

# Regulatory Enablers for Spices and Horticulture Value Chains in Kota Division, Rajasthan, India

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## Regulatory Enablers for Spices and Horticulture Value Chains in Kota Division, Rajasthan, India

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### REGULATORY ASSESSMENT

New Markets Lab

May 2016

#### I. EXECUTIVE SUMMARY

This Regulatory Assessment is part of the “Accelerating the Impact of Transport Infrastructure Investments in India Through a Market-led Approach” project launched by the World Bank with a pilot collaboration with the Government of Rajasthan along the orange/mandarin and coriander value chains in Kota division. The project’s Development Corridors model is designed to leverage transport infrastructure networks in order to unlock untapped market potential in the agricultural sector and improve economic opportunities for people living in deprived rural areas in Rajasthan. While some of the gaps in the enabling environment can be directly addressed through investment, others will require policy or regulatory changes and better implementation of existing laws and regulations.

The Regulatory Assessment is designed around regulatory interventions along the value chain in key areas needed to support Development Corridors:

- ***Undertake Regulatory Interventions to Enable Growth in Production*** through improving systems for land administration, access to inputs (such as seeds and fertilizer), contract farming, and other areas.
- ***Design Legal Systems to Support Farmer Aggregation Models***, including Farmer Producer Organizations (FPOs) that reduce fragmentation in the market and bring together farmers to increase market access, quality of produce, training opportunities, and knowledge of economic rights.

- **Regulate the Value Chain to Leverage Investment** in cold chain, warehousing, transport, and processing facilities that will connect farms to markets. From the farmer's perspective, regulations need to be well understood and protect farmer needs and equities; from the investor perspective, regulatory interventions should create clear pathways for investment and financing opportunities.

A summary of issues, options, and recommendations covering key areas follows. A number of legal and regulatory issues relate to different parts of the value chain (See Figure 1). While some of these are specific to a particular value chain activity, others are interconnected and impact multiple areas in the value chain.

**Figure 1: Stages of the Value Chain**



The legal and regulatory environment is a central factor in ensuring success of the Development Corridors approach in Rajasthan. This Regulatory Assessment presents a systemic approach to the legal and regulatory environment surrounding investment opportunities along the target value chains in Kota division and will work in tandem with the parallel Investment Report. Regulatory interventions discussed in this report include both changes in law and regulation and more effective implementation and institution building, and these will be discussed in context (along with examples of good regulatory practices that may be relevant in Rajasthan).

Policy, legal, and regulatory interventions along the value chain include Acts, rules, regulations, ordinances, government policies, government support programs (subsidies), notifications, and other schemes to support and assist farmers and encourage investment. Specific bodies and frameworks at the central and state levels are in place to regulate and govern different elements of the value chain. The systemic nature of the agricultural sector will have a bearing on the types of legal and regulatory interventions that can open up opportunity in the horticultural and spices value chains. For example, production in India is comprised mainly of small and marginal farmers concentrated in underdeveloped rural areas, which will impact regulatory options at all stages of the value chain.

At the production level, a number of legislative measures have been taken to facilitate access to inputs, credit, land, and other resources. At the storage/logistics and processing levels, the central

government and Government of Rajasthan have undertaken policies, schemes, and programs to encourage private investment and boost infrastructural development to provide value addition along the value chain. Regulatory measures governing processing, standards, quality, infrastructure, finance, and technology continue to evolve at the state and central levels. At the market level, major wholesale markets (mandis) are run by Agricultural Produce Marketing Committee (APMC) Boards and regulated by state level APMC laws, like the Rajasthan APMC Act and Rules. Export markets are regulated by national agencies like the Spices Board of India and the Agriculture Produce Export Development Authority.

A combination of designing new policies and regulations, amending existing ones, developing mechanisms for streamlining processes and improving implementation, and educating stakeholders could help address challenges and facilitate greater opportunity at different levels of the value chain. Some of these interventions also will require financial investment. Box 1 presents key recommendations, and Table 1 summarizes the content of this Assessment.

### ***Box 1: Summary of Key Recommendations***

#### *I. Production*

- **Farmer Aggregation Models, Including Farmer Producer Organizations (FPOs):** Develop state-level FPO regulatory framework that simplifies legal structure for FPOs and implements National Guidelines on the FPO model, which will help formalize further the FPO model and brings FPOs fully in line with international best practices
- **Contract Farming:** Develop Annotated Standard/Model Contract for contract farming arrangements that attaches to the Rajasthan APMC Act; recommend annotation to avoid misunderstanding and protect the rights of the parties

#### *II. Storage/Logistics*

- **Cold Storage:** Develop state-level cold storage regulations to enhance investment in cold storage infrastructure in Rajasthan; implement more effectively national regulations and guidelines and maintain quality of produce for exports; create awareness of government schemes to encourage cold storage development; and coordinate mandi level cold chain activities through market committees under the APMC Act and Rules
- **Transport Services:** Improve refrigerated transport licensing process and implement national technical standards for refrigerated transport
- **Warehouse Receipts System:** Strengthen implementation of warehouse receipts regulation

at the state level, including through enhanced engagement with FPOs, with a focus on better implementation of quality control processes and measures for contract breach that would address needs of both farmer and warehouse operator; strengthen online markets through appropriate state regulations under the APMC framework, incorporating enhanced commodities exchanges and the online trading platforms in Rajasthan, including the new national online portal (e-NAM)

III. *Processing*

- **Standards (food safety, grading and packaging):** Strengthen state level and local (farm and mandi level) implementation of national and international standards to enhance quality and improve export potential of spices and horticultural (orange/mandarin) products

IV. *Markets*

- **APMC Act:** Streamline implementation of licensing process under APMC Act, allowing for simple process to obtain a single, statewide license through an online licensing application; and establish regulations governing online mandis under the e-NAM platform
- **Export:** Promote model agri-export zones (AEZs) for spices and horticulture aligned with new model for AEZs; enhance existing coriander AEZ (covering the Kota division and Chittorgarh district)

*Table 1: Summary of Key Regulatory Interventions*

Issue	Current Status	Regulatory Options
<b>PRODUCTION</b>		
<p><i>Land</i></p> <ul style="list-style-type: none"> <li>▪ Fragmentation of land holdings and informality of tenancy have made it difficult for farmers to adequately protect interests under the law</li> <li>▪ Land rules also have</li> </ul>	<ul style="list-style-type: none"> <li>▪ Government of Rajasthan has implemented several laws that redistribute land rights for agricultural land, grant land titles, and establish tenancy rights for farmers. These include the Rajasthan Land Reforms Act, 1952;</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Develop Additional Legal Changes to Address Land Fragmentation Issues, Balancing the Needs of Different Stakeholders</b></li> <li>▪ <b>Amend Tenancy Laws</b> to allow leasing of land to legally</li> </ul>

<p>created challenges for investment</p> <ul style="list-style-type: none"> <li>▪ As a primary source of collateral for bank loans, input financing, and other financial needs, clear title to agricultural land is necessary for small farmers who have limited assets and resources</li> <li>▪ Inconsistencies in land records and title deeds (land titles often not well preserved) have led to challenges with respect to registering land and securing clear title; many small farmers have trouble holding the clear chain of title necessary for using land as collateral to access financing</li> <li>▪ For investors and project developers, the situation can be challenging in the light of issues with fragmented land holdings, fair compensation, and sensitivity to loss of ownership of hereditary land</li> </ul>	<p>Land Settlement Act, 1953; Land Ceiling Act, 1973; and Rajasthan State Tenancy Act, 1955</p> <ul style="list-style-type: none"> <li>▪ The Central Government had proposed amendments to the Land Acquisition Law, called the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, but, amid great opposition they moved to withdraw the 2015 amendments from Parliament in 2016 and asked state governments to push through amendments to their own laws</li> <li>▪ In April 2016, Rajasthan passed the Rajasthan Urban Land (Certification of Titles) Act, 2016, and the Rajasthan Land Pooling Schemes Bill to consolidate small land holdings and establish clear land records</li> <li>▪ Rajasthan State Tenancy Act 1955 amended in 2011 to facilitate larger lease holdings of agricultural land for longer periods by entrepreneurs who are interested in cultivating agro-based products</li> <li>▪ Existing land laws in Rajasthan provide for different procedures for adjudication of land disputes,</li> </ul>	<p>established farmers’ and women’s groups, and recognize such groups as a valid category of landowners</p> <ul style="list-style-type: none"> <li>▪ <b>Develop Annotated Model Tenancy Contracts</b> (similar to the model contract farming agreement developed at the Central Level under the Model APMC Act) which could be an effective tool to implement and enforce standardized and written tenancy agreements; recommend model contracts are annotated and clearly explain provisions and the rationale behind them in order to increase implementation and reduce risk for parties</li> <li>▪ <b>Put in Place Measures to Enforce Informal Tenancy Arrangements</b> by enacting a special law for land disputes (Bihar Land Disputes Resolution Act, 2009 presents a possible model) to deal solely with land disputes and provide for a uniform and common forum, procedures, and mechanisms in the resolution of land disputes</li> <li>▪ <b>Improve Land Records and Titling</b> through implementation support under the DILRMP program; alternatively, FPOs could act as training and support agencies that assist their member farmers in maintaining land records and</li> </ul>
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	<p>which predominantly rest with the land revenue authorities within the state government (Rajasthan Land Revenue Act)</p> <ul style="list-style-type: none"> <li>▪ Rajasthan State has made progress under the Digital India Land Records Modernization Programme (DILRMP) program, yet a significant portion of land records continue to be handwritten and the computerized records have not been integrated with banks and court records in the state</li> </ul>	<p>work with the government in incorporating member data into official records</p>
<p><b><i>Farmer Aggregation Models (FPOs)</i></b></p> <ul style="list-style-type: none"> <li>▪ Farmer aggregation models have become increasingly used to address challenges such as land fragmentation, low productivity by small and marginal farmers, lack of access to infrastructure, and lack of training</li> <li>▪ FPOs also are seen as an important link in risk mitigation strategies to ensure traceability in value chains and overcome challenges such as deforestation and climate change</li> <li>▪ Legal authority for establishing farmer</li> </ul>	<ul style="list-style-type: none"> <li>▪ Producer organizations in Rajasthan are established as companies under the Indian Companies Act (Part IX A); Rajasthan Cooperative Societies Registration Act also has legal authority, although it has not been used; different requirements under each</li> <li>▪ The Companies Act requires that an FPO contain at least 10 members</li> <li>▪ Companies Act limits who can hold shares in an FPO, which has implications for joint ventures and financing; the capital share of producer companies (PCs) can be held in equity shares only, and the</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Develop State-Level FPO Regulatory Framework</b> that helps further formalize the FPO model and bring FPOs fully in line with best practices. Regulatory changes could include:             <ul style="list-style-type: none"> <li>○ <b>Incorporating Key International Principles Aimed at Strengthening the Enabling Environment for Producer Organization Development</b>, including best practices such as clear registration of FPOs, equitable treatment, avoidance of conflicts of interest, protection of democratic member control, access to inputs</li> </ul> </li> </ul>



<p>producer organizations (FPOs) exists under the Indian Companies Act and Rajasthan Cooperative Societies Act (this authority is not used, however), but there is not a separate, specific legal authority for FPOs</p> <ul style="list-style-type: none"> <li>▪ The cooperative model promoted originally faced various challenges, including the extent of government involvement in the cooperatives’ functioning; FPOs were meant to overcome these challenges</li> <li>▪ Tenancy arrangements are often informal and difficult to enforce; this issue could be addressed through FPO Regulations that formalize these arrangements and provide the FPO with a role in implementation</li> <li>▪ Some avenues for investment in FPOs are limited, although credit and financial incentive tools driven by the government to provide financial backings to FPOs are being developed; equity investment in FPOs under the Companies Act is restricted, since the share capital in a producer company can be held by</li> </ul>	<p>transferability of these shares is restricted to members, who must be individual producers or producer institution, thereby limiting investment into PCs/FPOs or subsidiaries to equity contribution from members or other PCs</p> <ul style="list-style-type: none"> <li>▪ Under amendments to the Companies Act, private companies have to adhere to strict norms for borrowing from any person other than directors of the company, thereby increasing the compliance costs for companies such as FPOs; these conditions include creation of a reserve account, deposit insurance, and credit rating</li> </ul>	<p>and markets, and due process and dispute settlement</p> <ul style="list-style-type: none"> <li>○ <b>Implementing National Guidelines on the FPO Model</b></li> <li>○ <b>Undertaking Necessary Changes to the Current Regulatory Landscape</b>, such as modifying the requirement that FPOs have at least 10 members (Companies Act)</li> <li>○ <b>Formalize Tenancy Arrangements</b> and provide the FPO with a role in implementation of tenancy arrangements</li> <li>○ <b>Link to Warehouse Receipts System</b></li> <li>▪ <b>Improve Regulatory Mechanisms for Investment in FPOs</b>, including:             <ul style="list-style-type: none"> <li>○ <b>Fiscal Incentives</b> such as Value Added Tax (VAT) refunds, Commercial and Sales Tax (CST) rebates, and other fiscal support</li> <li>○ <b>Regulatory Amendment</b> to provide clear opportunity for investment in FPOs, including through venture capital (to the Companies Act or creation of Rajasthan FPO Regulation)</li> </ul> </li> </ul>
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<p>and transferred only between members who are primary producers or producer institutions; private companies have been brought under the purview of the deposits compliance of the Companies Act 2013, limiting their options to seek funding from sources other than their directors</p> <ul style="list-style-type: none"> <li>▪ By many accounts, greater education around the existing legal standards for FPOs is needed</li> </ul>		<ul style="list-style-type: none"> <li>○ <b>Education on the Requirements for FPOs and Similar Aggregation Models</b> (including hybrid models) could help organizations become better aware of the legal requirements for different business models</li> </ul>
<p><b>Contract Farming</b></p> <ul style="list-style-type: none"> <li>▪ Contract farming is becoming increasingly prevalent in Rajasthan, but contracts often are informal and may not adequately protect the rights of both parties (farmers and sponsors)</li> <li>▪ Informal contracts lack dispute settlement; formal contracts may be subject to prolonged court proceedings, which are outside of the competence or resources of the farmer</li> <li>▪ Side selling common and creates difficulty for sponsors; investment into production by larger entities could be enhanced by developing a</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rajasthan APMC Act and Rajasthan APMC Rules have adopted contract farming provisions (covering registration and implementation and enforcement of agreements), but guidelines or provisions that focus on the terms of the contract are absent, and Model Contract Farming Contract not yet adopted</li> <li>▪ Current dispute settlement mechanism requires all disputes be resolved through Market Committees under the Rajasthan APMC Act; may be too narrow to allow for sufficient choice by the parties</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Develop Annotated Standard/Model Contract for Contract Farming Arrangements to Address Terms of Contracts</b>, which would have to be attached to the Rajasthan APMC Act; enact APMC Rules mandating the Market Committee to implement model (recommend model contracts are annotated and clearly explain provisions and the rationale behind them in order to increase implementation and reduce risk for parties)</li> <li>▪ <b>Establish Flexible Dispute Settlement Mechanism</b> provision under the APMC Act that allows for alternative dispute settlement such as</li> </ul>

<p>formalized and transparent contract farming system</p> <ul style="list-style-type: none"> <li>▪ Farmers often not aware of standards to which produce should adhere</li> </ul>		<p>mediation and arbitration; international best practices indicate this flexibility is critical to achieving equitable, cost-effective, and speedy resolution</p>
<p><b>Seeds</b></p> <ul style="list-style-type: none"> <li>▪ Difficulty getting good quality seeds at reasonable prices</li> <li>▪ At present, the total quantity of seeds produced in India is not sufficient to meet the country’s increasing demand</li> <li>▪ Quality of seeds impacts productivity, the grade of crop produced, and a number of other aspects; for farmers, access to affordable quality seed is an ongoing challenge</li> <li>▪ Particularly in the case of coriander, where a number of grades are produced by farmers, options for wider markets may be limited by the quality of seeds on the market</li> </ul>	<ul style="list-style-type: none"> <li>▪ Comprehensive legal and regulatory framework exists for seeds, including intellectual property rights (IPR) and protections for farmers, but gaps remain and processes can be unnecessarily complicated</li> <li>▪ The proposed Seeds Bill 2004 (as amended 2010)<sup>1</sup> makes some improvements but adds a layer of regulation in some cases (e.g. mandatory variety registration for all crops as opposed to current notification scheme)</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Encourage Private Investment in Seed Production</b> through streamlined regulatory process and state policies that also focus on training support, data collection, trend analysis for demand forecasting, and application of quality assurance processes, alongside possible tax exemptions for owners of labs and facilities and other investment incentives</li> <li>▪ <b>Improve Seeds Bill</b> to streamline the regulatory processes, including through application of international best practices; could support access and availability of quality seed for farmers as well as encourage private sector participation and industry growth. Specific changes could include:             <ul style="list-style-type: none"> <li>○ Regularly update the National Register of Seeds in line with cropping</li> </ul> </li> </ul>

<sup>1</sup> The Seeds Bill was amended in 2010, and part of this amendment was to change the title of the bill to the “Seeds Bill, 2010.” This Report refers to this bill as the Seeds Bill, 2004 (as amended) or simply the Seeds Bill.

