

# Doubling Farmers' Incomes Mechanisms and Challenges

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The government's initiative to increase farmers' incomes is welcome as it is central to dealing with the agrarian crisis in India. Various mechanisms for increasing farmers' incomes from the perspective of small farmers and farm workers are critically examined. The article proposes a focus on high-value crops and rain-fed areas, non-farm occupations, agro-industrialisation, and strengthening and innovating producer and worker institutions in India. It also presents insights from China's proposed strategy for doubling farmers' incomes there.

One of the major policy initiatives of the National Democratic Alliance government in the agricultural sector is that of doubling farmers' incomes by 2022. This is a laudable objective and, therefore, has generated a lot of academic and popular interest. The need to focus on farmers' incomes instead of production or the growth rate in agriculture stems from the fact that there has been agrarian distress in the sector for the last two decades. Official recognition of the distress and the agrarian crisis came in the form of a NSSO (National Sample Survey Office) survey in 2003, which reported that 40% of Indian farmers disliked farming as a profession due to its low profits, high risk, and the lack of social status and, therefore, would like to leave it at the first opportunity (Agarwal and Agrawal 2017). They were continuing to farm in the absence of opportunities outside agriculture. Further, there are caste-wise differences among farmers in terms of their interest in farming; the higher castes seem to be more disenchanted with farming than Scheduled Caste (SC) and Scheduled Tribe (ST) farmers. Among the SCs and STs, the dislike for farming diminishes with increase in landholding size and increases in the case of other castes (Birthal et al 2015).

The need to focus on farmers' incomes also stems from the fact that a very large proportion of farming households in most of the central and eastern states (23%–45%) live below the poverty line (BPL), higher than the national average (22.5%). The proportion of BPL farming households (17.5%–22.5%), even in some of the so-called agriculturally progressive states, such as Gujarat, Karnataka, Maharashtra, and Tamil Nadu, is close to the national average. Further, the gap between farm and non-farm incomes has grown over the decades, from a ratio of 1:3 in the mid-1980s to 1:4.08 in

the middle of last decade, and 1:3.12 in 2011–12 (Chand 2017).

## Setting the Context

There has been much debate in the press over the last few months about the definition of farmers' income and the time frame for doubling it. If it is a doubling of the real incomes of farmers, then it is an important and challenging goal to achieve in five to seven years. Those who argue that it is not possible to double farmers' incomes in six years cite low and unrealisable minimum support prices (MSPs), non-remunerative prices in the market, the low share of farmers in the consumer rupee, poor penetration of crop insurance, high and increasing input costs, and the absence of market infrastructure. They also cite modest growth in the past compared to the 12% annual figure needed for doubling incomes in nominal terms, which works out to an annual growth rate of 20%–30% to double them in real terms. It is estimated that doubling incomes in nominal terms requires six years and, in real terms, 13 years, and it is going to need longer time frames in both respects for marginal and small farmers. Further, it would need varied time frames across different states depending on the state-level growth rates of farming household incomes—which vary from 6.7% in West Bengal to 17.5% in Haryana in nominal terms, with the average for India being 11.8%—and on the absolute levels of farmer household income (Satyasai and Mehrotra 2016). Chand (2017) estimates that farmers' incomes can be increased by 75% in seven years, and that it would take 10 years for it to double.

Annual income per cultivator increased from ₹12,365 in 1993–94 to ₹1,20,193 by 2015–16, at current prices. However, at real prices, the increase has been from ₹21,110 to ₹44,027 during this period. This shows that farmers' average real incomes doubled only over a period of 22 years. Even the total farm income of all farmers at real prices just about doubled during this period, from ₹3 lakh crore (₹3 trillion) to ₹6 lakh crore (₹6 trillion). This works out to a growth rate of 3.4% a year per cultivator and 3.13% for

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total farmer income over the period (Chand 2017).

