Chapter 9

Further Strengthening Agri-Value Chains in India—Way Forward

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The value chain analysis undertaken in this study reveals their varying performance against the conceptual framework of CISS-F. This research has helped understand the functioning of the value chains and implications of key policy reforms on the ground. There are examples of successful agricultural value chains, which clearly indicate how policies have worked in the interests of the farmers and contributed towards making the chain more efficient. However, there are several challenges confronting these value chains that need further policy attention. Each value chain study concludes with a proposed list of desirable interventions, and way forward, very specific to the commodity. These proposed interventions are by no means exhaustive. Rather, they represent a set of critical and urgent actions which are necessary for the growth and development of that particular value chain.

This chapter provides the broad spectrum of certain macro-policy challenges pertaining to agricultural technology, markets, institutions and finance, which are relevant to this study. The objective is to look at the ecosystem which supports agricultural value chains and suggest measures to plug the gaps that prevent the rapid and inclusive growth of these value chains. Policy efforts in this direction have been underway since the 1990s, and a lot of the discussion and debate reiterated the need to expand the horizon of agricultural marketing in India. With a clear policy statement and enabling legislative framework, high value chains can be incentivized. Quite clearly, huge investments in production technology, infrastructure, storage, value addition and human resources will be necessary, if large-sized value chains are to be a reality in the agriculture sector. The majority of these investments will have to be made by private players, including farmers. Therefore, it is of utmost importance that there is bipartisan political buy-in to the new policy reform. The significance of

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the recent Farm Laws 2020 should not be considered any less than the one which was made in 1991 to announce the end of industrial licensing. These laws allow for a transparent legal pathway to further strengthen the efforts towards developing high-value agricultural value chains.

9.1 Technology

This section discusses the role of technology in a crop-neutral manner and presents some macro-steps which are relevant from the point of view of building efficient and inclusive value chains.

- If indeed India aspires to be a major player in world agriculture trade, then the current ad hoc, episodic approach towards technology development and acquisition will have to be abandoned. Instead, technology will have to be seen as a strategic investment which enables the development of global agricultural value chains. The quickest and most cost-efficient means of accessing technology and its widespread dissemination then becomes an important element of policy-making.
- The commodity-specific value chain studies present specific instances of major technology gaps and lack of adequate research in varietal diversity, disease control and other areas which stunt value chain development. Given the fact that India invests a mere 0.37% of agriculture GDP (Government of India 2019), it is unlikely that any major technological breakthrough will emerge. While experts call for investing at least 1% of the agriculture GDP in research and highlight the high economic and social returns of such investments, budgetary outlays have remained more or less stagnant. Private sector research is held back on account of policy uncertainties and a sclerotic regulatory regime, besides weak enforcement of intellectual property rights (IPR).
- The noisy nature of Indian democracy and the multiple stakeholders that exercise competing pressures on the central and state governments will impact investments in agricultural R&D. In the short run, India is unlikely to allocate significant public resources to agricultural R&D, provide quick regulatory approvals to foreign players to bring in best-in-class technologies or even facilitate domestic private sector players to invest in promising agricultural research. The practical approach should be for the government to go out and make an outright purchase of the necessary technology packages that can trigger productivity improvements. Once acquired, the technology can be shared in an affordable and inclusive manner to penetrate the target value chain rapidly.
- The history of how breeder seed of high yielding varieties of wheat and paddy was acquired by the government and disseminated is a good pointer to the success of such an approach. And we are not alone in taking this road. In 2016, ChemChina, one of China's largest agrochemical companies, announced the acquisition of Basel-based Syngenta for a whopping USD 46 billion. It was the Chinese government, acting through its PSU, which took ownership of proprietary technologies

developed by Syngenta, for meeting its food security objectives in the coming decades.