		<p>seasons and provide online access</p> <ul style="list-style-type: none"> <li>○ Reduce the number of required seasons of performance testing for variety registration from three to one</li> <li>○ Permit third party accreditation for private sector stakeholders to participate in seed certification process</li> </ul>
<p><b>Fertilizer</b></p> <ul style="list-style-type: none"> <li>▪ The burden of fertilizer subsidies on the central government budget has grown dramatically over the last decade</li> <li>▪ Challenge is to increase consumption of fertilizer while maintaining smart subsidies that do not distort the market and run afoul of international obligations (or become cost prohibitive for government)</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Economic Survey under the Union Budget 2016-17 proposed a free market for agriculture with direct transfer of cash to replace subsidies for fertilizers; this change aims to ensure that subsidies reach their rightful beneficiaries</li> <li>▪ In order to be effective, the new Direct Benefit Transfer (DBT) program will require a regulatory framework that supports the equitable delivery of subsidies to farmers, including tenant and land-holding farmers, and enables increases when market prices of fertilizer rise</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Implement DBT Program</b> through new regulation and authorization of lead government agency</li> <li>▪ <b>Establish Special Economic Zones</b> with commensurate fiscal benefits to encourage private investment in the fertilizer industry; incentives could include exemptions from various taxes, such as income tax, customs, and excise duties on import of capital goods and raw materials, and sales and service taxes</li> </ul>

<p><b><i>Water and Irrigation</i></b></p> <ul style="list-style-type: none"> <li>▪ Government of Rajasthan is making efforts to expand irrigation facilities in the state through investment, subsidies, and assistance programs; however, water management and irrigation remain a crucial challenge in the semi-arid areas of the state, which are currently facing dire water scarcity</li> <li>▪ For farmers, access to water and irrigated land is an issue, and water management can be a critical factor</li> <li>▪ With new technologies being developed to focus on efficiency and sustainability of irrigation methods, potential for investment also could be enhanced</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Draft National Water Policy 2012 was finalized and adopted by the National Water Resources Council on August 9, 2012</li> <li>▪ In addition to the National Water Policy, the Thirteenth Finance Commission (2010–2015)<sup>2</sup> made the observation that an autonomous statutory institution at the state level would be needed to address concerns related to inequity in water distribution among various water uses, low water use efficiency and water user charges, the fragmented approach to the planning and development of water resources, and meager recovery</li> <li>▪ The Government of Rajasthan introduced the Rajasthan State Water Policy, 2010 in line with the national-level policy; it also passed the Rajasthan River Basin and Water Resources Planning Act, 2015 initiating the establishment of the State Water Resources Advisory Council and the Rajasthan River Basin and Water Resource Planning Authority</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Implement State Level Water Regulation</b> through concrete, transparent steps and detailed regulations to implement the Rajasthan River Basin and Water Resources Planning Act, 2015; required to improve and streamline the scope of the legal framework pertaining to all aspects of water resource management</li> </ul>
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<sup>2</sup> The Finance Commission of India is established under Article 280 of the Indian Constitution. The Commission is constituted every five years to make recommendations to the central government on allocation of national taxes and other government financial resources.

<p><b>Insurance</b></p> <ul style="list-style-type: none"> <li>▪ Similar to many other states in India, Rajasthan’s farmers have participated in insurance schemes to a very limited degree; severe lack of capacity and knowledge at the state government level for designing and implementing crop insurance solutions</li> <li>▪ Crop insurance is a heavily subsidized sector and faces limitations in terms of private sector participation and competitiveness, yet plans are underway to encourage greater private sector participation</li> <li>▪ Micro-insurance has become more popular; Insurance Regulatory and Development Authority (Micro Insurance) Regulations, 2015 address most key gaps and challenges but some critical issues remain</li> <li>▪ A critical problem with crop insurance has been the long delay in payment of indemnities; farmers not receiving claims payment on time may default on their bank loans and become ineligible for</li> </ul>	<ul style="list-style-type: none"> <li>▪ In January of 2016, the Union Cabinet approved a new insurance scheme, the Pradhan Mantri Fasal Bima Yojana (“PMFBY Program”), which came into effect in the 2016 <i>kharif</i> season (April 2016); a unique aspect of this program is that it attempts to encourage greater participation from private sector insurance companies in its implementation</li> <li>▪ In 2015 the Indian Cabinet notified a package of reform measures to increase foreign investment in Indian insurance companies and re-insurance companies</li> <li>▪ Micro-insurance regulations updated in 2015, in response to feedback from the lending community (Insurance Regulatory and Development Authority (Micro Insurance) Regulations, 2015)</li> <li>▪ The PMFBY has designed mechanisms to strengthen the procedure for better settlement of claims; under this scheme, the government also is exploring the option of imposing penalties for delaying farmers' crop settlement claims</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Implement Speedy and Transparent Claim Settlement Mechanisms</b>, with better support for data collection, management of resources to settle claims, implementation of efficient processes for applications, and imposition of penalties for delays to bolster the claim settlement system in the agricultural insurance field</li> <li>▪ <b>Further Amend Micro-Insurance Regulations:</b> <ul style="list-style-type: none"> <li>○ <b>Reduce Cap on Agent Commissions on Non-Life Policies</b> to encourage activity in this area</li> <li>○ <b>Allow Micro-Insurance Agents to Work with More Than One General Insurance Provider</b></li> <li>○ <b>Capital Requirement Waivers for Agricultural Micro-Insurers</b> and flexibility in the rules restricting how rural agents may operate to sell agricultural insurance</li> <li>○ <b>Better Clarity on Collection and Remission Procedures</b></li> </ul> </li> <li>▪ <b>Implement State Government Outreach and Extension Programs to</b></li> </ul>
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<p>loans for the next crop cycle, which also has contributed to the relatively low use of crop insurance</p>		<p>increase farmer participation and extend capacity building in collaboration with insurance companies (include associated agents and banks for effective implementation)</p>
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**STORAGE/LOGISTICS**

<p><b>Cold Storage</b></p> <ul style="list-style-type: none"> <li>• Supply does not meet increasing demand for cold chain that has resulted from changing markets and consumer preferences</li> <li>• For many farmers, cold storage is not available close to the farm gate, and cold chain practices are not often well known</li> <li>• While some of the gaps in the cold chain require infrastructure investment, other challenges are of a regulatory nature</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Union Budget of 2016-17 announced the opening of the storage, food processing, and retail sectors to foreign investment, which is a notable change in policy; however, a targeted regulatory structure that monitors the private cold chain industry is absent in Rajasthan</li> <li>▪ To support cold chain as an important agri-logistics intervention, the Mission for Integrated Development of Horticulture (MIDH) under the Ministry of Agriculture and Farmers Welfare is providing incentives to entrepreneurs for the development of all relevant cold chain infrastructure components</li> <li>▪ Various regulations and policies governing the cold storage sector (from the Cold Storage Order 1964 to the Mission for Integrated Development of Horticulture</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Develop State-Level Cold Storage Regulations</b> to enhance investment in cold storage infrastructure in Rajasthan, implement national regulations and guidelines (implemented under different agencies including the Horticulture Board of India, Food Safety and Standards Authority of India, Agriculture and Processed Food Products Export Development Authority (APEDA) and Spices Board of India), and more effectively maintain quality of produce for exports. Framework could:             <ul style="list-style-type: none"> <li>○ <b>Monitor the Establishment, Investment, Incentives, and Management</b> of cold storage facilities</li> <li>○ <b>Address Important Standards</b> such as better hygiene, removal of humidity, and pest control</li> </ul> </li> </ul>
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	<p>(MIDH) 2014-15) have evolved over the years to meet the needs of the market and respond to technological advancements, but gaps exist</p> <ul style="list-style-type: none"> <li>▪ Rajasthan, unlike other states such as Uttar Pradesh, does not have specific cold chain regulations</li> </ul>	<ul style="list-style-type: none"> <li>○ <b>Create awareness of Government Schemes</b> to encourage cold chain development</li> <li>○ <b>Coordinate Mandi Level Cold Chain Activities</b> through Market Committees under the APMC Act and Rules; storage capacities in market yards and sub-yards could be established according to set standards, with procedures in place for effective implementation</li> <li>○ <b>Include Cold Chain Transport Services in APMC Act</b></li> <li>▪ <b>Educate Value Chain Stakeholders on Legal Requirements for Storage, Transport, Grading, Sorting, and Standards</b></li> </ul>
<p><i>Transport Services</i></p> <ul style="list-style-type: none"> <li>▪ Increased interstate movement of horticulture produce from Rajasthan requires more specialized transport services, yet many farmers lack access to appropriate transport services (particularly with temperature control)</li> <li>▪ APMC Market Committees monitor transportation</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Government of Rajasthan introduced a Scheme of Reefer Vehicles under the National Food Processing Mission (2013-17) with the objective of providing financial assistance to standalone reefer vehicles and mobile pre-cooling vans for carrying horticultural and non-horticultural produce</li> <li>▪ The Department of</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Improve Refrigerated Transport Licensing Process</b> to extend validity periods, improve renewal process, and support interstate movement of vehicles</li> <li>▪ <b>Implement National Technical Standards for Refrigerated Transport</b>, perhaps under the Rajasthan APMC Act under which specific regulations regarding</li> </ul>



<p>infrastructure, yet there is a gap in regulation of services, including technologically advanced transport solutions that are necessary for horticultural products</p> <ul style="list-style-type: none"> <li>▪ Growing logistics demand in Rajasthan and increasing need for conformity with quality standards require policy and regulatory mechanisms to integrate transport services into mandis, both of which will provide better conditions to farmers and traders</li> <li>▪ Technical standards for refrigerated transport of perishable food commodities exist at the national level, but the necessary implementation mechanisms or monitoring tools are not in place in Rajasthan</li> </ul>	<p>Agriculture and Cooperation (DAC), Government of India constituted a Technical Standards Committee in 2007, leading to the introduction of ‘Technical Standards and Protocol for the Special Equipment for Refrigerated Transport of Perishable Food Commodities Including Horticulture Produce’ in 2011</p>	<p>refrigerated transportation could be issued; could strengthen the horticultural value chain, particularly for oranges/mandarins in the state</p> <ul style="list-style-type: none"> <li>▪ <b>Educate Value Chain Stakeholders on Legal Requirements for Storage, Transport, Grading, Sorting, and Standards</b></li> </ul>
<p><b><i>Warehouse Receipts System</i></b></p> <ul style="list-style-type: none"> <li>▪ Warehouse Receipts System (WRS) has been developed to address issues with farmer access to storage and collateral as well as to prevent distress sales by farmers at peak season (prices lowest)</li> <li>▪ Despite regulatory system, risks with warehousing</li> </ul>	<ul style="list-style-type: none"> <li>▪ System still in nascent stages across Indian States; different models for WRSs exist, including a regulated system such as created under the Warehousing (Development and Regulation) Act, 2007</li> <li>▪ The Warehousing (Development and Regulation) Act, 2007 is the</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Strengthen Implementation of Warehouse Receipts Regulation at the State Level, Including Through Enhanced Engagement with FPOs, with a Focus on Better Implementation of Quality Control Processes and Measures for Contract Breach that Would Address</b></li> </ul>

<p>remain and challenges persist with recognizing warehouse receipts as a financial instrument</p> <ul style="list-style-type: none"> <li>▪ WRS as it exists may not fully represent the needs of farmer, mainly due to aggregation challenges; farmers also face challenges with regard to knowledge of the WRS and access to the warehouse receipt space</li> <li>▪ Procedural inefficiencies with WRS (for example, in case of default, the WDRA does not have the power to insulate the lender of safe return of the borrowed capital)</li> <li>▪ Logistics companies may independently engage with private banks and collateral managers to guarantee value of stored produce, recognize warehouse receipts, and develop lending arrangements; however, smaller, unorganized warehouses do not have the capacity to engage directly with banks or private collateral managers and may be left out</li> </ul>	<p>legal framework that provides for the development and regulation of warehouses, negotiability of warehouse receipts, establishment of a Warehousing Development and Regulatory Authority (WDRA), and related matters</p> <ul style="list-style-type: none"> <li>▪ WDRA’s mandate covers only negotiable warehouse receipts and not the regulation of the entire warehousing space, which remains a domain of central warehousing regulations and state bodies set up under them; in default, WDRA may not be able to insulate lender against risk of return of borrowed capital</li> <li>▪ State regulatory structure pertaining to warehouse receipt system not formalized in Rajasthan</li> </ul>	<p><b>Needs of Both Farmer and Warehouse Operator;</b> while a framework is in place, clarity on regulations, additional focus in some areas, better implementation, and infrastructure capacity are required to ensure:</p> <ul style="list-style-type: none"> <li>○ Efficient, transparent, and speedy process</li> <li>○ Enforcement of commodity grading, quality, and weight standards</li> <li>○ Robust contract enforcement and dispute settlement mechanisms in case of default</li> </ul> <ul style="list-style-type: none"> <li>▪ <b>Focus on Effective Participation by Smallholder Farmers through FPO model</b></li> <li>▪ <b>Strengthen Links Between WRS, Commodities Exchanges, and Online Markets</b> through regulations, better implementation, and better integration; Focus on futures trading systems and a national grading system for independent determination and verification of the quantity and quality of stored commodities;<sup>3</sup> match with appropriate corresponding</li> </ul>
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<sup>3</sup> Report: Committee for Strengthening Negotiable Warehouse Receipts by the Warehousing Development and Regulatory Authority in the Country, Department of Food and Public Distribution, Government of India, February 18, 2015, available at <http://wdra.nic.in/FinalBook.pdf>

<ul style="list-style-type: none"> <li>▪ The WRS is underused, and many farmers are not aware of the system and continue to resort to informal rural credit services</li> </ul>		<p>state measures incorporating the commodities markets and the online trading platforms in Rajasthan</p> <ul style="list-style-type: none"> <li>▪ <b>Educate Stakeholders to Increase Farmers’ Awareness of WRS and Online Commodity Training</b> and help increase use of these systems; in Rajasthan, agencies such as the state warehousing corporations, APMC Board, and Department of Agriculture could organize awareness programs from their own funds around registered warehouses to make farmers aware of the benefits of scientific storage and negotiable warehouse receipts</li> </ul>
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**PROCESSING**

<p><b><i>Product and Food Safety Standards</i></b></p> <ul style="list-style-type: none"> <li>▪ Standards becoming increasingly important as new markets develop and consumer preferences change</li> <li>▪ Standards exist but are often not well understood or consistently implemented</li> <li>▪ There is scope for improvement of standards</li> </ul>	<ul style="list-style-type: none"> <li>▪ The Food Safety and Standards Act, 2006 (amended in 2014) is the primary law for the regulation of food products and the formulation and enforcement of food safety standards in the country</li> <li>▪ The Food Safety and Standards Regulations, as they relate to the Food</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Strengthen State Level Implementation of Standards</b>, including increased collaboration between state government agencies (including APMC Board), non-governmental organizations, and other institutions, including government universities and farmer organizations to possibly include the following key activities:</li> </ul>
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<p>and education, particularly at the farm-gate level</p>	<p>Safety and Standards (Packaging and Labeling) Regulations 2011, provide for detailed provisions for packing and labeling for processed fruit and vegetable products and spices, but they do not cover raw fruits and vegetables</p> <ul style="list-style-type: none"> <li>▪ Some products not covered by the FSS Regulations, 2011 no longer require product approval from FSSAI</li> <li>▪ Additional laws cover food additives, contaminants, coloring, preservatives, packaging and labeling, including the Standards of Weights and Measures Act, 1976 and the Standards of Weights and Measures (Packaged Commodities Rules), 1977</li> <li>▪ Section 9 of the APMC Act specifies that it is the duty of the Marketing Committee to provide and maintain standards in terms of quality of produce, grading and packing, among other things; Section 22J provides for the use of market development funds for improvement and regulation of markets</li> </ul>	<ul style="list-style-type: none"> <li>○ Testing of key food products/ingredients and surveys on various aspects of food safety</li> <li>○ Regular monitoring of mandis and other market places to ensure maintenance of basic conditions as stipulated under the food safety regulations</li> <li>○ Training, capacity building, and awareness programs for farmers, food businesses, and consumers</li> </ul> <ul style="list-style-type: none"> <li>▪ <b>Educate Value Chain Stakeholders on Legal Requirements for Storage, Transport, Grading, Sorting, and Standards</b></li> </ul>
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	<p>in general and also specific infrastructural development to maintain standards</p>	
<p><b>Grading and Sorting</b></p> <ul style="list-style-type: none"> <li>▪ Grading and sorting are becoming increasingly important to achieve larger market share</li> <li>▪ For farmers, the main issue is the availability of facilities closer to the farm-gate level; for investors, that may not be viable</li> <li>▪ For the buyer, the issue is availability of graded produce that can be used for direct packaging or processing.</li> <li>▪ Most horticultural production from Rajasthan, and particularly Kota, is sold in local or regional markets where grading is not mandated; a statewide grading system could be enhanced</li> <li>▪ In Rajasthan, sorting and grading are available at several pack houses, but infrastructure at the farm level is inadequate</li> </ul>	<ul style="list-style-type: none"> <li>▪ At the national level, the Directorate of Marketing and Inspection issues rules on grading and marketing of various agricultural commodities, including fruits, vegetables and spices; regionally, the Agricultural Produce Marketing Board and the Market Committee have shared responsibility in implementing standards and developing efficient grading and packaging systems for agricultural produce</li> <li>▪ Under the National Fruits and Vegetables Grading and Marking Rules (2004 and amended in 2007, 2010 and 2012),<sup>4</sup> certain minimum standards are established for all produce; specific voluntary standards also are prescribed for internal trade and at the producer level, but mandatory standards are set for export in order to meet the requirements and standards prescribed by importing countries</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Implement Grading Standards at State Level</b> to enhance quality and improve export potential; this would require differentiating between grading facilities at the producer level, in mandis, privately-run, and at commodities exchange platforms. This also would entail designing standards for each level based on existing ones at the commodities and export markets levels             <ul style="list-style-type: none"> <li>○ State level implementation of standards stipulated by commodities exchange markets (and awareness programs to encourage farmers to participate in commodities markets) would greatly enhance the coriander value chain</li> </ul> </li> <li>▪ <b>Educate Value Chain Stakeholders on Legal Requirements for Storage, Transport, Grading, Sorting, and Standards</b></li> </ul>