## Two Road Maps by States

Some states have already designed road maps for doubling farmers' incomes. For example, Madhya Pradesh did it in 2016 and has also estimated the contributions of various sources of increase in incomes: increase in yields would contribute 30%, agricultural diversification 20%, reduction in input costs and better prices 15% each, with the rest coming from an expansion in area under cultivation (14%) and a reduction in post-harvest losses (6%) (Government of Madhya Pradesh 2016; Satyasai and Mehrotra 2016). Regarding increases in yields, the gap between present and attainable yields was found to be as high as 43%–131% across different crops (coarse grains, pulses, and oil seeds) in Madhya Pradesh.

The state government has set up a task force on the issue of doubling farmers' incomes and has appointed an advisory committee of 51 progressive farmers under the chairmanship of the minister of agriculture. Fifty-one districts have prepared their own road maps for this purpose and 55,000 villages are also working towards preparing such road maps, which would be presented to the village panchayats especially set up for agriculture at the time of the Pradhan Mantri Krishi Mahotsav. District irrigation plans have been prepared under the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY). Half a million temporary agricultural pumps are also being made permanent with an allocation of ₹5,000 crore. The Government of Madhya Pradesh identified 19 pillars in order to double farmers' incomes. These include: increased irrigation from public sources, additional electricity supply for agriculture, interest-free crop loans, expansion of agricultural area, encouraging mechanisation, agricultural diversification, expansion of modern seeds, soil health management, new channels of agricultural technology extension, farmer-producer company organisation, expansion of the food processing sector, encouragement to organic farming, management of natural risk in agriculture, expansion of agricultural storage capacity, better organisation of agricultural markets, animal

husbandry, fisheries, silk, bamboo and agroforestry production, and institutional structures for achieving the objective.

So far, 142 farmer-producer companies have been set up and 300 more such companies are planned by 2021. The institutional structures include an agricultural cabinet, a separate agricultural budget, a task force for the agricultural sector, a farmers' commission for agricultural development and farmer well-being, and micro irrigation and agroforestry missions. It is estimated that yield- and production-related efforts would lead to 70% of additional farmer income with the remaining 30% coming equally from cost reduction, higher prices, and reduced economic losses (Government of Madhya Pradesh 2016).

Similarly, the Government of Chhattisgarh has decided to focus on seven points to increase farmers' incomes: agricultural development of Adivasi farmers, reducing the cost of cultivation, increase in yields, improving the marketing infrastructure, storage and processing facilities, development of irrigation, agricultural diversification, and a better agricultural extension system. It estimates that the union government's soil health card scheme would lead to a saving of 10% on fertilisers and contribute to a 5% increase in yields. It also plans to use Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) to recharge 4,50,000 irrigation wells and raise the yields of rice, maize, pulses, and oilseeds. It proposes to set up at least 20 farmer-producer companies in each district and bring half the number of farmers under a crop insurance scheme. The expected reduction in the cost of production through various means is estimated to be 5%–25%. Production would increase 15%–30%, price realisation 10%–20%, cropping intensity 15%–30%, and off-farm sources 5%–30%, with extension contributing 5%–20%. Thus, incomes can increase between 55% and 155% over the next seven years.

It further details crop-specific increases in income, which vary from 5%–35% across crops due to seed replacement, 10% due to bio-fertilisers, and 5%–10% due to mechanical sowing. It is also

expected that a 15% increase in incomes will come from the use of check dams and small irrigation ponds each. The area under horticulture has been targeted to increase by more than 60%, and the number of onion storage structures to rise to 100 from 12 at present. The area under protected cultivation is expected to more than double during this period. Similar increases in income from animal husbandry are estimated, with 30% due to a rise in yields, and 10% each from reduced costs of production, price increases, better risk management, and the expansion of government schemes. The major activities for achieving higher income targets include: an increase in the seed replacement rate of maize and lentils, expansion in issuing soil health cards, the promotion of the system of rice intensification, drip and sprinkler irrigation, and enhancement of short-term crop loans. The other major steps include linking up of markets with the national agricultural market, e-NAM, expanding cold storage infrastructure and storage capacity, building green/shed net houses, organising new dairy cooperative societies, expanding bulk milk cooler and milk-chilling centre capacities, cage culture in fisheries, and agri-clinics and agricultural business centres, and doubling the production of lac (Department of Agriculture and Food Processing 2017).

