The agriculture sector generates about one-fifth of India's GDP, but more than half the population is dependent on this sector for its livelihood.

This suggests reforms which increase value addition and enhance efficiencies in the agricultural supply chain; enhance share of non-agriculture income among the households, and a structural change which reduces the share of population dependent on agriculture.

Key challenges in this sector include:

- Declining size of land holdings; over-dependence on rain;
- Excessive reliance on substantial state support, adversely affecting fiscal position of the Union government and the states, for both the input (zero or substantially below cost inputs such as water, electricity, and fertilizers), and on the output side (mainly through minimum price support to crops, whose scope in terms of commodities covered is broadening)
- Insufficient innovations in production techniques, in marketing, in value chain creation and capture, and in regulatory practices in this sector.

Nevertheless, India produces nearly 600 million tons of agricultural (mainly rice, wheat, sugar cane, soya beans, and millets) and horticultural products (fruits, vegetables, and flowers). India’s agricultural output in 2018-19 crop year (July to June) is projected to be 285 million tons, about same as was achieved last year. In 2017-18 crop year, India's horticultural production was 307 million.

It is in the above context that recent reforms in agriculture, necessarily selective, outlined below need to be viewed. These reforms are likely to enhance economic freedom of agricultural producers, consumers, and value-chain stakeholders; help improve efficiency and value retention, particularly be the producers; could lead to more rational cropping
patterns; and assist in better water management, a critical issue in India.

The reforms would also provide greater global access to India’s agriculture and horticultural products, thereby assisting in better management of India’s external sector.

Recent Reforms

Selected reforms affecting India’s agriculture sector and their implications are outlined below. These may appear diverse, but they nevertheless help address the challenges of the agriculture sector indicated above.

Maharashtra’s Deregulation of Agricultural Marketing

In 2017, the Union Government initiated Model Agricultural Produce and livestock Market Act was passed by the Indian Parliament. Its aim is to encourage states (under the Constitution, agriculture is a state subject) to take initiatives designed to provide greater economic freedom to all stakeholders in the agriculture and livestock sectors; and to facilitate innovations in production techniques, marketing, and in value-chain.

In October 2018, the Maharashtra State, which has the largest GSDP (Gross State Domestic Product) among the states, projected to be INR 28 trillion (about USD 400 Billion), equivalent to little more than a sixth of India’s GDP, deregulated all agricultural produce from the compulsory marketing through APMCs (Agricultural Produce Marketing Board).

As a result, all agricultural produce can now be traded both through 306 APMCs and outside it.

The above initiative follows the 2016 initiative of Maharashtra, similarly deregulating fruits and vegetables. The indications are that for some major fruits grown in the state such as pomegranate, and grapes, around 90 percent of the production is sold outside the APMC channels, mainly at the farmgate.

Traders within the APMC pay one percent service charge. In addition, APMCs levy around 6 percent levy for their services. The prices of commodities traded through the APMCs are generally higher than those traded outside. The pricing power through monopoly exercised by the APMCs may be expected.

APMCs being elected bodies, there have been partisan pollical considerations involved in APMCs functioning, potentially leading to greater volatility in agricultural produce prices then may be expected if the markets were functioning in an orderly manner.

The revealed preference of the producers and consumers to trade outside the APMCs is a strong indication of how the monopoly of marketing by the APMCs had severely restricted economic freedom, stifling alternative marketing channels through which producers and consumers could improve household welfare, while stifling introduction of innovations in marketing and in value chain management.

Maharashtra State has a provision for any of the state’s 306 APMCs to become an MNI (Market of National Importance). The requirement is that the APMC must receive at least 30 percent of the total arrival from at least two other states.
The status of being an MNI would also eliminate requirement for elections to these bodies, as their management would be appointed, with the aim of functioning professionally.

Mumbai, Pune, Nasik, and Nagpur APMCs are likely to satisfy the MNE criterion. This could help in bringing about greater economies of scale in agricultural marketing, enhance competition, and encourage innovations in marketing.

If other major states adopt Maharashtra’s deregulation and the MNI initiatives to suit their contexts, and to stay competitive, benefits to India’s agriculture stakeholders, including producers and consumers, would be even more significant. Such initiatives could help address some of the challenges facing Indian agriculture sector on a much wider scale.