<sup>4</sup> Fruits and Vegetables Grading and Marking Rules 2004, Department of Agriculture and Cooperation- Ministry of Agriculture, Government of India, available at <http://agmarknet.nic.in/fveggmrules04.htm#rules>

<p><b>Packaging</b></p> <ul style="list-style-type: none"> <li>▪ In Rajasthan, locally fabricated, low cost packaging is used to pack horticultural products; although these packaging materials serve the purpose of carrying fresh produce short distances, they cannot be used for long-distance transportation</li> <li>▪ Poor packing material can be an impediment for exports due to technical and food safety standards</li> <li>▪ Packaging standards exist in the Indian market, but implementation of standards has been a significant issue</li> </ul>	<ul style="list-style-type: none"> <li>▪ Under national legislation, it is within the powers and duties of the Market Committees to regulate packaging standards and infrastructure; Market Committees can invest capital in modern packaging, including newer technologies such as ‘shrink-wrapping’ that would provide an advantage to the produce being marketed</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Implement Standards and Packaging Requirements at the Mandi Level</b> based on scientific and market-tested methods; the Market Committees could be mandated and better equipped to ensure that standard packing materials and methods are maintained at all market yards, and guidelines or manuals for packing of fruits, vegetables and spices could be issued             <ul style="list-style-type: none"> <li>○ Product and location specific guidelines could be designed and implemented at the mandis</li> </ul> </li> <li>▪ <b>Educate Value Chain Stakeholders on Legal Requirements for Storage, Transport, Grading, Sorting, and Standards</b></li> </ul>
<p><b>MARKET</b></p>		
<p><b>APMC Act</b></p> <ul style="list-style-type: none"> <li>▪ Rajasthan’s APMC Rules were recently updated and expanded to include new market functions, yet implementation remains a challenge</li> <li>▪ Licensing procedures under the APMC Act</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rajasthan Agricultural Produce Markets Act, 1961, (last amended in 2015)</li> <li>▪ Rajasthan Agricultural Produce Markets Rule, 1963             <ul style="list-style-type: none"> <li>○ The Rajasthan APMC Act, Section 14A</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Streamline Licensing Process Under APMC Act</b>, which has been initiated by the Government of Rajasthan. Changes could include:             <ul style="list-style-type: none"> <li>○ Allow for simple process for obtaining a single statewide license for</li> </ul> </li> </ul>

<p>reportedly are complex, with difficulty obtaining one license to operate in the State’s different mandis. This challenge also acts as an impediment to private and consumer-farmer markets that are allowed to operate under the APMC framework</p>	<p>provides for licenses to traders and processors operating in more than one market area</p> <ul style="list-style-type: none"> <li>○ Currently, each market yard is operated by a Market Committee, which issues licenses</li> <li>○ Other states (for example, Maharashtra and Karnataka) have simplified the licensing process and allow for online license applications and cess payments</li> <li>▪ The central government recently introduced the concept of a National Agricultural Market (NAM); implementation envisioned by the Department of Agriculture and Cooperation through Small Farmers Agribusiness Consortium (SFAC) by creation of a common electronic platform deployable in selected regulated markets across the country</li> </ul>	<p>traders operating in multiple markets</p> <ul style="list-style-type: none"> <li>○ Online licensing application (and collection of cess payments), with possible improvements to process as have been undertaken in other states (Maharashtra and Karnataka are examples)</li> <li>○ Link to the NAM platform</li> <li>○ Possible amendments to the Rajasthan APMC Rules (Part VI A of the Rajasthan APMC Rules currently allow for more than one license, but they must be approved by the respective Market Committees and details of each market stated within the license)</li> <li>○ <b>Establish Regulations Governing Online Mandis</b> – Rajasthan is one of the first states to be involved in the national online market (e-NAM) program, and implementation could be ensured through changes to the APMC Rules and backed by adequate resources and infrastructure; one such amendment could be rules that govern the manner in which electronic auction of agricultural produce is</li> </ul>
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		to be conducted and bids made and accepted in the markets
<p><b>Export</b></p> <ul style="list-style-type: none"> <li>▪ Exporters of horticultural products face challenges in meeting multi-layered specifications (sanitary and phytosanitary (SPS) and technical standards), which requires more sophisticated monitoring and testing; implementation mechanisms and infrastructure are required</li> <li>▪ Agri-Export Zones (AEZs) have been established in Rajasthan (for coriander); new model Indian Government policy could lead to enhancement and expansion of policy</li> </ul>	<ul style="list-style-type: none"> <li>▪ In 2004, Government of Rajasthan introduced the Agri-Export Zone scheme under the national Agri-Export Zone of India program and established two AEZs for coriander and cumin; however, Government of India evaluated existing AEZs and suspended further AEZ development plans with a new model to address lack of government ownership, awareness, coordination, and project orientation</li> <li>▪ Union Government Foreign Trade Policy (2015-20) encourages states to adopt policy and frame their own export policies focused on the main export products in their states</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Promote Model Agri-Export Zones in the Horticultural and Spices Sectors</b> that take into account the shortcomings and challenges of previous models and implements the Union Government Foreign Trade Policy; could include:             <ul style="list-style-type: none"> <li>○ Enhance coriander AEZ (covering Kota division and Chittorgarh district)</li> <li>○ Integrate horticulture produce (specifically oranges/mandarins)</li> <li>○ Focus on marketing aspects such as grading, standardization, and food processing</li> <li>○ Permit and encourage operation of FPOs within the AEZs</li> </ul> </li> <li>▪ <b>Design State Export Policy</b> that takes into consideration international standards and demand alongside market potential and gaps to help promote horticulture (oranges/mandarins and coriander)</li> </ul>



## II. REGULATORY STRUCTURES FOR HORTICULTURE AND SPICES

To a large extent, the horticultural and spices value chains are regulated under the same rules, policies, and institutions, although some aspects of each (including export) are governed separately. The overarching regulatory structures for the horticultural and spices value chains, at both the national and state levels, are summarized below, followed by regulatory requirements impacting different stages in the value chain, which are included in the next chapter.

### A. Regulation of the Agricultural Sector

#### 1. Constitutional Division of Power for Agriculture

The Indian Constitution divides the powers of the state and central governments into three lists: Union, State, and Concurrent (both central government and state). Although agriculture is predominantly a state subject, due to its socio-economic importance, different aspects of the agricultural sector are governed at the national and state levels. For instance, taxes and duties on agricultural land and income are listed under the Union List, giving the central government the sole power to frame laws and regulations that are to be implemented by the states. The State List gives the State Governments the power and scope to frame laws covering agricultural land, credit, water, and research, among others. Generally, while the national government frames broader policies and gives guidance to state governments on legislation, state governments have the authority to design their laws and regulations in a way that caters to their individual socio-economic structures.

#### 2. National Level Regulation of the Agricultural Sector

At the Central Government level, agriculture is regulated through national-level ministerial acts and state-level bodies. The **Ministry of Agriculture and Farmers Welfare** (formerly Ministry of Agriculture), a branch of the Government of India, is the apex body for formulation and administration of the rules, regulations, and laws relating to agriculture in India. The three broad areas of scope for the Ministry are agriculture, food processing and co-operation, which fall under three key departments:

- i) Department of Agriculture, Cooperation and Farmers Welfare (DAC)
- ii) Department of Agricultural Research and Education
- iii) Department of Animal Husbandry, Dairying and Fisheries

DAC is the main agency for the agricultural sector, and it coordinates with state level agencies regarding implementation of Central Sector Schemes in the various fields including agricultural marketing, credit, drought management, credit, extension, information technology, trade, and plant protection, among others.<sup>5</sup> The DAC also establishes specialized agencies for different crops and aspects of the value chain.

Additional authorities relevant to the horticultural and spices sectors include:

1. The **Food Safety and Standards Authority of India (FSSAI)** was established under the Food Safety and Standards Act, 2006 to regulate national and international food safety standards, including those pertaining to both horticulture and spices. The 2006 Act consolidates various acts and orders that have previously handled food-related issues within different Ministries and Departments. FSSAI was established for maintaining a science-based approach to food safety and standards issues and regulating the manufacture, storage, distribution, sale, and import of foodstuffs to ensure availability of safe food for consumption and export.
2. The **National Centre for Cold Chain Development (NCCD)**<sup>6</sup> was established to promote and develop integrated cold chain in India for perishable agricultural and horticultural produce, including perishable produce from allied sectors. It is an autonomous Centre of Excellence (COE) established as a registered society to work in close collaboration with industry and other stakeholders to promote and develop integrated cold chain in India to reduce waste and improve gains to farmers, and consumers.<sup>7</sup> The main objectives of the NCCD are to recommend standards and protocols for cold chain infrastructure, suggest guidelines for human resource development, and recommend appropriate policy frameworks for development of cold chain in the country.

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<sup>5</sup>Department of Agriculture, Cooperation & Farmers Welfare Ministry of Agriculture and Farmers Welfare available at <http://agricoop.nic.in/Divisions.aspx> [last accessed May 2, 2016]

Areas covered under DAC's mandate include: Agricultural marketing, Budget, Credit, Drought management, Extension, general Coordination, Information Technology, International Cooperation, National Resource management, Oilseeds Division, Plant Protection, Rain-fed Farming System, Seeds, Agriculture Census, Cooperation, Crops & NFSM, Economic Administration, General Administration, Horticulture, Integrated Nutrient Management, Mechanization and technology, Official language, Plan Coordination, Policy, Rashtriya Krishi Vikas Yojana, and Trade.

<sup>6</sup> National Centre for Cold-chain Development homepage, Department of Agriculture, Cooperation and Farmers Welfare, Government of India, available at <http://www.nccd.gov.in/AboutUs.html> [last accessed May 2, 2016]

<sup>7</sup> National Centre for Cold-chain Development homepage, Department of Agriculture, Cooperation and Farmers Welfare, Government of India, available at <http://www.nccd.gov.in/AboutUs.html> [last accessed May 4, 2016]

## Rajasthan State Level Regulation of the Agricultural Sector

The Government of Rajasthan governs different areas of its agricultural sector through the following key departments:

- i. Department of Agriculture
- ii. Directorate of Horticulture
- iii. Directorate of Agricultural Marketing
- iv. Agricultural Marketing Board
- v. Rajasthan State Seeds and Organic Production Certification Agency
- vi. Rajasthan State Warehousing Corporation
- vii. State Institute of Agriculture Management

These state level actors adopt and implement national laws and policies and design programs to address the issues facing agriculture in Rajasthan. Through these specific departments, individually and in coordination with each other, the state government frames and implement schemes, policies, rules and regulations relating to different stages of the horticultural and spices value chains. One such policy initiative is the Rajasthan Agro-Processing and Agri-Marketing Promotion Policy (2015), designed to boost Rajasthan's agriculture and agribusiness sectors. The objectives of this policy are to create supply chain infrastructure, encourage value addition, create rural employment, implement new technologies, assist small-scale agro-processing, and accelerate research and extension. The policy covers areas ranging from land and pre-harvest processing to marketing, export and e-commerce, with the various government departments tasked with implementing the policy.

### 3. Regulation of Horticulture and Spices

#### a) Horticulture

Horticulture contributes 30 per cent of India's agricultural GDP and is one of the most significant value chains in the country and State of Rajasthan (See Box 2). At the national level, a single development and regulatory body, an independent division under the Department of Agriculture and Cooperation (DAC), governs both horticulture and spices. The **Horticulture Commissioner** heads this division and is responsible for shaping national horticulture policy and programs. Additionally, the **National Horticulture Board** was also set up as an autonomous

body with the objective of increasing development of the horticultural industry. Registered as a Society under Indian law, the National Horticulture Board assists with coordinating production and processing. At the state level, the Directorate of Horticulture, Government of Rajasthan is the nodal agency that governs state policy, programs and schemes.

***Box 2: Economic Profile of the Horticulture (Orange/Mandarin) Value Chain***

- India is the second largest producer of vegetables in the world after China and the third largest producer of fruits after Brazil and the United States. It contributes 30 percent of India's agricultural GDP<sup>8</sup>
- Rajasthan produces a diverse assortment of fruits and vegetables, currently accounting for about 1.80 million metric tons (MT) of horticultural produce from an area of 9 million hectares (currently about one percent of India's total horticulture production), and the sector exhibits potential for growth
- The horticultural sector is a priority of both the Central and State governments, with various policies in place to promote the sector (including the National Mission for Integrated Development in Horticulture (2014-15) and Centers of Excellence (COEs) in Jaipur, Kota, and Jaisalmer under the Israel-India Cooperation in Agriculture program)
- Citrus is among the major horticultural crops grown in Rajasthan, with 253.4 thousand MT of citrus production with an area of 14.4 thousand hectares and productivity of 17.6 MT/ha; Rajasthan ranks sixth out of Indian states in terms of area under cultivation and third in terms of production (2008-09)
- Major orange/mandarin producing belts in Rajasthan are Jhalawar, Kota, Baran, Chittorgarh, Bhilwara, and Sriganganagar
- Rajasthan's State Budget of 2014-15 set a target of expanding the area of land under cultivation for fruits to 8000 hectares during the fiscal year
- In Rajasthan, the highest production of mandarin is in the Jhalawar,<sup>9</sup> which is one of the major belts with over 17000 hectares of land and is often referred to as 'Chota Nagpur' ('Small Nagpur')

<sup>8</sup> Kappa Kondal, *Trends in Area and Production of Horticulture Sector in India*, Institute of Economic and Social Research, 44 (2), December 2014. URL: <http://bit.ly/18xiAI6>

<sup>9</sup> Charu Porwal, *A Study on Growth and Production of Mandarin (Citrus Reticulata in Jhalawar District of Rajasthan, India*, Journal of Industrial Pollution Control, 30(2), 2014). Available at: <http://www.icontrolpollution.com/articles/a-study-on-growth-and-production-of-mandarin-citrus-reticulata-in-jhalawar-dist-of-rajasthan-india-321-325.pdf>

Export of fruits and vegetables are governed by a separate agency under the DAC, namely the **Agricultural and Processed Food Products Export Development Authority (APEDA)**, a national agency established under the Agricultural and Processed Food Products Export Development Authority Act, 1985 (Amended Act, 2009). Under this Act, APEDA devises and implements the necessary regulations, schemes, and programs including:<sup>10</sup>

- **Development of Industries** through financial assistance, surveys and feasibility studies; participation in joint ventures, and other schemes;
- **Registration of Exporters;**
- **Establishment of Standards and Specifications;**
- **Packaging;**
- **Marketing** outside of India;
- **Export Promotion and Development;**
- **Collection of Statistics** on production, processing, packaging, marketing or export of the scheduled products; and
- **Training** in various aspects of the industries connected with the scheduled products

The Government of Rajasthan also maintains a number of programs in the agricultural sector relevant to development of horticultural value chains, such as COEs. The COEs focus on various horticultural products such as citrus, guava, pomegranate, cucumber, and papaya, among others. The main objective of the COEs is to provide high quality planting materials and technical support to farmers and encourage large-scale protected farming practices.

## b) Spices

India is the largest producer, consumer and exporter of a variety of spices (See Box 3). The sector is governed and regulated at the national level by the DAC and in Rajasthan by the Directorate of Horticulture. The **Spices Board of India** was established under the Spices Board

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<sup>10</sup> Agriculture and Processed Food Products Export Development Authority homepage, Ministry of Commerce and Industry, Available at: [http://apeda.gov.in/apedawebsite/about\\_apeda/About\\_apeda.htm](http://apeda.gov.in/apedawebsite/about_apeda/About_apeda.htm) [last accessed May 2, 2016]

Act (1986) to promote development of the industry.<sup>11</sup> In addition to providing extension and assistance services to exporters and importers, the Spices Board issues rules and regulations covering:

- **Export Promotion;**
- **Quality control;**
- **Development of Production Methods**, through scientific, technological and economic research;
- **Guidance to Farmers** on getting higher and better quality yields through scientific agricultural practices;
- **Financial and Material Support to Growers;**
- **Organic Production and Export;**
- **Infrastructure for Processing and Value Addition;**
- **Registration and Licensing;**
- **Research** on better processing practices, quality management systems, improved grading methods, and effective packaging techniques; and
- **Promotional and Educational Materials** for exporters and importers.