## Raising Farmers' Incomes

There could be various mechanisms to achieve growth in farmers' incomes within as well as outside the farm sector. Within the farm sector, the increase in incomes can come from greater production per unit area as a result of higher yields, as there are yield gaps of the order of 25%–100% across various crops especially in dryland regions, and in some high-value crops even in irrigated areas. India's average yields in most crops are only half that of China's. The increase can also come from higher cropping intensity, lower costs of production, higher prices, or a combination thereof. But yields are not amenable to sudden change as they depend on the type of technology deployed, which cannot be altered in a very short period of time. Also, high-yielding

varieties need irrigation facilities, which cannot be expanded quickly.

The other mechanism to achieving higher volumes of production, without increases in yield, is higher cropping intensity, which would happen only if there is an increase in the area under irrigation or a greater access to water. This again is not achievable in the short-term despite the fact that there is plenty of focus on the expansion of irrigation through schemes such as the PMKSY, and the promotion of micro-irrigation. The latter is particularly stuck in the face of the widespread political practice of extending free power to farmers to extract groundwater, barring a few states like Gujarat and Andhra Pradesh, where there are dedicated efforts to popularise micro-irrigation among farmers. It is also important to remember that higher production (from better yields or increases in cropping intensity) would not by themselves lead to higher incomes in the absence of any price support mechanism or well lined-up markets for the produce, as witnessed recently in the case of pulses.

Reducing the cost of production (of which 11% comprises machinery costs) is most doable, as this requires extension education to the farmers and providing access to low-cost mechanical services to small and marginal farmers, who cannot afford to buy and own costly machines and equipment. This is happening across states with the opening up of custom hiring service centres by cooperatives, producer companies, self-help groups, and private individual operators, as well as large agri-machinery companies and agricultural start-ups, with and without state support. Similarly, despite the fact that public extension services are more or less dysfunctional due to various reasons, there are many new players like agricultural start-ups working closely with farmers to provide extension services as part of a package.

Another mechanism of increasing farmers' incomes—through higher or more stable prices—is unlikely to fructify, given the inability of the state to implement the MSP mechanism for two dozen crops with effective procurement across various states, with state agencies restricting themselves to a few states and a

few crops to meet the public foodgrain procurement quotas. Only 25% of the farmers were aware of MSP at the all-India level in 2012–13 with only 8% aware of it in Maharashtra and 11% in Gujarat, and going up only to a maximum of 50% even in Punjab. It was the highest (23%–25%) in the case of cash crops—such as sugar cane, jute and cotton—and cereals, and was only 9% in the case of pulses and 17% for oilseeds. Only about 19% farmers knew of the Food Corporation of India (FCI) and 75% did not sell to procurement agencies (Aditya et al 2017). Further, the government may not be inclined to increase the MSP or set up a price stabilisation fund as evident in the fact that the government has expressed its inability to implement the Swaminathan Committee recommendation of the MSP being pegged at 50% above the cost of production.

Diversification towards high-value crops can help raise incomes, and are also desirable for social and environmental reasons, as these crops account for a large proportion of the value of output but cover a relatively lower area. Cereal crops cover 77% of the gross cropped area (GCA), but account for 41% of the value of agricultural output. Fruits and vegetables, on the other hand, cover 7.7% of the GCA and contribute 26% of the value of output; all high-value crops cover 19% of the GCA and account for 41% of the value of output. But, there are many policy distortions that undermine diversification, although the markets encourage it. And, success in this sector depends highly on reforming agricultural markets and improving their performance from the farmers' perspective. Further, new channels of procurement—that is, contract farming, direct purchase, and private wholesale markets in these crops, which are much needed—are either missing or not adequately available due to a lack of policy direction and the political economy of such new market arrangements at the local level.

Another important measure that can help farmers protect their incomes from production risk is crop insurance, which still has not been effectively implemented despite the relaunch of crop insurance schemes such as the Pradhan Mantri Fasal

Bima Yojana. In fact, this now also covers a part of the market risk as it also provides for compensation for post-harvest losses. However, the scheme's coverage remains at only 30% of the GCA. There have also been many issues regarding claims settlements, in addition to the lack of awareness about the scheme, and the exclusion of small and marginal farmers.

