

Sustainable agriculture

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Development Notes

Agriculture is the backbone of Pakistan economy. Almost 20 percent of the GDP, and more than 50 percent of employment come from the agriculture sector. But the sector has traditionally lacked due government attention. As a result not only Pakistan's agricultural output is below its potential, but more worrisome is the fact that even the current levels of production are being threatened due to practices that are degrading the natural resource base.

Measures needed by the government range from providing the right incentives to farmers, strengthening the rural infrastructure, equal distribution of credit to farmers and more complicated issues like land reforms as research shows that small farms are more productive than large farms. But, land distribution in Pakistan is concentrated, with 25 percent of farmland in farms of 50 acres or more. At the other end of the scale are extremely small and ill-equipped peasant farmers. A more even land redistribution can help improve agriculture productivity besides reducing the income disparity.

But while the above issues are essential to increase the productivity of the agriculture sector, two factors that are critical for the sustainability of even the current levels of agriculture output are effective land use and water management. While better water management system is essential for the latter, investment in education and farmers training is critical for the former.

Pakistan agriculture is almost wholly dependent on irrigated water. But the water management system is riddled with problems and requires a complete over all. Basic data on water, which is critical for decisions

regarding use of water, is not available due to under investment in data collection system.

Water decisions are influenced by political and regional constraints rather than being based on careful supply and demand analysis and sound long term planning. And equally importantly, while millions of dollars of aid and loan money has been invested in the past in creating water management structures, not enough human or financial resources have been invested in maintenance of these systems so that they are increasingly becoming less efficient.

As the Indus River System Authority (IRSA) recently revealed in a newspaper, the storage capacity of Tarbela when it was designed was 9.4 million acre feet of water but now its storage capacity has come down to 7.3 million acre feet. Similarly, the current storage capacity of Mangla stands at 4.5 million acre feet as compared to the original storage capacity of 5.3 million acre feet. Designed to store 9 million acre-feet of water, Chashma reservoir at present is capable of storing 4 million acre-feet only. This continuous reduction is due to the rise in silt in reservoirs caused by lack of efficient maintenance systems.

The other key natural ingredient for agriculture, namely the soil, is equally at risk. Roughly eight percent of Pakistan's irrigated land is water-logged and 14 percent saline. Soil erosion has so far affected about 12 percent of the total land. For an agriculture based economy, fertility of the land is a key issue. But, lack of aware-

ductivity of the soil.

One example is the use of pesticides and fertilisers introduced during the green revolution. Many small farmers don't even know how to use them properly as they can't even read the instructions given on the labels. Hence fertilisers and pesticides are overused and damage the soil. Increased pesticide use has created growing resistance among pests and destroyed natural predators. Also, due to lack of check from the government, pesticides brands, banned in the West, have been imported into Pakistan and sold to farmers. The issue of better use of soil and land requires better government policies like some regulation of use of fertilisers and pesticides, plus serious investment in the farmers' extension programmes.

Extension programmes for farmers, which train them about news methods and inform them of latest developments in agriculture, are essential for improving productivity growth and also making the distribution of benefits from knowledge more equitable. But the government extension programme remains very inefficient and poor in quality. The extension workers often lack adequate training, which makes their task of improving the management skills of farmers very difficult. Women and small farmers are often ignored. Feedback from farmers

ness among farmers is leading to short term gains at the expense of damaging the long term pro-

about the programme is always poor. In addition, the provision of extension services is very biased with large farmers getting greater access to it than the poor and more needy farmers.

Enough evidence is there to link increased productivity of farmers with their education levels. A study of total factor productivity in Pakistan found that 10 percent increase in the rural male adult literacy increased total factor productivity in agriculture by 2.7 percent. Another survey in Pakistan showed that many farmers do not have the basic computational and mathematical skills to ensure efficient use of fertilisers. A study in a rice and wheat area in Pakistan found the major reason for level of yield in different rice and wheat farms was farmer's technical knowledge and skills.

Being a primarily agriculture based economy and with a rapidly rising population, there is an urgent need for the government to focus more on the agriculture sector. Fixation with industrial growth has traditionally led to low attention towards agriculture, which has proved very damaging. Also, use of natural resources, land and water for agriculture affects the very environment that we live in. The government needs to pay serious attention to the agriculture sector and undertake the reforms, which have been recommended in various studies of the agriculture sector in Pakistan. It is not surprising that like all other major problems facing Pakistan, investment in education has to be a key component of any strategy aimed at increasing the agriculture productivity as well as for sustaining the current patterns of production. But is the government listening?