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<sup>11</sup> Spices Board of India homepage, Ministry of Commerce and Industry, Available at: <http://www.indianspices.com/> [last accessed May 2, 2016]

### ***Box 3: Economic Profile of the Spices Value Chain***<sup>12</sup>

- India contributes 70 percent of global spice production, and Rajasthan is the second largest producer in India of oilseeds and spices,<sup>13</sup> with untapped potential
- “High value, low volume crops,” including seed spices, are the most remunerative commodities of the arid and semi-arid regions of India, making Rajasthan the ‘Seed Spices Bowl’ of India along with Gujarat<sup>14</sup>
- Spice crops are unique in terms of their water and climatic requirements as well as their storage and processing needs
- The average farm size for growing spices in India is 3.96 acres, and the vast majority of farmers are smallholders
- India exports raw spices as well as value added products to nearly 135 countries in the world, meeting 50 percent of the global demand; the share of seed spices export to total spices export is only 21.87 percent in terms of quantity and 7.42 percent in terms of value
- Spices exports have grown substantially over the past few years. In 2014-15 a total of 8,93,920 tonnes of spices and spice products valued at \$2,432.85 million were exported, registering a nine percent increase in volume and eight percent increase in value compared to 2013-14<sup>15</sup>.
- Coriander has grown as a major spice export with significant demand in foreign markets. In 2014-15 it contributed to five percent of the total volume of spice exports. Export of coriander amounted to a total volume of 46,000 tonnes valued at approximately \$74.87 million, registering a one percent increase in volume and 34 percent increase in value compared to 2013-14.<sup>16</sup>
- Coriander is the largest spice crop grown in Rajasthan. More than 70 percent of seed coriander comes from the Hadoti region of Rajasthan, including the districts of Kota, Baran, Bundi, and Jhalawar.
- The **Kota** region alone accounted for nearly 98 percent of the area and production of coriander crop
- **Ramganj mandi** in Kota is the largest wholesale coriander market in India, nicknamed ‘Coriander City’

<sup>12</sup> *Vision 2020- Indian Council of Agricultural Research* (2016), available at [http://www.icar.org.in/Vision percent202050 percent20NRC-Seed percent20Spices, percent20Ajmer.pdf](http://www.icar.org.in/Vision%20202050%20NRC-Seed%20Spices,%20Ajmer.pdf)

<sup>13</sup> “Production of Spice by Countries.” UN Food and Agriculture Organization. 2011.

<sup>14</sup> *Vision 2020- Indian Council of Agricultural Research* (2016), available at [http://www.icar.org.in/Vision percent202050 percent20NRC-Seed percent20Spices, percent20Ajmer.pdf](http://www.icar.org.in/Vision%20202050%20NRC-Seed%20Spices,%20Ajmer.pdf)

<sup>15</sup> *Annual Report 2014-15*, Spices Board of India, available at <http://www.indianspices.com/sites/default/files/Annual%20Report%202014-15.pdf>

<sup>16</sup> *Annual Report 2014-15*, Spices Board of India, available at <http://www.indianspices.com/sites/default/files/Annual%20Report%202014-15.pdf>

#### 4. Government Programs, Including Subsidies

Agriculture has consistently held a high budget priority, with planned allocations for agriculture and allied sectors increasing every year. The national and state governments' budgets provide funds for agricultural production, irrigation management, farm credit, post-harvest storage, and processing infrastructure.<sup>17</sup> Most allocations are dedicated to subsidies of various kinds. Over the past few decades, the volume of total agricultural subsidies has increased, making them a central component of policy decisions and political discourse.

Agricultural subsidies have historically been focused on the production stage of the value chain. Government subsidies are provided in the following areas (some of which are discussed in greater detail in the following chapter):

- Seeds
- Fertilizer
- Irrigation
- Power
- Credit
- Price Supports
- Infrastructure
- Exports

Agricultural subsidies are primarily within the purview of the central government, which issues directions and full or partial funding to the state governments for their implementation. Inputs, including seeds and fertilizer, are one of the most subsidized areas. Fertilizer in particular has been subsidized in an effort to offset rising fertilizer prices, as discussed in greater detail below.

Due to national and state pressures and disciplines of the World Trade Organization (WTO) (See Box 4), the Indian government has increasingly explored “smart” subsidy alternatives. These aim to have a significant impact on the availability of food in the short run while stimulating growth and rural development and increasing (or at least not suppressing) effective demand and

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<sup>17</sup> Harshal A. Salunkhe and Dr. B. B. Deshmush, *The Overview of Government Subsidies to Agriculture Sector in India*, IOSR Journal of Agriculture and Veterinary Science (Volume 1, Issue 5 (Nov. - Dec. 2012), available at <http://www.iosrjournals.org/iosr-javs/papers/vol1-issue5/G0154347.pdf?id=1786>



commercial distribution of inputs over the long run. As a result of this trend, the Indian government introduced the Direct Benefit Transfer (DBT) model in the fertilizer sector. As this program is new, it will become possible to assess its viability and impact over time, but it does represent a shift in approach.

#### ***Box 4: WTO Disciplines on Domestic Support Measures in the Agricultural Sector***

The WTO Agreement on Subsidies and Countervailing Measures (WTO SCM Agreement) governs and limits the use of subsidies, defined as financial contributions by a government or any public body within the territory of a Member that confers a benefit. Measures must be “specific” to be subject to the WTO SCM Agreement, meaning that they must be tied to a particular enterprise, industry, or region. Export subsidies are expressly prohibited.

Agricultural subsidies are covered under the WTO Agreement on Agriculture (WTO Agriculture Agreement). Agricultural domestic support measures that have a direct effect on production and trade are subject to WTO disciplines. WTO Members, including India, must commit to reduce their Aggregate Measure of Support (AMS), or the amount of money spent on domestic support measures for the agricultural sector each year. Agricultural subsidies are classified according to a “traffic light system,” and fall under one of three boxes: amber, blue, and green. Only measures that fall under the amber box count towards the AMS calculation. Any amber box subsidy above the AMS limit is prohibited.

**Amber Box** subsidies are those that distort trade and production, and this category serves as a catchall under the WTO Agriculture Agreement for any domestic support that doesn’t fall into the Green or Blue Boxes.<sup>18</sup> *Amber Box subsidies include some input support subsidies, commodity-specific market price supports, and direct payments to farmers meant to encourage production and trade.* **Blue Box** subsidies are amber box subsidies that are subject to conditions that *limit production by farmers.*<sup>19</sup> These also include *de minimis* support, defined as 10 percent for developing countries, for rural and agricultural development. Blue Box subsidies are subject to lighter disciplines than amber box subsidies because they are viewed as an encouraging movement away from Amber Box subsidies.<sup>20</sup>

**Green Box** subsidies are those that do not distort trade or are minimally trade distorting, publically funded (i.e., excluding transfers from consumers), do not involve price support, and meet policy specific criteria listed in the Agreement.<sup>21</sup> *Green box subsidies, such as those for research and development, food*

<sup>18</sup> WTO Agreement on Agriculture, ¶6(1).

<sup>19</sup> WTO Agreement on Agriculture, ¶6(5); see also *Agricultural Negotiations Background Fact Sheet – The Boxes*, World Trade Organization, n.d., [https://www.wto.org/english/tratop\\_e/agric\\_e/agboxes\\_e.htm](https://www.wto.org/english/tratop_e/agric_e/agboxes_e.htm).

<sup>20</sup> *Agricultural Negotiations Background Fact Sheet – The Boxes*, World Trade Organization, n.d., [https://www.wto.org/english/tratop\\_e/agric\\_e/agboxes\\_e.htm](https://www.wto.org/english/tratop_e/agric_e/agboxes_e.htm).

<sup>21</sup> WTO Agreement on Agriculture, Annex 2, ¶1.

*security, and environmental assistance, are allowed without limitation. Other examples of green box subsidies include farmer training and pest disease programs.*

The package of commitments that resulted from the 10<sup>th</sup> WTO Ministerial in Nairobi, Kenya in December 2015 included refinement on agricultural export subsidies, food aid, and public stockholding disciplines. Members agreed to eliminate immediately their remaining agricultural export subsidies, however developing countries like India will have until 2018 to do so, unless they have provided notification, in which case they have until 2022. On a related note, developing countries have until 2023 to eliminate export subsidies for transport and marketing. Although controversial, WTO Members committed to address the issue of public stockholding (when a government purchases a large quantity of food from farmers at government-set prices above market prices in order to build up food stocks) through dedicated negotiations under the WTO Agriculture Committee. With respect to food security, WTO Members agreed to commit to encourage food aid while discouraging the distortion that can occur in the local markets and were encouraged to provide cash-based food aid, in-kind assistance, and procurement of food aid from local or regional sources in a way that won't "unduly compromise" agricultural commodity markets.

In addition to subsidy schemes, the State of Rajasthan encourages private investment through agricultural export zones, development of organic farming, and other measures, including the COEs described above.

## **5. Agricultural Labor**

One of the most distinguishing features of the rural economy in India has been the growth in the number of agricultural workers, cultivators, and agricultural laborers engaged in crop production. They are usually characterized by low wages, poor working conditions, and irregular employment. Often smallholder farmers whose production and revenue are insufficient to sustain them resort to finding temporary employment with the limited number of large agricultural land holdings while working on their small plot of land simultaneously. The agricultural sector, therefore, faces situations in which farming operations are overstaffed and have poor labor conditions. Because of the importance of job creation in the Development Corridors model, brief background on agricultural labor law and regulation is included below, and the regulatory interventions in the following section will include interventions to address labor issues.

Labor is on the concurrent list in the Indian Constitution, so regulation of labor falls within the domain of both the State and Central Governments. The Central Government has passed a number of laws, and the State Governments can frame laws as well as the rules regarding their

implementation.<sup>22</sup> Agricultural workers are covered through various legislative measures. Several measures have been taken to protect the interests of the working class and uplift the condition of agricultural workers. The first of these laws, the Minimum Wages Act, 1948, also applies to the agricultural sector. Subsequent laws, such as the Plantations Labour Act, 1951, were enacted to provide certain basic facilities to plantation workers. Many other existing labor laws are applicable or have direct bearing on agricultural labor, and the Rajasthan Government has issued rules, regulations, orders and circulars for the implementation and enforcement of national legislation (See Table 2).

**Table 2: Relevant Indian Agricultural Labour Laws**

Legislation	Scope	State Laws
Minimum Wages Act (1948)	Part-II of the Schedule of the Minimum Wages Act relates to employment in agriculture; the Act mandates the appropriate state governments to fix minimum wage and provides criteria, procedures, and enforcement of minimum wages	Rajasthan Government enacted the Rajasthan Minimum Wages Rules (1959) and Minimum Wages (Undisposed Amount) Rules (1961)
National Rural Employment Guarantee Act, later known as the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)	Act provides for the enhancement of livelihood security of households in rural areas of the country by providing at least 100 days of guaranteed wage employment in every financial year to every household whose adult members volunteer to do unskilled manual work; Act also lays down the wage rate as distinct from the Minimum Wages Act	Regular circulars and notifications by Department of Labor, Government of Rajasthan

<sup>22</sup> *Laws and Schemes Governing Agricultural Labour in India: A Critical Evaluation*, available at [http://shodhganga.inflibnet.ac.in/bitstream/10603/13735/11/11\\_chapter%203.pdf](http://shodhganga.inflibnet.ac.in/bitstream/10603/13735/11/11_chapter%203.pdf)

Plantations Labour Act (1951)	Act provides for the welfare of plantation labor by regulating the conditions of work in plantations <sup>23</sup> and includes cardamom spices in addition to other plantation crops; State Governments are empowered to extend any or all of the provisions of the Act to any plantation	Regular orders and circulars by the Rajasthan Forest Department, Government of Rajasthan <sup>24</sup>
The Inter-State Migrant Workmen (Regulation Of Employment And Conditions Of Service) Act, 1979	Act protects workers whose services are requisitioned outside their native states in India, establishes the rights of interstate workers (including agriculture), and regulates the roles of contractors, employers, and state governments	Rajasthan Inter-state Migrant Workmen (Regulation of Employment and Conditions of Service Rules (1981) <sup>25</sup>
Unorganized Workers' Social Security Act, 2008	Act provides for constitution of National Social Security Board at the central level to recommend schemes related to life and disability coverage, health and maternity benefits, old age protection and any other benefit for unorganized sector workers	Rajasthan enacted the Unorganized Workers' Social Security Rules (2011) to implement the provisions of the Act

Within the agricultural sector, lack of awareness about welfare measures and legal provisions, low social status, economic dependency, lack of political will, challenging social conditions, and weak labor systems may inhibit participation in developmental programs and hamper

<sup>23</sup> *Report on the Working of the Plantations Labour Act, 1951 During the Year 2009*, Indian Labour Journal (2011), available at [http://labourbureau.nic.in/Rep\\_WPL\\_2009.pdf](http://labourbureau.nic.in/Rep_WPL_2009.pdf)

<sup>24</sup> Forest Portal homepage, Government of Rajasthan, available at <http://www.forest.rajasthan.gov.in/content/raj/forest/en/home.html>, [Last accessed on May 4, 2016]

<sup>25</sup> Department of Labour homepage, Government of Rajasthan, available at <http://labour.rajasthan.gov.in/ActsAndRules.aspx>, [Last accessed on May 4, 2016]

enforcement of rights and standards under existing national laws.<sup>26</sup> That not only affects individuals but also the productivity of the farmland, impacting the entire value chain. As a result, many individuals have moved to take up non-farming activities and employment opportunities through central government sponsored rural employment guarantee schemes, creating a widening gap in employment in the agriculture sector.

Women form an integral part of the labor force in Indian agriculture and are involved in all aspects of agriculture, from crop selection to land preparation, seed selection, planting, weeding, pest control, harvesting, crop storage, handling, marketing, and processing. Apart from their pivotal role in cultivation of staple crops, they are primarily responsible for the production of secondary crops such as pulses and vegetables, which are often the only source of nutrition available to their families. However, due to the unorganized nature of the agricultural sector and the rigidity of social norms limiting the role of women in rural India, they often experience poor working conditions. The agricultural sector employs eighty percent of all economically active women in the country, and 48 percent of India's self-employed farmers are women.

Across various states in India, women mainly generate their income through agriculture and agricultural activities (See Table 3). In Rajasthan, over 81 percent of women are engaged in the agricultural sector.

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<sup>26</sup> Department of Labour homepage, Government of Rajasthan, available at <http://labour.rajabsthan.gov.in/ActsAndRules.aspx>, [Last accessed on May 4, 2016]

**Table 3: State-wise Trend of Women's Participation in Agriculture and Non-Agricultural Activities**

State	Total Female Workers	Percent of Female workers in Agriculture	Percent of Female workers in Non- Agricultural Activities
Himachal Pradesh	630521	82.47	17.53
Manipur	229137	55.59	44.41
Nagaland	279166	82.66	17.34
Andhra Pradesh	9585381	73.44	26.56
Rajasthan	4595570	81.07	18.93
Madhya Pradesh	5046293	79.45	20.55
Karnataka	5467914	61.11	38.89
Tamil Nadu	7454473	59.30	40.70
Maharashtra	10331758	74.53	25.47
Gujarat	3544508	57.12	42.88
Orissa	1584529	60.47	39.53
Tripura	170238	52.78	47.22
Assam	1265065	42.47	57.53
Punjab	1409704	24.51	75.49
Bihar	3541857	83.56	16.44
West Bengal	3528612	32.62	67.38
Uttar Pradesh	4999389	65.87	34.13
Kerala	1776280	21.27	78.73

Source: International Journal for Gender and Women's Studies, 2012<sup>27</sup>

Although the laws governing agricultural labor do not distinguish based on gender, challenges often remain at the farm level. While the Department of Women and Child Development under the Rajasthan Government focuses on child development, domestic violence, and sexual harassment issues, regulations governing women in agriculture are absent. One of the focus areas identified by the Rajasthan State Women's Policy (1996) is to "recognize and promote the contribution of women farmers."<sup>28</sup> The policy points out that this outreach can be done by targeting training, research, subsidies, and marketing support to women farmers. However, this policy has not been translated into concrete legal provisions and regulatory mechanisms. In Rajasthan, where FPOs and alternative farmer aggregation models are gaining momentum, aggregation models could be used as an effective foundation to encourage the participation of women and provide access to various services.

<sup>27</sup> Harshal A. Salunkhe & Dr. B.B. Deshmukh, *The Overview of Government Subsidies to Agriculture Sector in India*, IOSR Journal of Agriculture and Veterinary Science, Volume 1, Issue 5 (Nov. - Dec. 2012), available at <http://www.iosrjournals.org/iosr-jhss/papers/Vol19-issue5/Version-4/A019540106.pdf>

<sup>28</sup> *State Policy for Women (1996)*, Women and Child Development Department, Government of Rajasthan, available at [http://www.youth-policy.com/Policies/India%20State%20Policy%20for%20Women%20\(Rajasthan\).pdf](http://www.youth-policy.com/Policies/India%20State%20Policy%20for%20Women%20(Rajasthan).pdf)

### III. REGULATORY ISSUES ALONG THE VALUE CHAIN

A number of legal and regulatory issues relate to different parts of the value chain. While some of these are specific to a particular value chain activity, others are interconnected and impact multiple areas in the value chain.

*Figure 1: Stages of the Value Chain*



Policy, legal, and regulatory interventions along the value chain include Acts, rules, regulations, ordinances, government policies, government support programs (subsidies), notifications, and other schemes to support and assist farmers and encourage investment. Specific bodies and frameworks at the central and state levels are in place to regulate and govern different elements of the value chain.