The mechanisms for increasing farmers' incomes outside the farm sector include access to off-farm and non-farm employment and occupations—such as dairy farming or handicrafts—as well as moving people out of the farming sector altogether. Whereas the first measure can help provide additional and more regular incomes, the second one can increase incomes of those left behind in farming as there will be fewer people to share the same income. Having said that, moving people out of the farming sector is highly unlikely to happen as there are hardly any opportunities for unskilled or semi-skilled farm hands outside the sector.

### Growth Targets

Chand (2017) examined the prospects of doubling farmers' incomes by adding up various sources of income growth like yield, livestock income, resource-use efficiency, cropping intensity, crop diversification, better price realisation, and shifting to non-farm occupations, and found that it is mainly price realisation that can give the maximum push to income (growing at 13%). It also estimated the required growth rate in the different components of sources of income, in order to double farm income, as against those achieved in the past. The growth rates required are at least 1% higher than those achieved in most components in the past, except in resource use efficiency, cropping intensity, and shift to non-farm occupations. In fact, the required growth rate in the price of crop output is 4% higher than that achieved in the past in Karnataka even with the help of the electronic integration of markets within the state. It also provided growth targets to be achieved in various development initiatives like quality seeds, fertilisers, irrigation expansion, supply of electricity, cropping intensity, area under high-value crops, and area under high-yielding variety (HYV) seeds.

The targets for 2022–23 are more than double in the case of quality seed supply, electricity supply, and very high for fertilisers, irrigation, cropping intensity, and HVT coverage. In fact, the area under fruits and vegetables is targeted to reach 26 million hectares (ha) from less than 17 million ha in 2013–14, which is a tall order, as is the higher target for cropping intensity, from 40% to 53% in 10 years. Some of the policy reforms suggested towards doubling farmers' incomes like the liberalisation of leasing land, as proposed by NITI Aayog (2016), are likely to have certain other adverse impacts on small and marginal farmers unless there are mechanisms in place to ensure that they are not bypassed by various initiatives from the state and the corporate sector.

### Beyond Business as Usual

It is important to realise that small farmers in India are highly differentiated in terms of their market participation. In terms of marketable and marketed surplus as a proportion of foodgrains production, they range from highly commercial, and a mix of subsistence and commercial, to those who are mainly subsistence farmers. The marketable surplus varies from a high of 61% mainly in commercial regions to a low of 45% in mainly subsistence regions, and the same goes for marketed surplus. The latter is, in fact, slightly higher than marketable surplus for the subsistence plus commercial and the mainly subsistence categories of farmers; they end up selling more than they are supposed to sell, and the gap between marketed and marketable surplus is 0.6%–4% for the two categories respectively (Agarwal and Agrawal 2017).

Interestingly, it is also proposed by some scholars, rightly, that perhaps one of the ways to achieve the target of enhancing farmers' incomes would be to focus on rainfed areas, the eastern region, and small farmers instead of an undifferentiated approach (Satyasai and Mehrotra 2016). This makes sense, as 43% of the population and more than 60% of the agricultural area in India is in dry or rainfed regions.

For raising farm incomes, there is a need to reorganise agriculture in terms

of institutions at the local level, with farmers becoming part of collectives like cooperatives and producer companies. This will enable them to get involved in domestic and global value chains, which can help them lower the costs of production and marketing, and achieve scale to realise higher prices and surpluses. This requires investment in agriculture and agribusinesses by converting subsidies into investments.

Livestock and agricultural wages are significant sources of income for farming households in India, especially for marginal and small farmers. For example, in Bihar, on average, a farming household earns only 47% of its income from farming, 29% from livestock, and 13% from casual labour. It is hence important to focus on livestock sector development and public employment programmes like the MGNREGS, to create income sources other than farming.

