

## EDITORIAL

### **Livestock : key to agricultural development in Africa**

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Africa is now the only major region of the world where food production per caput is declining. It is also the only major region where population growth is accelerating. As a result, imports of basic food staples are growing at 7% a year, and annual food imports, currently about 14 million tonnes, are projected to rise to 40 million tonnes over the next 20 years. The supply and productivity of labour for key seasonal tasks in food cropping is widely regarded as a major factor limiting increased output. Associated with low agricultural productivity is the problem of rapid urbanization, and there are large urban-rural income disparities.

Population growth, food demand, income growth and urbanization are the key variables shaping the agricultural and livestock scenario of Africa and challenging the research system serving it. The next 10 years in Africa will see the largest increase in human numbers yet recorded, and food needs will escalate. The composition of food demand will change, as demand for livestock products rises with urbanization and income growth.

The escalating demand for food will mean further pressure on natural resources, and the threat of environmental degradation will become even more pronounced. Already, overgrazing and deforestation cause widespread erosion, firewood scarcity has reached critical dimensions in some areas, and hillside cultivation threatens the fragile resource base.

This degradation intensifies the need for new technology. Crops and livestock must become higher yielding, more efficient at using fertilizer or other inputs and — above all — sustainable in output. The agricultural growth rate needed in Africa to catch up with population growth is close to 4% a year. Actual growth over the last 15 years has been only one third of this. Increases in land and labour productivity are essential; technological innovations which reduce unit costs will raise productivity; the shortage of cash, credit and infrastructure in Africa's rural areas dictates a low-input development strategy.

All this points to one conclusion: in the struggle to increase African food production, livestock have a vital contribution to make. They are the catalyst for low-cost improvements in agricultural output: as recent research by the International Livestock Centre for Africa (ILCA) has shown, the more animals subsistence farmers have the greater is their cash income, the larger the land area they cultivate, the better seed they can buy and the more fertilizer and manure they can apply; animals contribute substantially to both the area cultivated and the yield per unit area of food crops. Better livestock technology is essential for overcoming Africa's food crisis.

The challenge for ILCA, and for the African national institutes with which it works, is to design livestock-based technology appropriate to the smallholder farms and small pastoral enterprises that will characterize African agriculture for the foreseeable future. New technology must address the daunting array of problems these small-scale producers face at present: declining soil fertility and stability, water shortages, lack of draught power, low cash incomes, dry-season animal feed shortages, difficulties in marketing livestock products, and poor animal health and reproductive performance.

ILCA has done research on a number of low-input technical solutions to these problems. The products that flow from such research are often so rudimentary as to evoke scepticism regarding their effectiveness. Yet it is their very simplicity that makes them accessible to Africa's resource-poor producers. Again, the potential impact of much low-input technology appears slight when each new implement or practice is considered in isolation; only when combined does their real strength emerge.

ILCA's research is now showing what happens when low-input, livestock-centred technologies are imaginatively combined. More efficient cultivation, using single-ox ploughs and yokes, allows farmers to sow their crops earlier over larger areas of land. Fertile black soils prone to waterlogging can be cropped if cultivated in broadbeds and furrows using a simple wooden wing attached to a local plough. Such land is

further enriched when forage legumes, established using natural African rock phosphates, are intercropped with the traditional subsistence food crops. The water harvested through better soil drainage can be stored in ponds dug by oxen drawing a simple metal scoop. These ponds may then be used to irrigate a dry-season crop, fertilized with slurry from a biogas digester made of polythene. Browse legumes grown beside the ponds enrich the improved farming system still further.

When all these technologies are combined, food crop yields rise by several hundred percent while animal production also benefits from the increased quantities of crop residues available for feed.

Sub-Saharan Africa faces a crisis of unprecedented proportions. In many countries an increase in human misery is the only growth factor currently in sight. Yet, given improved technology matched with sensible economic policies, the crisis in agriculture can be turned around. And that is the essential starting point for dealing with Africa's larger economic crisis. If agricultural development is to proceed more effectively in the future than it has in the past, more money must be spent on research to generate low-input technology that enhances the positive interactions between the continent's crop and livestock production.

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