The systemic nature of the agricultural sector will have a bearing on the types of legal and regulatory interventions that can open up opportunity in the horticultural and spices value chains. For example, production in India is comprised mainly of small and marginal farmers concentrated in underdeveloped rural areas. At the production level, a number of legal and regulatory measures have been taken to facilitate access to inputs, credit, land, and other resources. Land tenure is one of the most central aspects of the agricultural sector, and the overarching challenge of fragmented and dispersed land holdings will impact how the sector develops. While some direct interventions in land rules and their implementation could help at the production level, other legal and regulatory measures could be used to address these challenges. For example, farmer aggregation models, such as FPOs, have been looked to as a way to organize farmers and consolidate their rights, and the regulation of these models could facilitate greater opportunity at the production level.

At the storage/logistics and processing levels, the central government and Government of Rajasthan have undertaken policies, schemes, and programs to encourage private investment and boost infrastructural development to provide value addition along the value chain. Regulatory measures governing processing, standards, quality, infrastructure, finance, and technology continue to evolve at the state and central levels. At the market level, Indian agricultural markets are heavily state government controlled. Major wholesale markets (mandis) are run by

Agricultural Produce Marketing Committee (APMC) Boards are regulated by state level APMC laws, like the Rajasthan APMC Act and Rules. Interstate and export markets are regulated by national agencies like the Spices Board of India and the Agriculture Produce Export Development Authority.

## A. PRODUCTION

Production is perhaps the most critical and most complex stage of the value chain, as it both represents the largest employment sector in the country (with many farmers in rural India involved) and reflects some of the most longstanding challenges. Legal and regulatory issues involve land, farmer aggregation models, contract farming, inputs (seeds and fertilizer), access to water, finance (credit and insurance), and marketing, all of which contribute to the quality and quantity of produce and drive rural farming economies. The various aspects of the production stage are regulated and governed by a variety of measures at different levels of government, with the state government playing a vital role and establishing frameworks that meet the local needs, circumstances, and development.

### 1. Land

Since land is a primary factor of production, regulation of land ownership and distribution directly influence production and investment decisions throughout the agricultural sector. Access to land continues to be of critical significance in large parts of India, and agriculture and primary sector activities based on land and other natural resources are the main sources of livelihood for a vast majority of the economically vulnerable rural population. Rajasthan is the largest state in India in terms of land, and, as a large portion of the state's land is desert area, cultivable land is restricted and must be optimally used to achieve socio-economic development.

India's Central and State Governments undertook land reforms during the period immediately after independence in order to abolish the outdated *Zamindari* system, reestablish equity in land, and redistribute previously consolidated land holdings. Since then, land policy in India has gone through several phases (See Box 5).



### ***Box 5: Phases of Land Policy in India***

1. Abolition of Intermediaries and Tenancy Reforms (1950-72)
2. Land Ceiling Regulations Limiting the Size of Land Holdings (1969-74)
3. Bringing Uncultivated Lands Under Cultivation (1972-85)
4. Increased Attention to Soil and Water Conservation (conservation was achieved through the Drought Prone Areas Program (DPAP), Desert Development Program (DDP), and wastelands development initiatives establishing a Wasteland Development Authority) (1985-95)
5. Current Policy Debate on Land Legislation and Transparency in Land Records (including through computerization) (1995- current)<sup>29</sup>

### ***Laws and Regulations Governing Land***

Land is regulated at the national level by the Department of Land Resources under the Ministry of Rural Development. It covers the key areas of land administration including revenue, acquisition, resettlement, administration, data, and technological development among others. National level programs are passed on to the state governments as guidelines for implementation. In Rajasthan, there is no dedicated land management body that adopts and implements land laws and regulations pertaining to land. Different agencies govern different aspects of land administration and reform. For example, through a recent law called the Rajasthan Urban Land Certification of Titles Bill 2016 that was passed by the state legislature in April 2016, the state government now can designate state authorities to perform specific functions such as land surveying and record keeping.<sup>30</sup> Similarly, with respect to agricultural land, various departments such as Rajasthan's Department of Agriculture and Department of Revenue govern different aspects of agricultural land.

The Government of Rajasthan has implemented several laws that redistribute land rights for agricultural land, grant land titles, and establish tenancy rights for farmers. These include the Rajasthan Land Reforms Act, 1952 and Land Settlement Act, 1953, which, along with the Land Ceiling Act, 1973, which created a new class of agricultural landowners across the state.

<sup>29</sup> See Kumar, Anand & Sharma, Ajit K. *Land Reform in India: Time to Rethink*. International Journal of Research in Humanities and Social Sciences. Vol. 1, Issue 8, (Oct-Nov 2013), available at [http://rajimr.com/wp-content/uploads/2013/12/5\\_27-37-Anand-Kumar-Ajit-Kumar-S.1.pdf](http://rajimr.com/wp-content/uploads/2013/12/5_27-37-Anand-Kumar-Ajit-Kumar-S.1.pdf)

<sup>30</sup>Sahil Makkar, *Rajasthan Government Does it Again, Ushers in Crucial Land Reform*, SmartInvestor.in, April 10, 2016, available at [http://smartinvestor.business-standard.com/market/Econnews-377376-Econnewsdet-Rajasthan\\_govt\\_does\\_it\\_again\\_ushers\\_in\\_crucial\\_land\\_reforms.htm#.Vx3PU-Z97eQ](http://smartinvestor.business-standard.com/market/Econnews-377376-Econnewsdet-Rajasthan_govt_does_it_again_ushers_in_crucial_land_reforms.htm#.Vx3PU-Z97eQ)

Land issues, particularly those surrounding agricultural land, have been significant in India. Financing for private investment is often dependent upon the ability to produce clear and marketable title for the land instead of leasehold rights. For farmers, challenges exist with respect to registering land and securing clear title, and many farmers will have trouble holding the clear chain of title for using the land as collateral needed to access financing as a result.

For investors and project developers, the situation can be challenging in the light of issues with fragmented land holdings, fair compensation, and sensitivity to loss of ownership of hereditary land. These challenges have relevance for all types of investment and are particularly pertinent in potential investment projects for creating sub-market yards, pack houses, terminal market complexes, and cold storage and supply chain investment.<sup>31</sup> As a result, the Central Government had proposed a new Land Acquisition Law, called the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Bill, 2015 to address this challenge by exempting rural infrastructure from the land acquisition restrictions.<sup>32</sup> Amid great opposition to this Bill, the Indian Government moved to withdraw it from Parliament. However, the Central Government has asked state governments to push through amendments to own laws to simplify land acquisition.<sup>33</sup> Subsequently, states including Rajasthan have taken steps to amend their own land acquisition policies. In April 2016, Rajasthan passed the Rajasthan Urban Land (Certification of Titles) Act, 2016, and the Rajasthan Land Pooling Schemes Bill to consolidate small land holdings and establish clear land records, with the objective of easing the land acquisition across economic sectors.<sup>34</sup> These titling laws are aimed at being buyer- and industry-friendly, and they have the potential to benefit small and marginalized farmers. These measures are expected to create a transparent land market with assured ownership, thereby strengthening land management.<sup>35</sup> The implementation and impact of these new laws will become clearer with time, but both represent promising developments.

Although land reforms and land ceiling laws successfully established equity in the ownership of land, over the years, large-scale fragmentation of land has taken place in accordance with legal inheritance rights that are defined under several other laws. To address this challenge, many

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<sup>31</sup> See Resurgent Rajasthan, available at <http://resurgent.rajasthan.gov.in/focus-sectors/agro-food-processing>

<sup>32</sup> *The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Bill, 2015*, available at <http://www.prsindia.org/billtrack/the-right-to-fair-compensation-and-transparency-in-land-acquisition-rehabilitation-and-resettlement-amendment-bill-2015-3649/>

<sup>33</sup> Rahul Shrivastava, *Mission Impossible? Land Bill Likely to be Withdrawn in Budget Session*, NDTV, February 23, 2016, available at <http://www.ndtv.com/india-news/mission-impossible-land-bill-likely-to-be-withdrawn-in-budget-session-1280279>

<sup>34</sup> Hamza Khan, *Rajasthan: Raje Government Passes Bills to Ease Land Acquisition*, The Indian Express, April 6, 2016, available at <http://indianexpress.com/article/india/india-news-india/rajasthan-raje-govt-passes-bills-to-ease-land-acquisition/>

<sup>35</sup> *Rajasthan Government Passes Key Land Reform Bills*, 99Acres, April 9, 2016, available at <http://www.99acres.com/articles/rajasthan-government-passes-key-land-reform-bills-nid.html>

states including Rajasthan and Uttar Pradesh, have enacted state level legislation. The Rajasthan Holdings (Consolidation and Prevention of Fragmentation) Act, 1954 made progress by restricting fragmentation or division of land, imposing specific requirements on sale of such land, and developing schemes for compulsory consolidation of fragmented holdings.

### Agricultural Land Tenancy

The Rajasthan Tenancy Act (1955, as amended in 2014)<sup>36</sup> regulates agricultural land tenancy. Due to certain legal restrictions, historic practices, and lack of farmer awareness, about 90 percent of leased area is informal and unrecorded. As a result, large variations in tenancy exist, and approaches including conventional share-cropping, reverse tenancy, contract farming, and short-term, and long-term leases all exist. Marginal farmers and agricultural laborers who do not own agricultural land or the resources to undertake cultivation independently often opt for tenancy.

Recognizing the potential in large-scale production and the agri-processing industry, in 2011 the Government of Rajasthan Government amended the Tenancy Act to facilitate larger lease holdings of agricultural land for longer periods by entrepreneurs who are interested in cultivating agro-based products.<sup>37</sup> The amendment added a provision to Section 45 of the Rajasthan Tenancy Act, 1955 for leasing out *kathedari* or *khudkasht* (self-cultivated) land on 15-year lease to anyone for the purpose of ‘agricultural operations’ in connection with agro-processing and agri-business enterprises.<sup>38</sup> That is applicable in the case of *kathedar* tenants as well as those who can sublet their holdings.

Despite these legal improvements, however, fragmentation challenges remain and could perhaps be more fully addressed through additional measures. While land use and tenancy are often quite complex and may difficult to address in the short- and medium-term, several legal and regulatory interventions could be undertaken to support a Development Corridors approach in Rajasthan.

### **Regulatory Options:**

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<sup>36</sup> Although the most recent amendment to the Act was in 2014, the last amendment impacting agricultural tenancy occurred in 2011.

<sup>37</sup> *Rajasthan Amends Tenancy Act*, The Hindu, March 26, 2011, available at <http://www.thehindu.com/todays-paper/tp-national/tp-newdelhi/rajasthan-amends-tenancy-act/article1572947.ece>

<sup>38</sup> The Rajasthan Tenancy (Amendment) Bill, 2011, Bill No. 9 of 2011, §45; See also *Rajasthan Amends Tenancy Act*, The Hindu, March 26, 2011, available at <http://www.thehindu.com/todays-paper/tp-national/tp-newdelhi/rajasthan-amends-tenancy-act/article1572947.ece>

- Develop Additional Legal Changes to Address Land Fragmentation Issues, Balancing the Needs of Different Stakeholders, and Amend Tenancy Laws:** In states like Rajasthan, where land holdings are small, the potential for private sector participation may remain limited. Government policy to allow tenancy arrangements in various forms could limit fragmentation of land and enable effective agricultural land management. To further increase investment flows into agricultural land holdings, controlled leasing to the private sector could be allowed through amended legal provisions that allow long-term tenancy agreements with farmers' organizations (including FPOs and Producer Companies) and tenancy provisions in contract farming arrangements. Rajasthan could consider the adoption of a "group approach" in land management and investment.<sup>39</sup> This recommendation would require necessary amendments in state tenancy laws (Rajasthan Tenancy Act, 1955) to allow leasing of land to legally established farmers' and women's groups, recognizing such groups as a valid category of landowners.<sup>40</sup>
- Put in Place Measures to Enforce Informal Tenancy Arrangements:** Many tenancy arrangements remain informal, and unclear legal status for tenancy arrangements and lack of standardization in contracts could create difficulties for poor and marginal farmers who might lack recourse in the event an issue arises. In response, many states have abolished land tenancy altogether. Although Rajasthan recognizes tenancy rights, the government lacks a regulatory system that governs local tenancy issues, and farmers could be benefitted by development and implementation of a model tenancy contract along with local dispute resolution mechanisms. The existing land laws in Rajasthan provide for different forums and procedures for adjudication of land disputes, which predominantly rest with the land revenue authorities within the state government. For instance, the Rajasthan Land Revenue Act, 1956 has provisions to refer disputes to arbitration or to be decided by the Land Records Officer, depending upon the type of issue or dispute. Therefore, a common adjudicatory body and a uniform procedure are absent, leading to complexity and delay in settlement of disputes and causing hardships to largely rural and undereducated agricultural populations. Some states, such as Bihar, have dealt with this challenge by enacting a special law for land disputes ('The Bihar Land Disputes Resolution Act, 2009') to deal solely with land disputes and provide for a

<sup>39</sup>*Draft National Land Reforms Policy*, Department of Land Resources- Ministry of Rural Development, Government of India, July 24, 2013, available at [http://rural.nic.in/sites/downloads/latest/Draft\\_National\\_Land\\_Reforms\\_Policy\\_July\\_2013.pdf](http://rural.nic.in/sites/downloads/latest/Draft_National_Land_Reforms_Policy_July_2013.pdf)

<sup>40</sup>*Draft National Land Reforms Policy*, Department of Land Resources- Ministry of Rural Development, Government of India, July 24, 2013, available at [http://rural.nic.in/sites/downloads/latest/Draft\\_National\\_Land\\_Reforms\\_Policy\\_July\\_2013.pdf](http://rural.nic.in/sites/downloads/latest/Draft_National_Land_Reforms_Policy_July_2013.pdf)

uniform and common forum, procedures, and mechanisms in the resolution of land disputes.<sup>41</sup>

- **Develop Annotated Model Tenancy Contract:** Formalizing tenancy through contracts could help bring small and marginal farm tenants within the ambit of institutional credit. Written contracts could be made available to banks, government departments, or insurance companies to enable tenants to tap institutional credit/government programs (including subsidies). It could also open the agricultural lease market to private investment in the sector.<sup>42</sup> In the State of Rajasthan, where tenancy is allowed and informal tenancy arrangements are prevalent in small rural economies, further clarity around contracts and regulation of land tenancies could have a significant impact on the agricultural sector. Annotated model tenancy contracts, similar to the model contract farming agreement under the Model APMC Act (discussed below; this recommendation could also be implemented at the state level) could be an effective tool to implement and enforce standardized and written tenancy agreements. An annotated model agreement that clearly explains the provisions and the rationale behind them would help to ensure that farmers' rights are protected and could be implemented extensively through farmer training programs and extension services. FPOs or other aggregation models could also be potential platforms for such legal training.
- **Improve Land Records and Titling:** Land records play a vital role in establishing ownership or land and accessing land as collateral for credit and financing. As it is a primary source of collateral for bank loans, input financing, and other financial needs, clear title to agricultural land is necessary for small farmers who have limited assets and other financial resources. Maintenance of land records and availability of easily accessible land information are critical governance issues faced in India. A majority of farmers in rural areas rely mainly on handwritten land documents, which present a number of challenges such as durability of records, authenticity, and accuracy of information. The Digital India Land Records Modernization Programme (DILRMP) was launched by the Government of India in August 2008 to modernize management of land records, minimize scope of property disputes, enhance transparency in the land records maintenance system, and facilitate the shift towards guaranteed conclusive titles to immovable property in the country.<sup>43</sup> While Rajasthan state has made progress under this

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<sup>41</sup> *Draft National Land Reforms Policy*, Department of Land Resources- Ministry of Rural Development, Government of India, July 24, 2013, available at [http://rural.nic.in/sites/downloads/latest/Draft\\_National\\_Land\\_Reforms\\_Policy\\_July\\_2013.pdf](http://rural.nic.in/sites/downloads/latest/Draft_National_Land_Reforms_Policy_July_2013.pdf)

<sup>42</sup> R.S. Deshpande, *Current Land Policy Issues in India*, Food and Agriculture Organization of the United Nations, available at <http://www.fao.org/docrep/006/y5026e/y5026e0b.htm>

<sup>43</sup> *Digital India Land Records Modernization Programme (MIS)*, Department of Land Resources- Ministry of Rural Development, Government of India, available at <http://nlrmp.nic.in/>

program, a significant portion of land records continue to be handwritten and the computerized records have not been integrated with banks and court records in the state.<sup>44</sup> Higher state funding and implementation support under the DILRMP program would boost farmers' access to credit and strengthen the financial sector in rural India. Alternatively, FPOs could also act as training and support agencies that assist their member farmers in maintaining computerized land records and work with the government in incorporating member data into official records.