- Therefore, a mechanism must be put in place for the identification and acquisition of vital agricultural technologies from both domestic and foreign R&D players. This should cover not just seeds but planting material in general, besides agrochemicals and farm machinery. Once the government becomes the owner of these technologies, it can decide the terms on which they will be shared with both public and private sector entities for multiplication and further development. For a period of time, government may choose to offer select technologies at token or very low costs to developers and farmers alike such that these technologies can be multiplied and adopted extensively in a short time frame.
 - However, this can be at best a short-term solution which helps us to close the existing technology gap. We still need a long-term investment policy to promote the development of home-grown agricultural technology. In a developing country like India, with multiple calls on the public exchequer, it will always be a challenge to provide an optimum level of taxpayer funds for agricultural R&D. Even as the country moves towards the goal of investing 1% of agricultural GDP in a (3–5) year framework, government can incentivize private investment in agricultural research through an appropriate package of incentives. This will require going beyond the obvious tax breaks and addressing the current misgivings on regulation and IPR issues.
 - A balance will also have to be found between encouraging private sector investments in this area while recognizing the role of farmers and traditional communities in preserving seed varieties and germplasm. Sharing of benefits with those who have helped to preserve biodiversity should be an essential component of the new approach to technology. This innovation-driven approach can help foster a vibrant environment for farm-level research which besides producing location-specific technologies will also create widely dispersed employment opportunities.
 - This is not to reduce the importance of public research in agriculture. Investment in agricultural R&D must remain a priority area for the government. However, there needs to be an overall strategic framework for agriculture research, clearly demarcating core areas for public and private sector focus. Some long-term themes, like climate change adaptation, rearranging cropping patterns in view of fast developing natural resource constraints and the agricultural education framework, are best addressed by large national systems. However, the government agricultural R&D institutions have to develop easier norms for collaboration with private sector and international research players for greater effectiveness.
- Related to technology acquisition and development is the challenge of extension. The agriculture extension system in the crop husbandry segment is seriously weakened and is practically non-existent in high-value sub-sectors such

as horticulture and dairy. This weak lab-to-land link has resulted in even on-the-shelf technologies (especially in the horticulture sector) not penetrating deeply into the value chains examined. Private sector players, almost without exception, promote their own products (like seed, agrochemicals, etc.) and the related use-case technology. Thus, huge information asymmetry exists in awareness and adoption of available technology options in most of the crops we studied.

- A manpower-centric extension system, as was set up in many states during the spread of Green Revolution technology, may not be affordable or even effective in the current context. Instead, the attempt should be to create choices and easy access to digital technology for farmers by encouraging a multiplicity of players in the extension arena. The potential of information technology remains to be harnessed in a scalable and impactful manner, even though many successful models exist at the level of small pilots. Here again, what is needed is an inclusive framework which embraces multiple players to support specific value chains. The example of grapes investigated in this study clearly shows that if there is a clear identification of markets and their requirements, multiple stakeholders in the value chain create collaboration networks to achieve highly demanding quality norms. Farmers can be empowered to choose between various options through a direct income support option, rather than tied down to specific channels as per current practice.

9.2 Markets

- The absence of integrated agri-value chains is primarily the outcome of adopting a fragmented approach to markets. The centrality of the Agriculture Produce Marketing Committee (APMC)-controlled market yards or *mandis* has led to the existence of more than 7500 highly restricted primary market yards in the country. At one level, these small market areas cater to the prevalent production model which is dominated by small holdings. More than 86% of all agricultural holdings are small and marginal, i.e. less than 2 hectares. The marketable surplus from these millions of small farms is typically too small and varied in quality terms to enable aggregation into viable lot sizes. This also means that large processors, retailers, exporters, etc., have little incentive to work with farmers and source produce directly from farms. Thus, the value chain comprises of multiple tiers of traders, from the village to the national level, who aggregate the produce, sort into different quality categories and ultimately supply to the bulk buyers. However, the result is that economies of scale in production, harvesting, sorting, grading, transportation and storage cannot be leveraged, except for a handful of crops (grape is a good example of an alternative model, where exporters work closely with farmers).

