1.7 Understanding the interface between agricultural production and human health

Background

There is more food now available to the poorest people in developing countries, but food caloric self-sufficiency is not the same as nutritional sufficiency. Malnutrition is still widespread with one-third of children under five stunted in their growth. While agricultural productivity affects nutrition and health, the nutritional status and health of a population affects its ability to learn and be productive.

Because poor groups usually rely on staple cereals, their dietary intakes of micronutrients are often inadequate. In developing countries, nutritional problems particularly affect mothers, children and the aged. Obesity is becoming more common in the Pacific and in more affluent parts of Asia. Obesity results from a change in consumption patterns towards fatty livestock products and foods that require less preparation and can often be stored for longer.

About 30 million people are infected by AIDS in ACIAR partner countries, and the disease is affecting the agricultural economies of entire countries. The extent of illness and deaths is affecting government management in agriculture and causing labour shortages in these countries, reducing the ability to produce more labour-intensive but higher -value horticultural crops and livestock products, manage pests, develop water-supply schemes or earn off-farm income. Also, household cash reserves are often spent on medical treatment rather than nutritious food or education. The epidemic is spreading and the health prospects of infected individuals are worse when they are malnourished. Other diseases such as tuberculosis and malaria kill several million people annually, severely impairing the productivity of agricultural labour in many developing countries in sub-Saharan Africa and South Asia and in less-developed parts of Indonesia and other partner countries. The incidence of malaria is increasing due to resistance to common drugs, increases in the number of water bodies formed in irrigation schemes and bans on the use of DDT, which is often the most effective insecticide in affected countries.

Food-borne illnesses are extremely common in the developing world. WHO data suggest that almost 2 million children die annually from diarrhoeal diseases arising from contaminated food and water. Less food in developing countries is being prepared fresh as rural populations seek off-farm employment; and more food is transported from rural areas to feed growing urban populations. These trends provide conditions for the growth of food-borne pathogens. Other risks to food safety in developing countries include filth, mycotoxin contamination and pesticide residues (see Focus Statement 4.2). Focusing on improvements in food safety for the 'top end of the market' (usually food for export) could distract attention from the main public health issue: the safety of the foods consumed by the majority of the people.

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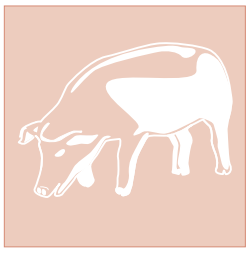

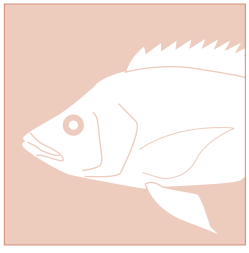

Key strategies

Nutritional status may be improved, and micronutrient deficiencies decreased, by diverting agricultural production from staple cereals and enabling farmers to produce or purchase meat, fruit and vegetables. Economic and technical research can also help to improve the understanding of the distribution systems of different agricultural commodities and policies for agricultural diversification. The move from quantity to quality of fruit and vegetables, to satisfy export markets, can also have a positive effect on domestic markets for the products. ACIAR will maintain a portfolio of projects focused on enhancing the quality of fruit, vegetable, livestock and fisheries products, through breeding, management and postharvest technologies.

There may be opportunities for policy and economic research on the implications of major human disease epidemics for agricultural productivity in developing countries. Technical projects on crop and livestock production and the management of farming systems will take full account of the constraints on the adoption of potentially labour-intensive farming tools such as integrated pest management or alley cropping.

Technical and policy research in food safety will increase in importance; and ACIAR will encourage partner countries to focus on research issues rather than establishing monitoring facilities and systems.

Implementing the strategies

The ACIAR portfolio will continue to shift the emphasis from increased production of staple cereals for caloric sufficiency to production of livestock and fisheries products and fruit and vegetables. We will continue to support projects that deal with the relationship between agriculture and human health. These may include:

- projects that encourage the production, protection and postharvest storage of diverse commodities such as fruits, vegetables and fisheries and livestock products;
- research to enhance the content of micronutrients in staple crops;
- policy, economic and technical projects on food safety, especially emphasising 'whole of production chain' approaches;
- socioeconomic work on dietary choice and the economics of food distribution;
- technical projects to detect and eliminate pesticide residues, bacteria and mycotoxins in foods;
- more research to detect and manage zoonotic livestock diseases; and
- collaboration with International Agricultural Research Centres with special expertise in the interrelationships between agriculture, nutrition and human health.

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