## 2. Farmer Producer Organizations

The concept of farmer aggregation was introduced by the Indian government to deal with challenges such as land fragmentation, low productivity by small and marginal farmers, lack of access to infrastructure, and poor education and lack of training. Farmer organizations originally took the form of cooperatives designed to pool land owned by small farmers under joint management. Other models for aggregation of land holdings have since emerged, including farmer producer organizations (FPOs) and producer companies (PCs), to encourage aggregation, improvement, and cultivation using modern technologies. FPOs, which are playing an increasing role in Kota, Rajasthan, offer a form of aggregation of both land holdings and produce, which leaves land titles with individual producers and uses the strength of collective planning for production, procurement, and marketing to add value to members' produce. FPOs are also increasingly seen as an important link in risk mitigation strategies to ensure traceability in value chains and overcome challenges such as deforestation and climate change. Farmer aggregation models have also been supported with financial resources to develop input, land, water, storage, and processing resources.<sup>45</sup>

### Cooperatives

Cooperatives were the first of the collective farming approaches to be implemented across India, although this initial approach encountered some challenges. The 97<sup>th</sup> amendment to the Indian Constitution passed in 2011 was aimed at encouraging the formation of cooperatives in order to aid progress in rural India. The 97<sup>th</sup> Constitutional Amendment makes the right to form cooperatives a fundamental right, and through the amendment lawmakers indicated a clear

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<sup>44</sup> *Land Records State Generic Details*, Digital India Land Records Modernization Programme (MIS), Department of Land Resources- Ministry of Rural Development, Government of India, available at <http://nlrmp.nic.in/faces/rptPhysicalHome/rptStateGenericDetail.xhtml?id=../master/physical.xhtml>

<sup>45</sup> Dr. Narayan G. Hegde, *Agricultural Cooperatives: Key to Feeding the World*, BAIF Development Research Foundation, available at [http://www.baif.org.in/doc/Sustainable\\_Agriculture/Agriculturai\\_cooperatives\\_key\\_to\\_feeding\\_the\\_world.doc](http://www.baif.org.in/doc/Sustainable_Agriculture/Agriculturai_cooperatives_key_to_feeding_the_world.doc)

intention to reform the agrarian economy by giving the rural electorate the ability to form organizations through which they could independently pursue socio-economic objectives. Enabling individuals to form cooperatives as a constitutional right has increased the relevance of these institutions in the democratic setup of the country as well as in the agricultural industry.

The 97<sup>th</sup> Constitutional Amendment is detailed and outlines several procedural aspects that need to be followed in its implementation. For example, the amendment makes it obligatory for the states to ensure the autonomy of cooperatives and makes it binding for state governments to facilitate voluntary formation, independent decision-making, and democratic control and functioning of the cooperatives. The Rajasthan Cooperative Societies Act was introduced accordingly in 2015.

Cooperatives have faced various challenges, such as lack of education in rural areas, overemphasis on membership rather than on quality, failure to create confidence and enthusiasm among farmer members, preponderance of absentee landowners as members, inadequacy of concrete laws and regulations to sustain equitable cooperatives, and lack of transparency in the schemes. One of the key issues facing cooperatives was the extent of government control and involvement in the cooperatives' functioning, with the Registrar of Cooperatives (ROC) or state government having the power to veto decisions. This involvement often led to lack of flexibility in decision-making based on member interests. In addition, lack of transparency, lack of expertise in managing the business efficiently, poor connectivity with technical and commercial organizations, and, often, inadequate resources are among the reasons most oft cited for failure of the initial cooperative model.

### FPOs and Producer Companies

In response to these challenges, other models such as FPOs and PCs have been promoted. In 2002 the Indian Central Government incorporated a new section (Part IXA) into the Indian Companies Act ('Companies Act') to cover PCs and FPOs. PCs (and FPOs) represent a fundamentally different organizational and management model, distinct from cooperatives (See Table 4):

- i. *Business Enterprise*: PCs are designed to provide more legitimacy and credibility and draw a distinction from the perceptions surrounding cooperatives as being too welfare-oriented, inefficient, and prone to corruption (Section 581B of Companies Act).
- ii. *Group Membership*: PCs allow registered and non-registered groups, such as self-help groups or user groups, to become equity holders. This enabling provision is an improvement over the existing legislation on cooperatives, which allows only individual producers to be members (Section 581D of Companies Act).

- iii. *Membership*: The Companies Act permits only certain categories of persons to participate in the ownership of PCs, i.e., the members necessarily have to be “primary producers” defined as persons engaged in an activity connected with or related to primary produce (Section 581A(k) of Companies Act). While this restriction ensures that outsiders do not capture control of the company, it may make it difficult to raise investments from other players in the supply chain (Section 581D of Companies Act).
- iv. *Professional Management*: The PC model is designed to improve professional capability by allowing appointment of professionals in the governance structure. Thus, small and marginal producers can have access to professional management inputs while retaining qualitative governance control.
- v. *Regulation*: Unlike cooperatives, companies are governed by stronger regulation that stipulates standards for management, disclosure, and reporting. This potentially empowers the members to demand operational and fiscal disciplines.

**Table 4: Differences between Cooperatives and Producer Companies<sup>46</sup>**

Feature	Cooperative	Producer Company
Registration	Cooperative Societies Act	Companies Act
Membership	Open to any individual or cooperative	Only to producer members and their agencies
Professional on Board	Not provided	Can be co-opted
Area of Operation	Restricted to the state of registration, or in some cases multiple states	Throughout India
Relation with Other Organizations	Only transaction-based	Can form joint ventures and alliances
Shares	Not tradable	Tradable within the membership
Member Shares	No connection with number	Articles of association can provide

<sup>46</sup> Sukhpal Singh and Tarunvir Singh, *Producer Companies in India: A Study of Organization and Performance*, Center for Management in Agriculture (CMA)- Indian Institute of Management Ahmedabad, October 2013, available at [http://www.iimahd.ernet.in/users/webrequest/files/cmareports/14Producer\\_Company\\_Final.pdf](http://www.iimahd.ernet.in/users/webrequest/files/cmareports/14Producer_Company_Final.pdf)



	of shares held	for linking shares and delivery rights
Voting Rights	One person, one vote, but ROC and government have veto power	Only one member, one vote and non-producer cannot vote
Reserves	Can be created if made profit	Mandatory to create reserves
Profit Sharing	Limited dividend on capital	Limited return on capital but can give bonus or bonus shares based on patronage
Role of Government	Significant	Minimal
Audit Requirements	Annual report to regulator	As per the Companies Act
External Equity	No provision	No provision
Borrowing Power	Restricted	Wide array of options
Dispute Settlement	Within Cooperative structure	Arbitration

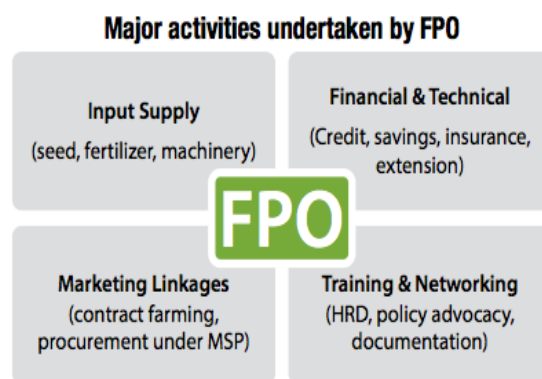
During their initial stage, PCs, by and large, also struggled, as they were promoted by the state and had large memberships. Most were involved in input supply, credit supply, crop/produce purchase, contract farming, and manufacture of tea. Many suffered from a poor capital base, lack of farmer participation, restrictions on shareholding, and poor perception of these entities by the farmers as service providers.<sup>47</sup>

As a result, an expanded FPO model evolved with the objective of resolving the range of challenges that confront farmers in India today, many of which could not be addressed by previous solutions. To overcome constraints imposed by the small size of individual farms, FPO members can leverage collective strength and bargaining power to access financial and non-financial inputs and services and appropriate technologies, reduce transaction costs, tap into high value markets, and enter into partnerships with private entities on more equitable terms. FPOs are, therefore, designed to better address the key needs of farmers at a local level (See Figure 2).

<sup>47</sup> Sukhpal Singh and Tarunvir Singh, *Producer Companies in India: A Study of Organization and Performance*, Center for Management in Agriculture (CMA)- Indian Institute of Management Ahmedabad, October 2013, available at [http://www.iimahd.ernet.in/users/webrequest/files/cmareports/14Producer\\_Company\\_Final.pdf](http://www.iimahd.ernet.in/users/webrequest/files/cmareports/14Producer_Company_Final.pdf)

FPOs can also be a significant intervention point for women farmers and workers in the agricultural sector. Women producers, who are often excluded from or face limited participation in organizations, could be better integrated into an FPO structure that would enable them to access productive assets, finance, education, and technology.<sup>48</sup> Establishing their own organizations or becoming more active in integrated FPOs could help women in the sector overcome these constraints, increase their economic and social situation, and improve access to needed services.

**Figure 2: Farmer Producer Organization Activities<sup>49</sup>**



Source: Small Farmers Agri Business Consortium, 2015

**The Policy and Process Guidelines for Formation of Farmer Producer Organizations** (‘FPO Policy Guidelines’) issued by the Ministry of Agriculture, Government of India lay out the objectives, role, and functions of FPOs in India. This document is meant to serve as a reference and guide to Central and State Government agencies which seek to promote and support FPOs (states are recommended to enact FPO Regulations to implement the FPO Policy Guidelines) and link FPOs to benefits under various programs and schemes of the Central and State Governments. It also provides for a dedicated source of funding for FPOs from the Rashtriya Krishi Vikas Yojana (RKVY), a central government sponsored scheme.<sup>50</sup>

<sup>48</sup> Aziz Elbehri and Maria Lee, *The Role of Women Producer Organizations in Agricultural Value Chains: Practical Lessons from Africa and India*, Food and Agriculture Organization of the United Nations, 2011, available at <http://www.fao.org/3/a-i2438e.pdf>

<sup>49</sup> *FPO Brochure 2015*, Small Farmers Agri-Business Consortium- Society promoted by Department of Agriculture and Cooperation, Ministry of Agriculture and Farmers Welfare, Government of India, available at [http://www.sfacindia.com/PDFs/FPO\\_Brochure2015-English.pdf](http://www.sfacindia.com/PDFs/FPO_Brochure2015-English.pdf)

<sup>50</sup> Small Farmers’ Agribusiness Consortium, *Year of Farmer Producer Organizations*, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India (2014), available at <http://sfacindia.com/PDFs/Year-of-FPO2014.pdf>.

The FPO Policy Guidelines emphasize a ‘service model’ for farmer producer organizations in India. Through end-to-end services, the FPO will facilitate links between farmers, processors, traders, and retailers, as well as provide access to key business development services such as market information, input supplies, and transport services. Under the FPO Policy Guidelines, the core functions of the FPO include:<sup>51</sup>

- a) **Financial Services:** FPOs play a financial intermediary role, helping more effectively target small producers for financial services; providing loans for crops, purchase of tractors and farm equipment, construction of wells, and pipelines; and engaging with formal financial institutions, thus reducing costs for financial services.
- b) **Procurement of Member Produce:** FPOs can procure agriculture produce from member farmers, aggregating farmer produce and improving links to other market actors.
- c) **Storage and Other Value Chain Infrastructure and Services:** FPOs can provide storage, packaging, and other value addition services.
- d) **Provision of Inputs:** FPO can provide low cost and quality inputs to member farmers, including fertilizers, pesticides, seeds, sprayers, pump sets, accessories, and pipelines.
- e) **Marketing Services:** FPOs will do direct marketing after procurement of agricultural produce, enabling members to save in terms of time, transaction costs, waste, distress sales, price fluctuations, transportation, and quality maintenance.
- f) **Insurance Services:** FPOs can provide various insurance services like crop insurance, electric motors insurance, and life insurance to farmers.
- g) **Technical Services:** FPOs should promote best practices in farming, maintain marketing information systems, and diversify and raise levels of knowledge and skills in agricultural production and post-harvest processing to add value to products.
- h) **Linking Members to Other Institutions and Policymaking Processes:** FPO will make channels of information accessible to rural producers regarding product specifications, market prices, and other business services, facilitating links with financial institutions; building connections between producers, processors, traders and consumers; and facilitating cooperation with government programs. FPOs can also be a channel for providing input for policy formulation by channeling input from the farming community.

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<sup>51</sup> Department of Agriculture and Cooperation, *Policy & Process Guidelines for Farmer Producer Organizations*, Ministry of Agriculture, Government of India (2013), available at <http://nhm.nic.in/Archive/FPO-Policy&Process-GuidelinesDAC2013.pdf>

- i) **Land Management and Tenancy:** FPOs can help offset some of the challenges surrounding land holdings and land management, and FPOs can also be a vehicle for addressing challenges with land tenancy, which often leaves small farmers exposed.

Under the FPO Policy Guidelines, the **Small Farmers' Agribusiness Consortium (SFAC)**<sup>52</sup> was established by the DAC, Government of India, as the designated agency of DAC to act as a single-window for FPO technical support, training needs, research, and knowledge management and to create linkages to investments, technology, and markets. SFAC was created to provide different types of support to State Governments, FPOs, and other entities engaged in the promotion and development of FPOs. In particular, SFAC intends to create sustainable linkages between FPOs and inputs suppliers, technology providers, extension and research agencies, and marketing and processing entities, in both the public and private sectors.

In Rajasthan, FPOs have gained traction in recent years. However, the number of registered FPOs (22) and farmers mobilized under them (36,215) is still relatively small.<sup>53</sup> There are about 11 FPOs in Kota and 11 in Jhalawar, promoted by different bodies including the National Bank for Agricultural and Rural Development (NABARD), the Small Farmers Agribusiness Consortium (SFAC) and the Department of Agriculture, Government of Rajasthan. Field visits have indicated that the environment for FPOs in Kota is favorable. Regulatory interventions at the state level specific to FPOs could help further formalize the FPO model, particularly by creating additional clarity around its legal status and management process in order for FPOs to continue to develop into an efficient farmer aggregation model.

India's experiences with different farmer aggregation models highlight some regulatory good practices, as detailed above. International best practices also exist and are included in the Cooperative Law and Regulation Initiative (CLARITY),<sup>54</sup> an international initiative developed to create and disseminate a set of principles for cooperative law reform (covering diverse forms of farmer aggregation models) based on collective experience and analysis of various countries' cooperative landscapes. CLARITY's principles are designed to be used to analyze a country's legal and regulatory environment and institute a process for necessary policy changes. These core principles could be used as guidelines for developing an effective FPO policy in Rajasthan (See Table 5).

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<sup>52</sup> Department of Agriculture and Cooperation, *Policy & Process Guidelines for Farmer Producer Organizations*, Ministry of Agriculture, Government of India (2013), available at <http://nhm.nic.in/Archive/FPO-Policy&Process-GuidelinesDAC2013.pdf>

<sup>53</sup> Small Farmers' Agribusiness Consortium, *Year of Farmer Producer Organizations*, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India (2014), available at <http://sfacindia.com/PDFs/Year-of-FPO2014.pdf>.

<sup>54</sup> *Enabling Cooperative Development: Principles for Legal Reform*, The Cooperative Law and Regulation Initiative (CLARITY) and U.S. Agency for International Development (2006), available at <https://www.nreca.coop/wp-content/uploads/2013/07/CLARITYFullReport.pdf>

**Table 5: Regulatory Interventions to Strengthen Farmer Producer Organizations**

CLARITY Core Principles	Implementation	Current Laws	FPO Policy Guidelines	Regulatory Intervention
<b>Provide Coherent and Efficient Regulatory Framework (Including Registration)</b>	Time limits/default registration periods to minimize possibilities for long periods of (time period may be set for approval of applications for registration)	<p>Indian Companies Act mandates the Registrar to issue a certificate of incorporation within 30 days of receiving all documents and fulfilling the necessary requirements of the PC<sup>55</sup></p> <p>Rajasthan Societies Registration Act provides that the Registrar shall certify that a society is registered upon filing of the prescribed documents;<sup>56</sup> similar provisions exist under the Multi State Cooperative Societies Act (2002)</p>	Department of Agriculture and Cooperation (DAC), Ministry of Agriculture, Government of India has identified farmer producer organization registered under the special provisions of the Companies Act, 1956 as the most appropriate institutional form	State level FPO regulation prescribing the registration process with a specific time limit for approval of registration
<b>Promote Equitable</b>	Registration done by one office with all registration	Farmer organizations can legally be set up	The provisions of this Policy would apply equally to	State FPO regulation that establishes unified

<sup>55</sup> Section 581C(2) of Indian Companies Act ““If the Registrar is satisfied that all the requirements of this Act have been complied with in respect of registration and matters precedent and incidental thereto, he shall, within thirty days of the receipt of the documents required for registration, register the memorandum, the articles and other documents, if any, and issue a certificate of incorporation under this Act””.