**Better Crop Selection to Manage Water Resources**

Maharashtra State has drafted a groundwater policy aimed at dissuading farmers from growing water-intensive crops such as sugar cane, at least with the traditional method of flood irrigation.

This method, also prevalent in other states, wastes scarce water resources. Drip irrigation is slowly gaining acceptance, even more sugar cane growing.

The above reform could make additional water available for other uses, and mitigate water scarcity, especially in water-scarce areas of the state. It could also lead to more rational selection of crops to be cultivated in a given area.

Its benefits to the country will again be even more significant if other states with water-intensive crops, including rice, adopt this policy for their states. The three largest rice producing states are West Bengal, Uttar Pradesh, Punjab, and Tamil Nadu are water-scarce states.

Karnataka State which grows sugar cane also suffers from water scarcity, and has a long running dispute with the neighboring Tamil Nadu about sharing of water from the Cauvery River. A more rational cropping pattern could help mitigate the intensity of the dispute.

**Greater Access to Global Markets**

As part of India’s plans for port-led development under its Blue Economy program, specific agricultural export zones, linked with sea ports, airports, and inland waterways, are being planned.

India has for the first time transported 16 containers of processed food and beverages cargo on inland waterways NW 1 from Kolkata to Varanasi where a Multimodal Terminal has been built.

According to the data by the World Trade Organization (WTO), in 2017, India’s exports of agricultural products were USD 38 billion, and its imports were USD 36 billion. India aims to increase its exports of agricultural produce to USD 60 Billion by 2022. This will be a challenging but achievable target.
There are opportunities to increase India’s agriculture products, particularly non-basmati rice, white mustard, soya bean, oil seeds, and fruits and vegetables to China, who is exploring sources in addition to the United States for selected commodities due to bilateral trade tensions.

India’s production of only 12 million tons of soya bean can meet only a small part of China’s imports of around 85 million tons at present. So, efficiency enhancement, innovations, and larger area for soya bean growing could help expand India’s agriculture exports globally.

India is aiming to expand export of organic agricultural products. It has obtained equivalency for unprocessed plant products by the European Union and Switzerland and conformity assessment by the USDA (United States Department of Agriculture). India is negotiating with Japan, Canada, South Korea, and Taiwan for equivalency with NPOP (National Program for Organic Food Products).

In 2017-18, India’s exports of organic products were USD 0.51 billion, an increase of nearly 40 percent over 2016-17.

The products exported include pulses, dry fruits, and medicinal plant products. The main markets were the United States, European Union, Canada, Mexico, Israel, and Vietnam.

Madhya Pradesh has the largest area under organic products cultivation, followed by Rajasthan, Maharashtra, and Uttar Pradesh. Sikkim has obtained organic certification for its entire cultivable land.

**Jalyukt Shivar Abhiyan (Water-rich Farmlands) in Maharashtra**

Maharashtra State has initiated a water conservation program to make the state drought free by 2019. This program concentrates on local water conservation and systematic maintenance of water bodies.

The above scheme covers more than 16,000 villages with about 0.5 million projects, creating 2.4 million TMC (1 TMC equals about 28 billion liters) of water storage. 0.4 million farm lakes have been built, with more under construction. About 3.4 million hectares of land has been brought under irrigation under this scheme.

The expenditure on this scheme is projected at INR 77 billion, of which the potential beneficiaries have contributed about INR 6 billion.

This scheme has contributed to the State exhibiting healthy increase in agricultural production, and reduction in water scarcity in spite of significant deficiency in rainfall in the State in 2018.

**Rationalizing Subsidy Payments**

The government is considering paying a part of agricultural power subsidy directly to the agricultural producers, instead of free or cheap electricity. (The Economic Times, November 2, 2018).
This is one of the measures aimed at rationalizing agriculture subsidies. Such measures could better direct the subsidies to the beneficiaries, help increase economic freedom of producers, and lead to more economical pricing of electricity to the agriculture sector.

**Concluding Remarks**

This column has covered only selected recent initiatives designed to address challenges of India’s agriculture sector. There are many such examples across the country.

As with other areas, context-specific seemingly small measures which are well designed and implemented, could cumulatively lead to disproportionately positive outcomes.

India has addressed the challenge of growing enough grains, horticulture, and dairy products, though there is little room for complacency in this area. Deeper and broader measures such as those outlined above would continue to be needed.

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