

THE NEWS

Reviving agricultural growth: Part - II

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The question we have to address is: what can be done to boost the productivity of 88 per cent of the farms that own less than 12.5 acres of land and cultivate 45 per cent of total farm area.

The highest yields achieved per acre on farms of progressive large farmers (more than 50 acres) is nine times that of small farms and four times that of medium farmers (12.5–50 acres). This gap between potential and actual productivity is to be reduced in order to raise the national average yield of crops and livestock.

Past experience and experimentation provide a lot of evidence upon which the strategy for agriculture transformation can be built. This however would require intense collaboration and coordination between all the stakeholders: the federal and provincial governments, research institutes and universities, private-sector companies, commercial banks, machinery service providers, marketeers, and processors. Unfortunately, the past record hasn't been that impressive but realization of the incoming onslaught of climate change risks that would make us deficient in food, water and energy makes it incumbent upon all of us to wake up to work together to meet those risks.

We have to begin by examining the composition and growth pattern of the agriculture sector. Contrary to the popular belief that makes crops synonymous with agriculture, two-thirds of value added originates from livestock and dairy and only one third by major crops – wheat, rice, sugarcane, cotton and maize, and minor crops – fruits and vegetables, pulses, fisheries and forestry.

The livestock sub sector has been growing at 3.7 per cent per year for the last three decades while the crop sub sector by 2.3 per cent. Increases in crop

output have taken place because of greater use of inputs – seeds, fertilizer and pesticides – rather than due to technical or institutional changes. It is the latter – total factor productivity (TFP) – that is indeed the major driver of growth in every sector of the economy. Unfortunately, TFP accounted for 44 per cent output growth in the 1960s, 67 per cent in the 1980s, and 37 per cent in the 1990s.

TFP now accounts for less than a fifth of the growth. In fact, TFP growth has been contracting since 1998 with positive gains derived by large farmers while a significant decline was recorded on small and medium farms. A modest 10 per cent increase in yields of wheat on average would raise national output to 30 million tons, which adequately meets the domestic consumption. Even such a modest increase would obviate the need for imports, thus saving foreign exchange. After all, large progressive farmers do produce an average of 50 maunds in their land in the same agro-ecological zones.

The proposed strategy consists of six elements: (a) water management; (b) R&D; (c) agriculture financing; (d) import substitution and export expansion; (e) seed improvement; and (f) mechanization, technology and advisory services. Finally, public policy interventions in commodities markets which are creating distortions have to be reviewed and promotion of innovative ideas and practices encouraged.

Water management: As pointed out earlier, Pakistan draws 145 million acre feet (maf) from the Indus River Basin Irrigation System and 50 maf from groundwater. Ninety per cent of surface water is used for agriculture purposes and the rest for urban water supply and industrial use. Of the 106 maf reaching the canal heads only 41 maf reaches crops – due to losses of water illegally diverted at the head, losses in water courses and in fields.

More than 50 per cent of surface water is wasted during distribution and field application before reaching crop root zone. Underground water is rapidly depleting due to over drafting causing the water table to go down. Drought, floods due to climate change, scarcity of usable canal water availability, wastage of water, and depleting underground water tables are all becoming stumbling blocks for agricultural growth in the country.

The federal government and four provincial governors had reached a consensus and approved a National Water Policy in 2018 but after a lapse of five years not much progress has been achieved in implementing the policy. Recommendations had specified targets such as reduction of 33 per cent in the river flows that are lost in conveyance, augmentation of water storage capacity by 10 maf, and an increase of at least 30 per cent in the efficiency of water use by producing more crops per drop.

Drip and sprinkler irrigation and a realistic water pricing policy were recommended for this purpose. Gradual replacement and refurbishing of decades-old irrigation infrastructure was to be undertaken. Real-time monitoring of river flow through telemetry to check the increasing trend of unaccounted for water was to be completed by end 2021.

Investment allocations under the Public-Sector Development Programme by the federal and provincial governments were to be increased. Integrated management of water resources required the highest level of skill and knowledge and therefore the capacity building of all water-related public sector organizations at the federal and provincial levels were to be given high priority. As part of institutional arrangements, a groundwater authority should have been established by each province to lay down and enforce standards for the development and utilization of groundwater. The National Water Council, which is the highest decision-making and coordinating body, hasn't met even once since 2018.

The Supreme Court of Pakistan had also issued a note in October 2018 after arranging an international symposium on water security in Pakistan. The symposium note echoed those of the national water policy. The note emphasized: "It is imperative for Pakistan to invest in supply augmentation, ensure better utilization of its groundwater, adopt appropriate water technologies and manage consumption and use of water and do all of this under the principle of mutual trust and benefit sharing." These recommendations have also not seen the light of the day.

Past experience and studies have shown that lining channels and water courses is clearly the best option as it reduces losses in distribution and

provides protection against drought by making more water available in those years.

Construction of small reservoirs on farms, use of solarized tubewells, rainwater harvesting, and adoption of drip and sprinkler irrigation systems are some other measures through which some of the stumbling blocks faced by small farmers in the optimal use of irrigation water can be removed. The key constraint, however, remains the political economy of governance and management of the irrigation system which has given rise to both inefficiencies as well as inequities.

Average farmers' access to water is less than it could be due to limitations of the water allocation system. Access to canal water is determined by physical location along the canal and through the Warabandi water allocation system of administratively set rotations. Upstream farmers access water illegally and overflow their fields by tampering with the modules and thus enough water is not available to those at the tail end of the distributions on the water course.

In Sindh, direct outlets from the canals have also been allowed. Improving the efficiency of water use including equitable distribution could save an additional 12 maf, not only mitigating the adverse impact of climate change but further boosting overall GDP by 0.9 per cent and agriculture GDP 4.2 per cent on average.

The drainage system, particularly in Lower Sindh, and removal of encroachments along the waterways would mitigate the adversity caused by floods.

To be continued...