<sup>56</sup> Section 3(1) of Rajasthan Societies Registration Act (1958) “upon such memorandum and certified copy being filed, the Registrar shall certify under his hand that the society is registered under this Act”

<p><b>Treatment</b></p>	<p>functions in the same institution</p>	<p>under the Companies Act, Rajasthan Societies Registration Act, and other cooperative legislation</p>	<p>FPOs registered either under the Companies Act or under central and state cooperative society laws</p>	<p>FPO regulations bringing all farmer organizations under the ambit of a single framework or clear state policy that recognizes registration under the Companies Act only</p>
<p><b>Avoid Conflicts of Interest</b></p>	<p>Regulatory functions should be institutionally separated from other functions, such as promotion or registration</p> <p>Entrusting the same agency with both promotion and law enforcement responsibilities may lead to conflicts of interest that compromise the efficacy and fairness of regulation</p>	<p>Promotion and registration of PCs is within the scope of the Registrar of Companies under the Companies Act</p>	<p>DAC will work with Ministry of Corporate Affairs and other stakeholders to further clarify and strengthen provisions of the law relating to the registration, management and regulation of FPOs with a view to fostering fast paced growth of FPOs</p> <p>Besides encouraging State Governments to take up formation of FPOs on a large scale through Centrally-sponsored and State-financed programs and schemes, DAC suggests steps to be taken by State Governments to</p>	<p>State regulatory authority (similar to the APMB Board) that adopts national policy and tailors local regulations for implementation</p>

			support and strengthen FPOs	
<b>Protect Democratic Member Control</b>	Farmer aggregation models should determine any requirements for size and eligibility criteria for membership through internal governance procedures, subject to generally applicable non-discrimination laws  It is for members and management to determine the attributes of membership that will best ensure success of the organization	Under the Companies Act, a minimum of ten members or two producer institutions required to form a producer company <sup>57</sup>  Under the Rajasthan Societies Registration Act, a minimum number of seven members required to form a cooperative <sup>58</sup>	Minimum number of producers required to form a PC is 10, while there is no limit for maximum number of members which can be increased as per feasibility and need	State regulation allowing the members of an FPO to determine ideal size could help avoid the challenge other models have faced with regard to farmer participation and governance
<b>Promote Access to Markets</b>	FPOs must have the legal status and recognition to act as independent	FPOs established under the Companies Act enjoy legal status	DAC suggests that State Governments undertake the following steps to	State level regulations could also simplify issuance of

<sup>57</sup> Section 518C(1) of the Indian Companies Act “Any ten or more individuals, each of them being a producer or any two or more Producer institutions, or a combination of ten or more individuals and Producer institutions, desirous of forming a Producer Company having its objects specified in section 581B and otherwise complying with the requirements of this Part and the provisions of this Act in respect of registration, may form an incorporated Company as a Producer Company under this Act.”

<sup>58</sup> Section 1-B of Rajasthan Societies Registration Act “Any seven or more persons associated for any literary, scientific or charitable purpose or for any purpose as is described in Section 20 may, by subscribing their names to the memorandum of association and filing the same with the Registrar, form themselves into a society under this Act.

	<p>legal bodies representing the member farmers and transacting on their behalf</p>	<p>to transact independently, but other forms such as cooperative do not have such powers; FPO systems should allow for trade in seeds and other inputs, production of certified seed, and other activities</p> <p>Under the current Rajasthan APMC regulations, the provisions allow Market Committee licenses for direct purchase from ‘agriculturists’<sup>59</sup></p>	<p>support and strengthen FPOs:</p> <ul style="list-style-type: none"> <li>• Provisions for easy issuance of licenses to FPOs to trade in inputs (seed, fertilizer, farm machinery, pesticides etc.) for use of their members, as well as routing the supply of agricultural inputs through FPOs on par with cooperatives</li> <li>• Use FPOs as producers of certified seed, saplings, and other planting material and extend production and marketing subsidies on par with cooperatives</li> <li>• Through suitable amendments in</li> </ul>	<p>licenses to FPOs for trade in inputs (seed, fertilizer, farm machinery, pesticides, etc.) and increase opportunity for FPOs to channel high-quality agricultural inputs to farmers</p> <p>FPO Regulations could also further strengthen the ability under the APMC Act for direct sale of farm produce by FPOs at the farm gate</p>
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<sup>59</sup>Section 14 of Rajasthan APMC Act “The market committee may also grant License (a) for direct purchase from the agriculturists for the following purposes, namely:- (i) to processor for processing; (ii) to exporters for export of agricultural produce; (iii) for trade of agricultural produce of particular specification; and (iv) for grading, packing and transacting in other way by value addition of agricultural produce: “Provided that no sale or purchase shall be permitted under this clause within the market proper except for the purposes specified in sub clause (i) and (iv).”



			<p>the APMC Act, allow direct sale of farm produce by FPOs at the farm gate, through FPO owned procurement and marketing centers and for facilitating contract farming arrangements between FPOs and bulk buyers</p>	
<p><b>Protect Due Process</b></p>	<p>Anybody entrusted to adjudicate disputes that involve FPOs should be independent from promotion, supervision, and other oversight functions. They should be free to access courts and other existing tribunals, as well as to voluntarily enter arbitration</p>	<p>The Companies Act provides for settlement of disputes by conciliation or arbitration under the Arbitration and Conciliation Act (1996)<sup>60</sup></p> <p>Per the central Cooperative Societies Act, disputes must be first referred to the Registrar of Cooperative Societies</p>	<p>A Joint Committee comprised of the Managing Director SFAC or State Government Secretary (in case the work of FPO promotion has been directly contracted to State Governments) and CEO of Resource Institution (RI) will discuss disputes and resolve them amicably in the best interests of the project through</p>	<p>State level regulation could include autonomy to the FPO to choose and implement a dispute resolution mechanism with transparency and consensus of its members; this could be critical, particularly in the case of FPOs, which are local and community driven</p>

<sup>60</sup>Section 518ZO of Indian Companies Act “such dispute shall be settled by conciliation or by arbitration as provided under the Arbitration and Conciliation Act, 1996 (26 of 1996) as if the parties to the dispute have consented in writing for determination of such disputes by conciliation or by arbitration and the provisions of the said Act shall apply accordingly.”

	arrangements	(appointed by the state government), who may then direct arbitration and prescribe the process of dispute resolution <sup>61</sup>	consensus. In case a consensus cannot be reached, the procedure laid down under the Indian Arbitration Act will be followed for resolving the dispute.	organizations.  Dispute resolution platforms must be chosen taking into consideration their financial resources, level of access to courts and other case specific factors.
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Various government schemes are being introduced and implemented at the national level for promoting FPOs in India, some which could be strengthened through regulatory interventions.

- *Credit Assistance:* The national FPO Policy provides that the DAC and its designated agencies will work with the NABARD and other financial institutions to direct short- and medium-term credit for working capital and infrastructure investment needs of FPOs. The DAC will also work with all relevant stakeholders to achieve 100 percent financial inclusion for members of FPOs and link them to other government schemes such as the Kisan Credit Card Scheme. As a result, NABARD set up a “Producers Organization Development Fund” (PODF) to meet the needs of any registered producer organizations.<sup>62</sup>
- *Equity and Credit Guarantee Fund:* In 2013 two major initiatives to support Farmer Producer Organizations (FPOs) were announced as part of the 2013-14 Union Budget.<sup>63</sup> First, providing an equity base for FPOs by providing matching equity grants, for which an amount of Rs.50.00 crore was sanctioned. Second, setting up of a Credit Guarantee Fund to provide cover to banks which advance loans to FPOs without collateral, for which an initial corpus of Rs. 100.00 crore was sanctioned to SFAC.

<sup>61</sup> Section 75(3) of Rajasthan Cooperative Societies Act (1965) “If any question arises whether a dispute referred to the Registrar under this Section is a dispute touching the constitution management or the business of a co-operative society, the decision thereon of the Registrar shall be final and shall not be called in question in any court.”

<sup>62</sup>National Bank for Agriculture and Rural Development, available at <https://www.nabard.org/english/Financing.aspx>

<sup>63</sup> *Equity Grant and Credit Guarantee Fund Scheme for Farmer Producer Companies: Operational Guidelines*, Small farmers’ Agri-Business Consortium, Department of Agriculture and Cooperation, Government of India, available at <http://sfacindia.com/PDFs/Equity-Grant-Scheme-and-Credit-Guarantee-Fund.pdf>

- *Venture Capital Assistance Scheme for Agribusiness Development*.<sup>64</sup> To catalyze private investment in agribusiness and thereby provide assured market to producers for increasing rural income and employment, SFAC would provide venture capital to qualifying projects under this scheme. This financial assistance extends to farmer producer organizations.

Further, Section 581ZD of the Companies Act restricts the ability of FPOs to attract venture capital by stipulating that the share capital in a producer company can only be held by and transferred between members who are primary producers or producer institutions.<sup>65</sup> In addition, through an amendment to the Companies Act in 2013 (and an additional amendment in 2015), private companies have been brought under the purview of deposits compliance.<sup>66</sup> Earlier, private companies were allowed to take loans from relatives and shareholders, which were the major sources of funds apart from banks. Going forward, private companies shall have to adhere to strict norms for borrowing from any person other than directors, thereby increasing the compliance costs for small private companies and limiting the potential for companies like FPOs to raise capital locally.

FPOs also have a link with tenancy rules, as marginal farmers and agricultural laborers who are members of an FPO can enter into collective tenancy arrangements. The FPO management can provide institutional, legal and practical support by enabling them to enter into standardized and formal contracts. State level FPO regulations could formally adopt the provisions of the National

<sup>64</sup> *Equity Grant and Credit Guarantee Fund Scheme for Farmer Producer Companies: Operational Guidelines*, Small farmers' Agri-Business Consortium, Department of Agriculture and Cooperation, Government of India, available at <http://sfacindia.com/PDFs/Equity-Grant-Scheme-and-Credit-Guarantee-Fund.pdf>

<sup>65</sup> 581ZD of the Indian Companies Act

“(1) Save as otherwise provided in sub-sections (2) to (4), the shares of a Member of a Producer Company shall not be transferable.

(2) A Member of a Producer Company may, after obtaining the previous approval of the Board, transfer the whole or part of his shares along with any special rights, to an active Member at par value.

(3) Every Member shall, within three months of his becoming a Member in the Producer Company, nominate, in the manner specified in articles, a person to whom his shares in the Producer Company shall vest in the event of his death.

(4) The nominee shall, on the death of the Member, become entitled to all the rights in the shares of the Producer Company and the Board of that Company shall transfer the shares of the deceased Member to his nominee: Provided that in a case where such nominee is not a producer, the Board shall direct the surrender of shares together with special rights, if any, to the Producer Company at par value or such other value as may be determined by the Board.

(5) Where the Board of a Producer Company is satisfied that -

(a) any Member has ceased to be a primary producer; or

(b) any Member has failed to retain his qualifications to be a Member as specified in articles,

the Board shall direct the surrender of shares together with special rights, if any, to the Producer Company at par value or such other value as may be determined by the Board:

Provided that the Board shall not direct such surrender of shares unless the Member has been served with a written notice and given an opportunity of being heard.”

<sup>66</sup> Companies (Acceptance of Deposits) Amendment Rules, 2014 (further amended in 2015)

FPO Policy and provide for such arrangements, which would help to address the highly contested land fragmentation issue. Such state regulations could stipulate specific provisions on tenancy agreements entered into by FPO members along with powers and responsibilities of the administration to monitor and support such agreements.

***Regulatory Options:***

- **Develop State-level Regulatory Framework for FPOs:** State-level FPO Regulation that helps further formalize the FPO model and bring FPOs fully in line with best practices. Regulatory changes could include:
  - **Incorporating Key International Principles Aimed at Strengthening the Enabling Environment for Producer Organization Development**, such as clear registration of FPOs, equitable treatment, avoidance of conflicts of interest, protection of democratic member control, access to inputs and markets, and due process and dispute settlement;
  - **Implementing National Guidelines on the FPO Model**; and
  - **Undertaking Necessary Changes to the Current Regulatory Landscape**, such as removing the requirement in the Companies Act that an FPO have at least ten members (international best practices suggest that farmer aggregation models have discretion in setting membership targets).

These measures could be key to establishing a regulatory structure in Rajasthan that promotes and bolsters efficient farmer aggregation through FPOs and enhances the agricultural sector across the state (See also Table 5).

- **Formalize Tenancy Agreements:** Tenancy arrangements are often informal and difficult to enforce; this issue could be addressed through an FPO Regulation that formalize these arrangements and provide the FPO with a role in implementation of tenancy arrangements. Specific provisions on tenancy agreements entered into by FPO members, along with powers and responsibilities of the FPO administration to monitor and support such agreements, could help farmers better represent their rights in tenancy arrangements.
- **Link to Warehouse Receipts System:** FPOs can be effective channels through which farmers, especially smallholders can aggregate their produce, and access warehouse receipts systems. Through FPO and warehouse receipts regulations, they could be recognized as eligible operators of warehouses, beneficiaries to warehousing schemes,

and farmers' representatives in the WRS process. (Discussed in further detail in the following chapters)

- **Improve Regulatory Mechanisms for Investment in FPOs:** While policies exist to promote investment in FPOs, regulatory interventions could be designed to enhance opportunities for promoting and investing in FPOs, including:
  - **Fiscal Incentives such as Value Added Tax (VAT) refunds, Commercial and Sales Tax (CST) Rebates, and Other Fiscal Support Mechanisms** could be provided to retailers or wholesalers that procure directly from FPOs. Such incentives could encourage large-scale retailers to procure FPO-produced output directly, enhancing economic gains. State-level FPO regulation could stipulate such incentives and provisions
  - **Regulatory Amendment (to the Companies Act or creation of Rajasthan FPO Regulation) to Provide Clear Opportunity for Investment in FPOs,** including through venture capital. Transferability of shares is currently restricted under the Companies Act and investment from sources other than directors is also restricted for private companies like FPOs (as noted above) could have a significant impact. Rajasthan FPO Regulations that encourage investment without the intervention of public financial institutions or collateral requirements could enhance the ability of FPOs to access a broader and more diversified financial base.

### 3. Contract Farming

Contract farming is a fast emerging practice in Rajasthan. The first steps to develop this mechanism were taken in 2004 when the state government decided to put in place legislation to allow for contract farming and direct marketing of agricultural produce (under the Rajasthan APMC Act).<sup>67</sup> This initiative was intended to encourage private investment and promote employment opportunities in the farm sector. If well executed, contract farming could provide a means for insuring fair prices to farmers, providing farmers with high-quality inputs, and ensuring quality standards in the market.

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<sup>67</sup> Anil Sharma, *Law on Contract Farming in Rajasthan on the Cards*, Business Standard, May 12, 2004, available at [http://www.business-standard.com/article/economy-policy/law-on-contract-farming-in-rajasthan-on-the-cards-104051201065\\_1.html](http://www.business-standard.com/article/economy-policy/law-on-contract-farming-in-rajasthan-on-the-cards-104051201065_1.html) (last visited Jan 21, 2016)

Contract farming has been prominent in certain sectors (including grains, with companies like PepsiCo using contract farming arrangements),<sup>68</sup> and the state of Rajasthan has introduced contract farming into spice cultivation as well as horticulture. The 2010 annual action plan developed by the Rajasthan Horticulture Development Society under the aegis of the state government strove to encourage contract farming and engage the private sector in developing pre- and post-harvest infrastructure. Some of the focus areas mentioned in the report are:

- 1) Allowing direct purchase from farmers;
- 2) Allowing establishment of private mandis; and
- 3) Contract farming in horticultural crops<sup>69</sup>

In 2003, the central government issued the Model Agricultural Produce Marketing (Regulation) Act, a tool for the states to implement marketing reforms that has provisions for the registration of contract farming sponsors and the recording of contract farming agreements with the Agricultural Produce Marketing Committee (APMC) or a prescribed authority under the Act. The Model APMC Act outlines the contract farming agreement and model specifications that would be critical to any contract farming arrangement in the country and provides a model contract suggesting various terms and conditions to be adopted by parties (See Box 6).<sup>70</sup> It also contains protection of title or rights of the farmers over the land under such contracts and a dispute settlement mechanism (this mechanism exists in the model APMC Rules but not yet under Rajasthan's system). To help states in the formulation of rules in this regard, the Ministry of Agriculture has circulated a set of **Model APMC Rules** for adoption.

Rajasthan state has passed the Rajasthan Agricultural Produce Markets Act, 1961 ('Rajasthan APMC Act') and the Rajasthan Agriculture Produce Markets Rules, 1963 ('Rajasthan APMC Rules') and adopted various reforms recommended under the Model Act with successive

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<sup>68</sup> Seema Sindhu, *Buoyant Pepsi to Take Contract Farming to Troubled States*, Business Standard, June 11, 2010, available at [http://www.business-standard.com/article/companies/buoyant-pepsi-to-take-contract-farming-to-troubled-states-110061100004\\_1.html](http://www.business-standard.com/article/companies/buoyant-pepsi-to-take-contract-farming-to-troubled-states-110061100004_1.html)

<sup>69</sup> Rajasthan Horticulture Development Society, *Annual Action Plan 2009-10*, meeting presentation, Directorate of Horticulture, National Horticulture Mission, available at [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjJiYmD4NLMAhWDqB4KHR-cC2kQFggcMAA&url=http%3A%2F%2Fnhm.nic.in%2Fexecutive%2520meeting%2Fec2009-10%2Frajasthan2009-10.ppt&usg=AFQjCNGdIFiZnzCOBZ45PpHLxrbEsniX\\_Q&sig2=aSblnL26QDK-Nh9B5CdZrQ&bvm=bv.121658157,bs.1,d.dmo](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjJiYmD4NLMAhWDqB4KHR-cC2kQFggcMAA&url=http%3A%2F%2Fnhm.nic.in%2Fexecutive%2520meeting%2Fec2009-10%2Frajasthan2009-10.ppt&usg=AFQjCNGdIFiZnzCOBZ45PpHLxrbEsniX_Q&sig2=aSblnL26QDK-Nh9B5CdZrQ&bvm=bv.121658157,bs.1,d.dmo)

<sup>70</sup> *Addendum on Contract Farming Agreement and Its Model Specifications*, 2003, available at <http://agmarknet.nic.in/amrscheme/modelact.htm#Addendum>

amendments.<sup>71</sup> However, while the Rajasthan APMC Act and the Rajasthan APMC Rules have adopted contract-farming provisions covering registration, implementation, and enforcement of such agreements, guidelines or provisions that focus on the terms of the contract are absent. Rajasthan also has not yet adopted a model contract as outlined in the Model APMC Act. There are several areas of reform that could be undertaken to further enhance contract-farming opportunities, particularly in the horticulture and spices value chains.