- Therefore, building of agricultural value chains will require a completely different policy approach to markets. For each and every agricultural product generated in India, policy has to consider the world, not even the country, as the natural target market. As an opening move, a central legislation, on the lines of Goods and Services Tax (GST) enabling law, will be needed to create a single, unified market for all agriculture produce at least within the country. Agricultural markets need to be more competitive, and farmers should be free to market their produce to any entity on mutually agreed terms. Competition is a key to building value chains, and anything which restricts competitive practices, protects monopolies and reduces transparency should be identified and removed.
- Since the early 1990s, there have been several attempts to liberalize agricultural markets to ensure these markets are more competitive as well as inclusive. Important reforms were initiated in the beginning of 2000s, the key provisions of which included diluting the monopoly control of the Government over marketing practices, allowing farmers the freedom to sell to anyone and any place that they desire, and creating a level playing field for the private players. Given that agriculture is a state subject, the central government's role was limited to proposing policy reforms without any control over the adoption and implementation of the same by the states. Hence, all the major reforms proposed since the early 2000s that include Model Act 2003, APLM 2017 and Contract Farming 2018 have been adopted partially by few states. This resulted in market inefficiencies and poor implementation of flagship programs like e-NAM as well as other reforms related to rationalization of cost of marketing, relieving farmers the burden of paying commission fees, among others. Agricultural markets continue to be fragmented in structure and operations, pose a heavy burden of fees and service charges to the users and discourage direct marketing between farmers and buyers. This adversely impacts farmers' income as well as scope for value addition and growth of the agricultural sector.
- In the wake of the COVID-19 pandemic, the central government made an unprecedented move of clearing the legal hurdles that impede agricultural marketing. First, on 5 June 2020, the central government announced three ordinances—Farmers' Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020; Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Ordinance, 2020; and Essential Commodities (Amendment) Ordinance, 2020, that allowed direct marketing, contract farming and abolished stocking restrictions, respectively. This was indeed a historic move given that the central government bypassed the states in bringing about these important legal reforms which was critical to keep agriculture moving amidst the lockdown and realize the long-term vision of one nation, one market. Subsequently, the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Bill, 2020, and the Farmers (Empowerment and Protection) Agreement of Price Assurance and Farm Services Bill, 2020, were passed by

Lok Sabha on 17 September 2020 and by the Rajya Sabha on 20 September 2020.

- The Farm Laws 2020 provide a legal pathway for liberalization of agricultural markets, wherein wholesalers, retailers, exporters and processors have equal opportunity to participate and farmers have the choice to sell his/her produce for the highest price. This provides the opportunity for farmers to benefit from higher income in two ways. One, farmers can trade directly with the buyers without having to go through the market intermediaries and hence save on the cost of market intermediation fees, transportation and market fees. Two, this legislation will enable creation of integrated markets for agricultural commodities, which will allow farmers to leverage higher aggregate demand.
- It is well researched that price setting (in the form of minimum support prices) and government procurement, especially of cereals like wheat and paddy, have played a role in distorting markets and inhibiting value chain development. The monopolistic procurement model often adopted by government agencies also discourages competition in primary markets and keeps away private players. At the same time, MSP and government procurement are vital tools in the food security architecture of the country and are linked to key welfare objectives.
- However, we feel that the needs of food security and providing a minimum guarantee of food grains to vulnerable households need not be at the cost of competitive markets and integrated value chain development. Measures such as revised (and lower) norms for buffer stocking, engagement of private players for procurement, commitment to purchase a minimum volume directly from private trade, as well as a combination of deficit price reimbursement and acreage-based direct income support can be used to meet the desired objectives. Some of these ideas have been tried out at the local level in the past few years with mixed results. It requires the leadership and support of the central government to enlist the cooperation of state governments to choose from a menu of options most suited to their specific needs.
- Portal-based trading in agricultural commodities is another completely under-developed marketing channel, which holds the potential of promoting integrated, pan-India agricultural supply chains. Much hope was invested when the Government of India launched e-NAM, the electronic trading portal which offered screen-based spot trading in agricultural goods. However, having completed five years in July 2021 since its launch, progress of e-NAM has been very sluggish. A combination of poor design, opposition by APMC trader lobbies, lack of awareness among farmers and weak implementation has rendered the initiative infructuous. Given the challenge of uneven spread of buyers and demand, e-NAM linked to warehouse-based trading (including e-NWRS) and engagement of FPOs have the potential to transform agriculture marketing. The role of futures market in higher price discovery and improved price risk management needs to be revisited for potato and piloted for onion and other commodities, which potentially impact a large farmer base. With infrastructure already in place, greater transparency and fair regulation can further strengthen futures market. To get this together, a strong political and

