

REFERENCES

- Chatwin ME. 1998. Family Allotment Gardens in Georgia: Introduction of a European Model for Community Food Security in Urban Areas. <http://srdis.ciesin.org/cases/georgia-001.html>.
- Curtis P. 1995. Urban Household Coping Strategies during War: Bosnia-Herzegovina. *Disasters* 19 (1).
- Gavrilov A. 2000. Urban Agriculture in St Petersburg, Russian Federation. Conducted by the Urban Gardening Club. Copenhagen: WHO Europe - Series on Urban Food Security. <http://www.who.dk/nutrition/Documents/UrbanAgric%20St%20Pete.htm>.
- Lobstein T & Longfield J. 1999. Improving diet and health through European Union food policies: A discussion paper prepared for the Health Education Authority. London: Health Education Authority.
- World Cancer Research Fund/American Institute for Cancer Research. 1997. Food, nutrition and the prevention of cancer: a global perspective. Washington, DC: World Cancer Research Fund/American Institute for Cancer Research.
- WHO. 1990. Diet, nutrition, and the prevention of chronic diseases: Report of a WHO Study group. Geneva: WHO - Technical Report Series 797.
- WHO. 1996. Our Cities, Our Future: Policies and Action Plans for Health and Sustainable Development. Copenhagen: WHO - Healthy Cities Project Office.

solutions and to facilitate action, is essential. Although ensuring broad community involvement is daunting since it is both time and resource consuming, it is vital to ensure equitable and sustainable solutions. This requires public debate, and also effective interaction between policy-makers, institutions, commercial interests and community groups. The family allotment gardening scheme in Georgia illustrates the problems and benefits of community involvement in implementing local food projects (Chatwin 1998). This pilot project involved the community, local authorities and NGOs and was proposed as an institutional mechanism for increasing urban food security, with a secondary aim of democratic institution building. Forty of the poorest families were allotted a 250m² plot of land and they were organised as a (community-based) group to manage this as family allotments. Despite many disputes among participants, the benefits of the approach led to assessment of the model for its potential application to other urban areas of Georgia and the Caucasian region.

The creation of mechanisms, such as Community Food and Nutrition councils, will help to develop and

implement local food policies and ensure an integrated approach. These councils should be organised by the local/municipal authorities with representation from local food producers, retailers, public interest groups working with the environment and community development. Community Food and Nutrition Councils could provide a local framework for: identifying objectives and strategies; monitoring community-based projects; co-ordinating research into sustainable agriculture, urban planning, community development, and reviewing and updating food and nutrition policies.

CONCLUSION

The health risks associated with urban food production and retail sales need to be minimised while more attention should be paid to potential health benefits. The objective of urban food policies should be to promote health through an integrated approach within the local community. Health - including physical and mental well-being - and socio-economic gains achieved could help reduce the widening gap in social inequalities in many cities.

Clearly there are major differences within and between cities. However, important lessons and appropriate actions can be learned by sharing these differences. Action requires the participation and collaboration of citizens, voluntary organisations, retailers, wholesalers, food producers and the local authorities and politicians. Local Agenda 21 and Local Environmental Health Action Plans are being implemented in Europe, which provide a platform for participation.

Implementing local food policies which advocate sustainable food production and equitable distribution, provide a concrete way of improving public health. Growing, buying, and eating the right kinds of food can reduce the risk of major diseases and simultaneously promote a sustainable urban environment.

Designing a Research Agenda on Malaria and Agriculture

Over the last decades, a considerable investment of financial resources has been directed towards the development of curative drugs and vaccines against malaria, and towards the evaluation of chemical insecticides for mosquito control. Historically, the agricultural dimension has received little attention from the research community, despite its importance as a contributory factor to malaria transmission risks and its inherent opportunities for paradoxically minimising such risks. The incorporation of a relevant health component in agricultural research could contribute to the identification of opportunities for minimising malaria risks through agriculturally-based interventions, both in rural and in urban and periurban settings. The CGIAR System-wide Initiative on Malaria and Agriculture (SIMA) co-ordinated by the International Water Management Institute (IWMI) (see the Networking Section in this issue) has taken up this challenge.

How can agricultural interventions help reduce malaria? Some practical examples:

- ❖ **Problem** → Flooding of rice fields promotes mosquito breeding. **Opportunity** → Intermittent irrigation may increase rice yields and control mosquito breeding.
- ❖ **Problem** → Cattle expand mosquito populations through provision of blood meals and creation of vector-breeding habitat. **Opportunity** → Cattle can be used to divert hungry mosquitoes from people (zooprophyllaxis). They are also 'dead-end' hosts to malaria parasites.
- ❖ **Problem** → Pesticides used in production of high-value crops induce insecticide resistance in malaria mosquitoes and can also lead to acute and chronic poisoning of people. **Opportunity** → Control of crop pests through integrated pest management (IPM) approaches may reduce the need for synthetic insecticides.
- ❖ **Problem** → Poor nutritional status contributes to low immunity against infections among children. **Opportunity** → Micronutrients (e.g. vitamin A in varieties of sweet potato, vegetables, etc.) may enhance immunity against infections, including those due to malaria parasites. **Opportunity** → Bucket-kit drip irrigation systems and treadle pumps may enhance food security and income (for purchase of nets, drugs, etc.) among poor households in Africa, Asia and Latin America.
- ❖ **Problem** → Synthetic fertilisers used for rice production cause a rapid increase in populations of important vectors of disease including malaria (Africa). **Opportunity** → Rice fields with freshly applied synthetic fertilisers may enhance the biological control of mosquitoes using *Bacillus thuringiensis israelensis* (Bti). First, by serving as important concentration sites for mosquito larvae. Secondly, by improving the timing of the application of the entomo-pathogenic bacteria, since peaks of larvae appear to closely follow fertiliser application in the field. Improved timing could increase the efficiency of applying Bti, thereby reducing costs.