Developing World!