Even the residue of major crops like paddy and cotton, which is burnt in many states and has become a policy and social issue, can be utilised to create a new source of income for landless and marginal farmers and other rural workers, as part of the agro-industrialisation process which is a logical corollary of agricultural growth and development. A more proactive and creative involvement of workers in agricultural mechanisation, and of small farmers in the agro-industrialisation process, is crucial for the overall positive results of this intervention.

It is also important to recognise that India is not the only country to set this kind of target regarding farmers' incomes. China set this objective of doubling farmers' incomes in 2008, but it plans to meet it over 12 years (2008–20), and not five to seven years despite the fact that China has better functioning institutions and infrastructure in place. China, though, has a limit to what it can achieve on the yields front, as its average yields are double that of India. The Chinese strategy of doubling the income of farmers involves expanding channels for the generation of income, expanding the non-agricultural sector to shift surplus labour out of agriculture and into medium and large cities, and building an integrated labour market. This is a part

of a larger agricultural development model, which focuses on stable grain production, building and strengthening farmer cooperatives, expanding agribusinesses, food quality and safety, agricultural science and technology, creating a new social service system for agriculture for the supply of inputs, finance, insurance and extension by non-governmental organisations, and public and large private agencies. It also includes subsidies for grain production and farm inputs, a minimum grain procurement price, reform of agricultural laws and regulations, and opening the agricultural sector to the world (Schneider 2016). It is good to be ambitious but can India run faster than China, that too in the agricultural sector, given that our federal structure and democracy has its own dynamic in terms of policy space for the central government and the states?

Finally, leaving the objectives of doubling farmers' incomes to states is good step as agriculture is a state subject. But then how do the sources of the idea and its promotion (NITI Aayog and the Ministry of Agriculture and Farmers' Welfare [MoAFW]) make sure that it is tried even if it does not eventually happen? Going by the experience of agricultural market reforms at the state level so far, despite the model Agricultural Produce Market Committee Act and many other recipes being handed out by NITI Aayog and the MoAFW, it is unlikely that various states would come on board for this mission of doubling farmers' incomes even though it is an important objective for all states politically. But they may like to do it in their own ways given the diversity in agriculture across states, and their understanding of mechanisms to achieve it. As is clear from the example of the two states given above, different states would need varied strategies as they are at different levels of agricultural development in terms of growth rates and the level of farmer incomes.

### REFERENCES

- Aditya, K S et al (2017): "Awareness of Minimum Support Price and Its Impact on Diversification Decision of Farmers in India," *Asia and the Pacific Policy Studies*, Vol 4, No 3, pp 514–26.
- Agarwal, B and A Agrawal (2017): "Do Farmers Really Like Farming? Indian Farmers in Transition,"

- Oxford Development Studies*, Vol 45, No 4, pp 460–78, doi:10.1080/13600818.2017.1283010.
- Birthal, P S et al (2015): “Farmers’ Preference for Farming: Evidence from a Nationally Representative Farm Survey in India,” *Developing Economies*, Vol 53, No 2, pp 122–34.
- Chand, R (2017): “Doubling Farmers’ Income—Rationale, Strategy, Prospects and Action Plan,” NITI Policy Paper No 1, 2017, NITI Aayog, Government of India, New Delhi.
- Department of Agriculture and Food Processing (2017): “Roadmap For Doubling of Farmers’ Income in Chhattisgarh by 2022,” Government of Chhattisgarh, Raipur.
- Government of Madhya Pradesh (2016): “Roadmap for Doubling M P Farmers’ Income in 5 Years,” Government of Madhya Pradesh, Bhopal.
- NITI Aayog (2016): “Report of the Expert Committee on Land Leasing,” 31 March, Government of India, New Delhi.
- Satyasai, K J S and N Mehrotra (2016): “Enhancing Farmers’ Income,” National Bank for Agriculture and Rural Development, New Delhi, 12 July, <http://www.agricoop.nic.in/sites/default/files/12%20July%202016%20Sat%20kjs%20NM.pdf>.
- Schneider, M (2016): “Dragon Head Enterprises and the State of Agribusiness in China,” *Journal of Agrarian Change*, Vol 17, No 1, pp 3–21, doi:10.1111/joac.12151.