administrative will is needed to push back against entrenched lobbies in the larger interests of farmers.

9.3 Institutions

- *Better co-ordination and consultation between various ministries, central and state levels*
 - Sustainable agricultural value chains need a clearly defined regulatory framework to succeed. While there are dozens of promotional and regulatory agencies, both at the centre and in some states, there is little attempt to coordinate their respective roles for common objectives. While Ministry of Agriculture and Farmers' Welfare (MoA&FW) exhorts states to increase acreage under various fruits and vegetable crops, Department of Commerce in the same government imposes ad hoc and sudden bans on export as is common in the case of onion. This is done with a perfunctory consultation with the promoting ministry and without an attempt to ascertain the views of major producing states. Another body of the Ministry of Commerce, the Agriculture Produce Export Development Agency (APEDA), meanwhile pushes for increasing exports of horticulture produce, largely in isolation of any co-ordination with the MoA&FW or the state governments. On the sidelines, the Ministry of Food Processing Industries launches its own schemes, often overlapping with those of other ministries, and everyone seems to be engaged in small turf wars. These are but a few examples among what is commonly observed. Sub-optimal performance of many of these regulatory and promotional bodies, both at the centre and state levels, is partly responsible for the absence of serious private sector investor interest in value chain development.
 - What clearly emerges is the need for coordinated planning and implementation, which is by no means easy, given the primacy of states in implementing agriculture policy. Therefore, it is important to reiterate the need for a standing mechanism to discuss and adopt policies with clear goals in the agricultural sector. The lead for setting up such a mechanism has to come from the central government on the lines of the body consisting of State Finance Ministers which ultimately helped to usher in the Goods and Services Tax (GST). Even after the necessary legislation, it has been seen that the GST Council continues to play a role in ironing out implementation issues and addressing new challenges. Something on similar lines must be adopted for agriculture as a prerequisite for expecting meaningful policy reform which can incentivize private investment in agriculture value chains.

- *Reforming land lease markets*

- The primary factor of production, i.e. availability of land, remains a bottleneck to promote integrated value chains. With millions of fragmented holdings and individual title holders, creating economies of scale in the production, aggregation, storage and value addition of high-value agricultural commodities are impossible. Most importantly, while markets demand consistent quality and volumes, the current production system simply cannot deliver. Large land parcels cannot be created by leasing-in of land, as most states do not legally permit such tenancies. Unless a solution is found to incentivize large land parcels, either through direct purchase by amending the land ceiling laws or through a leasing model which is sanctioned by statute, production of consistent quality agricultural produce is not feasible. This is one of the most critical interventions which should be taken up urgently to kick-start the consolidation of land.

- *Promoting aggregation at farm level*

- The principle of aggregation equally needs to be applied in the case of producers. With over 140 million farm households, India cannot viably reach out to individual farmers for technology upgradation, services and market linkage. The answer is producer collectives in all forms: co-operatives, producer companies, associations, etc. Here again, policy should provide positive incentives for individual producers to become members of collectives, linking such membership to cheaper and easier credit, access to common infrastructure and joint marketing.
- With the announcement in the Union Budget 2019 (MoF, 2019) to promote 10,000 additional FPOs, a good beginning has been made. However, merely registering these bodies will not suffice. An entire ecosystem of support, including linking these institutions to equity and working capital, easing licensing and compliance, creating back-end infrastructure for procurement and storage as well as making it attractive for bulk buyers to purchase directly from these bodies, has to be created. This will require coordinated action between central and state-level agencies so that millions of producers can become meaningfully linked to large value chains. The Farm Laws 2020 recognize the role of FPOs in mobilizing and strengthening the bargaining power of the farmers in trading with private buyers or entering into contract farming agreements.

- *Food Safety and Quality Standards*

- The lack of commonly applied standards or quality control, and weak to non-existent enforcement of the few that exist, is another lacuna which has inhibited market players from investing in efforts to promote them. A mistake frequently made by policy-makers (witnessed recently again in the agricultural export policy) is to advocate separate standards (usually stricter) for export markets

while being casual (which means lax) towards domestic consumers. Thus, grapes destined for Europe must conform to high norms of food safety (typically, low chemical residues from spraying), while domestic consumers enjoy no such attention and protection. The argument often heard in policy circles is that mandating global norms for domestic produce will drive up prices. It begs the argument why health and safety of Indian nationals should be compromised when we can quite easily achieve the same standards.

- Thus, adoption of food safety standards for all agriculture produce in a phased manner and alignment to globally accepted norms is an essential component of value chain development. This will require sustained efforts to assist farmers to adopt practices to achieve the desired standards, developing capacity for testing, regulation and enforcement, as well as consumer education to help society accept higher costs for agricultural produce. However, a clear articulation of social and economic cost–benefit analysis will smoothen the transition and lay the foundation for integrating Indian farmers into global supply chains. The transformative impact of such a move on the agricultural economy in particular and the national economy in general is too obvious to be repeated here.
- *Creating a Multi-Agency Centre (MAC) for building value chains*
 - The final piece in this mosaic would be a dedicated agency at the centre, with counterparts in each state, which is tasked with coordinating all actions related to building value chains. While a large cast of actors will need to play their roles to build global agriculture value chains, the big picture must be kept in view by a central champion. No single agency in the present landscape has the mandate or capacity to play this role. Perhaps, it is also not practical to propose such multidimensional role under one umbrella. What is required is to create a Multi-Agency Centre (MAC), drawing upon the resources of several ministries and bodies, to undertake this task. So, while the MAC may have a small permanent secretariat, it should have senior representation from key ministries, agencies, financial institutions, states and, most importantly, the private sector. One model to build upon is the National Capital Region Planning Board (NCRPB), which has achieved some modicum of success in coordinating with multiple central and state-level authorities to achieve certain desirable infrastructure outcomes in the NCR.

9.4 Finance

Lack of access to institutional finance has emerged as a major cause for the fragmented and often stunted value chains for all the commodities studied in this book. This constraint is felt most acutely by individual farmers, nearly 80% of whom rely on informal sources of credit for investment and working capital needs. With traditional sources of informal credit (moneylenders, *mandi* traders, big landlords, middlemen,

etc.) charging interest rates in the range of (36–120)%, it is hardly surprising that investments in technology, basic farm machinery, storage infrastructure and other stages of the value chain are abysmally low.

The situation is only marginally better for co-operatives and farmer producer organizations (FPOs). With no dedicated development finance institution supporting agricultural value chains, most collectives (especially in dairy and poultry) rely on commercial bank finance for their requirements. Serious gaps in the outreach capacity of banks limit the financial outlays as observed in the value chains studied here. The only exception seems to be private dairies and poultry units, which find it relatively easier to attract bank finance and, increasingly, private equity. This is possibly due to the physical assets that these units acquire and are able to offer as collateral to the lenders. However, no significantly scaled-up and replicable financing model has been discovered so far in products in the crop husbandry and horticulture sectors.

Given this scenario, there is an urgent need to address the financing gap that constrains the development of agricultural value chains. The following recommendations provide a direction towards addressing the financing gaps.

- The agriculture sector requires an investment policy which is targeted towards building global value chains. This would require going beyond the current approach of producing and consuming locally or regionally produced commodities. Typically, aggregation of agricultural commodities takes place at either the local *mandi* or state level, as in case of milk. Fruits such as banana and mango are at most regional crops. It is impossible to find varieties of these crops grown, in southern states, in the northern markets, just as those popular in the northern and western parts barely make it to southern markets. To make the value chains global, it will be important to shortlist products where India has a competitive advantage and identify specific need for investments and policy action. Such a policy will need to consider the complementary competence of farmers, co-operatives and FPOs as well as public and private sector players.
- Creating the pipelines through which credit for investment and working capital will flow to players in different stages of agriculture value chains is another important step. Enabling institutional credit flows to farmers, co-operatives and FPOs who are at the first stage of the value chain is the centrepiece of this arrangement. Experience shows that leaving the task to banks and legacy financing systems will not work. Therefore, policy needs to facilitate new-generation non-banking finance companies (NBFCs) or the so-called fin-tech sector, to address this problem. With their flexible products and deeper integration of digital technologies, NBFCs can step in to fill the gap left by traditional banks.
- However, given that NBFCs are presently not allowed to raise low-cost capital (such as public deposits, unlike banks), their loans are significantly more expensive. They are also exposed to a greater risk of collapse in case of massive borrower delinquency. Hence, it is critical to mitigate their risks in two possible ways: one, through a dedicated refinance facility (managed by NABARD, SIDBI, NCDC, etc.) for loans advanced to identified priority value chains at a fixed cost, and two, through a first loss default guarantee (FLDG) offered by

the same set of institutions to cover, say the first (10–15)% of default on their agriculture value chain loan portfolio.

- Equity capital has played a key role in meeting the initial investment requirements of technology-led start-up. These ventures have been reticent about entering the agriculture sector, largely owing to policy uncertainties and poorly understood risks. However, this form of risk finance is an essential ingredient for the future sustainable growth of agriculture value chains. While clarity on the policy approach to building integrated value chains will be helpful, some initial comfort may be required to kick-start the investment cycle in this category.
 - An idea worth trying is the launch of a dedicated agriculture equity investment vehicle, targeting both start-ups and growth stage enterprises which are seeking to build agriculture value chains. This investment vehicle can be initially floated by a group of public entities (NABARD, SIDBI, NCDC, SFAC) with financial and management contribution from private equity funds. Eventually, after a few years, the portfolio of investments can even be hived off entirely to private sector players. But the initial presence of public entities will help to crowd-in private equity capital.
- Collateral financing solutions, hedging and futures contracts, typically, provide both risk mitigation and liquidity solutions in developed agricultural markets. These are conspicuous by their absence in India, barring a narrowly traded list of commodities. This is an outcome of our wider policy ambiguity on giving market instruments greater role in the agricultural economy. However, if the policy objective is to build agriculture value chains, the introduction of tried and tested hedging and other products widely used in other countries is essential. It will provide a risk management framework, as even the biggest and most integrated agriculture value chains will face periodical shocks on supply, price, quality issues, etc. Once a core set of market-oriented instruments are introduced, innovation can be encouraged for more context-specific products to be developed in an appropriate regulatory environment.

9.5 Summing Up

For agricultural value chains to be more competitive, inclusive, sustainable and scalable, an enabling policy environment supported by strong institutions is most important. The success of agricultural value chains has been a mixed bag, and there is enough scope to strengthen these value chains further to deliver higher returns to the farmers as well as contribute to the overall growth of the agricultural sector. The COVID-19 pandemic ushered in some major policy reforms which were much awaited. These reforms are aimed towards liberalization of agricultural markets, infusing greater competition and choice for the farmers, which are important factors for developing high-value chains.

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