***Box 6: Key Provisions of a Model Contract Farming Agreement***<sup>72</sup>

*a) Marketing:* How much of the product will be purchased, when, and at what price and quality? Must the grower deliver all of his product, a share, or set amount?

*b) Inputs and Technical Assistance:* How will inputs and technical assistance be delivered, how much, and at what price and quantity?

*c) Credit:* Will the grower receive credit in cash or kind? How much will he receive, at what interest rate? What will be the collateral?

*d) Production Management:* What technological procedures must the grower follow? How will the grower be monitored?

*e) Delivery and Grading:* Who will transport the harvest to the processor and how will quality be graded?

*f) Duration of the Contract*

*g) Price Determination Mechanism:* How must the price is to be calculated?

*h) Payment Provisions:* What are the procedures for paying farmers and reclaiming credit advances?

*i) Insurance Arrangements*

*j) Registration of Contract Farming Agreement:* Has the appropriate government agency been notified?

*k) Dispute Resolution Mechanism*

Dispute resolution mechanisms are particularly important, since, in the majority of cases, it is unlikely that a buyer will take legal action against a small holder for a breach of contract. The

<sup>71</sup> The Rajasthan Agricultural Produce Markets Act, 1961 amended in 1965, 1966, 1973, 1974, 1975, 1978, 1979, 1980, 1985, 1997, 2004, 2005, and 2008

<sup>72</sup> *Addendum on Contract Farming Agreement and Its Model Specifications*, 2003, available at <http://agmarknet.nic.in/amrscheme/modelact.htm#Addendum>

costs involved tend to be far in excess of the amount claimed, and legal action threatens the relationship between the buyer and all farmers in the local community, not just those against whom action is being taken. Action by a farmer against a buyer is similarly improbable, leading the parties to seek informal resolution, which may not be equitable given the different positions of the parties. As neither side is likely to seek a legal remedy through the courts, it is important that quick and easy ways of resolving disputes are identified in the agreement. Flexible dispute settlement mechanisms for the buyer, farmers and other interested parties will be critical to achieve an equitable and speedy solution.

The Rajasthan APMC Act and Rules do set up a dispute settlement authority (the APMC Market Committee),<sup>73</sup> with the appellate authority resting with the Director of the APMC Board.<sup>74</sup> These decisions have the force of a decree of a civil court and shall not be called in question in any civil court.<sup>75</sup> However, as also is true of a range of contracts enforced under the Indian Contract Act, dispute settlement provisions agreed upon by all parties would ensure that are efficient and meet the needs of all contracting parties. International best practices point out that having several stages outlined in the contract for the parties to work through the conflict can resolve the dispute equitably while avoiding the high costs of judicial proceedings. For example, a contract may specify the parties engage first in negotiation, then mediation, and finally arbitration if needed.<sup>76</sup> Under the current Rajasthan APMC Act, the decisions reached through mediation or arbitration would not be binding in court, leading to uncertainty and additional costs.

### ***Regulatory Options:***

- **Develop Annotated Standard/Model Contracts to Address Contract Terms:** Standardized rules and contracts, which include dispute settlement clauses and address the unique situation of FPOs and similar organizations, can be particularly helpful in expanding the use of contract farming. In particular, a standard contract should be

<sup>73</sup> Section 22N(4) of the Rajasthan APMC Act “If any dispute arises between the parties in respect of the provisions of the agreement either of the parties may submit an application to the market committee to arbitrate upon the disputes. The market committee shall resolve the disputes after giving the parties a reasonable opportunity of being heard.”

<sup>74</sup> Section 22N(5) of the Rajasthan APMC Act “The party aggrieved by the decision of the market committee under sub-section (4) may prefer an appeal to the Director within thirty days from the date of decision. The director shall dispose of the appeal after giving the parties a reasonable opportunity of being heard and the decision of Director shall be final.”

<sup>75</sup> Section 22N(6) of the Rajasthan APMC Act “The decision of the market committee under sub-section (4) and decision in appeal under sub-section (5) shall have force of the decree of a civil court and shall be enforceable as such and decretal amount shall be recovered as arrears of land revenue.

Section 22N(7) of the Rajasthan APMC Act “Disputes relating to and arising out of contract farming agreement shall be settled in accordance with the provisions made herein above and shall not be called in question in any civil court.”

<sup>76</sup> *Legal Guide to Contract Farming*. UNIDROIT, FAO, IFAD, 205 (2015).



annotated to explain terms, introduce key decision points, and highlight effective practices that could help reduce the risk of transactions both for the farmers and buyers. For example, standardized, clear provisions for production management, price, payments, and breach of contract could minimize side selling issues,<sup>77</sup> as producers may sometimes be drawn to extra-contractual sales (this may be more likely to occur when contracts are entered into through farmer aggregation models like FPOs, since the collection of payments may sometimes be prolonged and difficult through these organizations, making side selling for cash appealing to farmers). In addition, provisions that allow some flexibility in delivery give scope for farmers to keep some quantity for sale outside of the contract.<sup>78</sup> An annotated model contract (containing the applicable specifications included in the Model APMC Act, APMC Rules, APMC Regulations, Rajasthan APMC Act, and Rajasthan APMC Rules) that includes international best practices as guidelines would encourage formalized and transparent agribusiness transactions, thereby improving direct sale between farmers and private wholesalers/retailers and minimizing involvement of intermediaries to ensure optimum terms for farmer and buyer as well as reduce costs. By attaching an Annotated Model Contract as an addendum to the Rajasthan APMC Act, in the same way that the Model Act is attached to the Rajasthan APMC Act, it would apply to all other corresponding regulations.

- **Establish Flexible Dispute Settlement Mechanism:** While the Market Committee within the APMC framework acts as a dispute settlement body, the Act does not permit any alternative mechanism to resolve conflicts under contract farming agreements, such as arbitration or mediation. The outcome of an arbitration or mediation proceeding, for example, would not be recognized under the APMC Act, meaning that a party could take the same issue back to the Market Committee and initiate proceedings in the hope of securing a more favorable resolution, wasting additional resources for all parties involved, including the state and introducing uncertainty in the process, particularly for farmers. Providing flexibility in the Rajasthan APMC Act for the parties to choose their own mechanism for dispute settlement would lead to a formal resolution that is equitable, save both parties time and money, and align with international best practices.

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<sup>77</sup> Manas Chakrabarti, *An Empirical Study on Contract Farming in India*, International Journal of Informative and Futuristic Research, January 2015, available at <http://ijifr.com/pdfsave/03-02-2015855V2-E5-017.pdf>

<sup>78</sup> See International Institute for the Unification of Private Law (UNIDROIT), Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), “Legal Guide on Contract Farming,” Rome 2015.

## 4. Inputs (Seeds and Fertilizer)

### a) Seeds

It is estimated that seed quality accounts for 20 to 25 percent of productivity,<sup>79</sup> and a strong agricultural enabling environment that supports access to and accessibility of improved seed is fundamental to improving food security, reducing rural poverty, and supporting commercially successful agribusinesses. In India, a complex system of seed laws and regulations is implemented by central and state government regulators, and public companies are involved in the production, pricing, and sale of certified seed. A major share of vegetable seeds and planting materials for horticultural crops is imported, and the public sector is the dominant player in the domestic market.

Although both the public and private sectors are engaged in seed production, the total quantity of seeds produced in India is not sufficient to meet the country's increasing demand. Due to lack of quality field crop seeds, it is often difficult for farmers to adjust cropping patterns to accommodate seasonal horticultural crops. Only 20 percent of farmers' need for quality seeds is being met, with farmers themselves meeting 75 percent of their need through saved seeds. With respect to horticultural crops in Rajasthan, the Government's COEs are working to provide quality seeds to farmers. However, the standards of such seeds and their scalability are not supported by the regulatory system.

The National Seeds Policy (2002) sought to reduce the direct involvement of government in seed production and marketing and to actively encourage the private sector to engage in research and development of new varieties. However, implementing this change has proven difficult due to the heavily subsidized seed market in India. Although the private sector plays a significant role in the seed industry, the main focus of private seed companies has been on high-value, low-volume seeds, while the market for low-value, high-volume seeds is dominated by public sector seed corporations.<sup>80</sup> Effective cooperation and coordination between the public and private sectors would allow farmers to better access quality seed and increase productivity and livelihoods in the agricultural sector. The Seeds Bill, 2004 (as amended 2010) would create a new legislative authority on seeds and may be the best platform for implementation for changing the seed system.<sup>81</sup>

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<sup>79</sup> *Seed Technology*, JSS Krishi Vigyan Kendra, Suttur, available at <http://jsskvk.in/SeedTechnology.aspx>.

<sup>80</sup> Foreign Agricultural Service. *Indian Seed Industry Under Transition*. U.S. Department of Agriculture, GAIN Report Number IN3125, (December 2003), <http://apps.fas.usda.gov/gainfiles/200312/146085513.pdf>.

<sup>81</sup> As mentioned in an earlier footnote, the Seeds Bill was amended in 2010, which changed the title of the Bill to the "Seeds Bill, 2010." This Report refers to the bill as the Seeds Bill, 2004 (as amended) or simply the Seeds Bill.

India regulates seeds all along the value chain, with rules pertaining to variety registration; certification; processing, storage, and marketing; sale; and cross-border trade. The industry is primarily regulated by the Seeds Act, 1966 (as amended) and Seeds Rules, 1968 (as amended). The Seeds Bill, 2004 (as amended) would replace the Seeds Act, and some relevant provisions are referenced throughout this section.<sup>82</sup> Other important laws and regulations include:

- Seeds (Control) Order, 1983 (as amended), which regulates seed dealers;<sup>83</sup>
- Plant Variety Protection and Farmers' Right Act, 2001 and corresponding Rules and Regulations (as amended), which provides variety protection (intellectual property protection) for breeders, including farmers and farmers' organizations;<sup>84</sup>
- Plants, Fruits and Seeds (Regulation of Imports in India) Order, 1989 (as amended), which covers importation requirements and procedures of seed and propagating material;<sup>85</sup> and
- Plant Quarantine (Regulation of Import into India) Order, 2003 (as amended); which further regulates import of seed and propagating material<sup>86</sup>

Other relevant policies, laws, and regulations covering the industry include the National Seed Policy of 1988 and 2002; Destructive Insect and Pest Act, 1914; Biodiversity Act 2002; Essential Commodities Act, 1955; Geographical Indication of Goods Act, 1999; Consumer Protection Act, 1986; and Environment Protection Act, 1986.

The Central Seed Committee (CSC) was established under the Seeds Act, 1966 (as amended) and is comprised of members nominated by the central government. Its members are largely drawn from the public sector, with four chairs reserved for the private sector and discretion for the CSC to nominate up to nine additional private sector members.<sup>87</sup> The CSC is tasked with overall responsibility for implementing seed policies and rules and advising the central government on matters related to seed.

The Plant Varieties and Farmers Rights (PVP) Authority, headed by the Plant Varieties Protection (PVP) Registrar, was established under the Protection of Plant Varieties and Farmers' Rights Act, 2001. The PVP Authority is tasked with registration of plant varieties and farmers'

<sup>82</sup> The Seeds Act was amended in 1972 and the Seeds Rules was amended in 1973, 1974, 1981, 2014

<sup>83</sup> The Seeds (Control) Order was amended in 2006 and 2014

<sup>84</sup> The Rules were amended in 2012

<sup>85</sup> The Order was amended in 2006

<sup>86</sup> The Order was last amended in 2016

<sup>87</sup> The Seeds (Amendment) Act, 1972, §8

varieties, issuing compulsory licenses as needed, collecting data about the plant varieties, and maintaining the National Register of Plant Varieties. In addition, the PVP Authority administers a National Gene Fund, hears complaints related to protected varieties, and supports access of public genetic material through Material Transfer Agreements.

The Plant Protection Advisor and EXIM Committee regulate the import and export of seed and propagating material. The EXIM Committee falls under the Seeds Division of the Ministry of Agriculture and is responsible for issuing import and export permits. The Plant Protection Advisor regulates seed imports and related quarantine periods.

The National Seed Corporation (NSC) and State Seed Corporations (SSCs) are public companies engaged in the production, distribution, and sale and/or export of certified seed, with a focus on oil seeds, pulses, and hybrids (which includes vegetables and spices like coriander).<sup>88</sup> Where SSCs do not have a presence, this function is taken up by the state Departments of Agriculture.<sup>89</sup> The NSC also certifies seed and has an International Seed Testing Association (ISTA) accredited laboratory. Under the Seeds Policy 2002, the NSB will accredit organizations to conduct seed certification, including self-certification.<sup>90</sup> This dual public-private role of the NSC, which operates as both seed industry regulator and participant, may cause tension and mistrust with private sector participants. Under the Seed Policy 2002, India seeks to restructure the State Farms Corporation of India (a public company engaged in seed breeding, production, and distribution) and NSC.<sup>91</sup>

The NSC also is responsible for establishing an adequate system of quality control, inspection, scientific exploration, storage and processing, marketing of seeds, and maintenance of a seed bank for the South Asian Association for Regional Cooperation (SAARC), an economic and political organization comprised of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The NSC and SSCs seek to ensure that seeds for major crops are available at accessible prices to farmers, as well as place a check on private seed companies seeking to dominate the market.<sup>92</sup>

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<sup>88</sup> Seednet India Portal. "Indian Seed Sector." Ministry of Agriculture and Farmers Welfare, Government of India. <http://seednet.gov.in/material/indianseedsector.htm>.

<sup>89</sup> *Role of Public and Private Sector*, "Indian Seed Sector," Seednet, n.d., <http://seednet.gov.in/aterial/IndianSeedSector.htm>

<sup>90</sup> Seeds Policy 2002, ¶3.6

<sup>91</sup> Seeds Policy 2002, ¶¶ 2.10

<sup>92</sup> Foreign Agricultural Service. *Indian Seed Industry Under Transition*. U.S. Department of Agriculture, GAIN Report Number IN3125, (December 2003), <http://apps.fas.usda.gov/gainfiles/200312/146085513.pdf>.

### Variety Release and Registration

Variety registration is one of the first stages in the seed value chain and establishes the process for making new, quality seed varieties available in the market. Variety registration is a fundamental aspect of the seed enabling environment, because this stage determines how quickly improved seeds can reach the hands of farmers. While the government has an interest in protecting plant and public health, it must be balanced with the need to make available improved varieties, which impact food and economic security. Lengthy and complex registration processes are difficult and expensive for breeders to comply with, limiting accessibility and availability of quality varieties in the market for consumers, especially smallholder farmers.

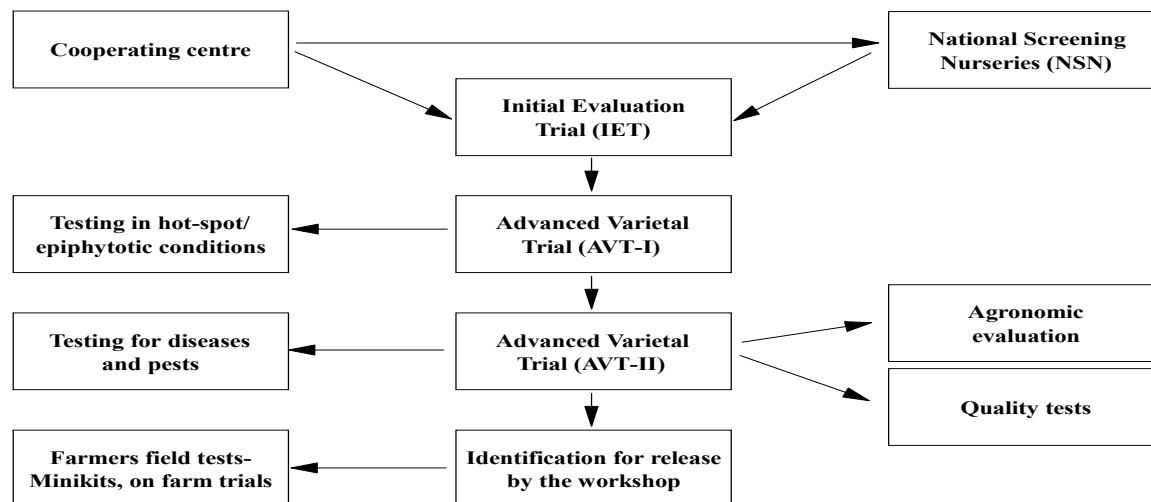
India relies on a notification system for varietal release whereby applications for notification of coriander and citrus can be taken up by the CSC's Sub-Committee on Crop Standards, Notification, and Release of Varieties for Horticultural Crops<sup>93</sup> or the State Seed Sub-Committee on Horticultural Crops. A minimum of three seasons of multi-location trials and value for cultivation and use (VCU) testing is conducted by the All India Coordinated Crop Improvement Projects (AICCIP) according to crop specific specifications and varieties are identified for single or multi-state identification at AICCIP workshops (See Figure 3).<sup>94</sup> VCU testing helps ensure quality, and tests for characteristics concerning yield stability and yield reaction in specific zones, but the tests can be expensive, especially for smallholder farmers, and may need to be conducted numerous times to get accurate results as the tests are highly sensitive to weather and environmental conditions.

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<sup>93</sup> Agricultural crops are reviewed by the CSC's Sub-Committee on Crop Standards, Notification, and Release of Varieties for Agricultural Crops.

<sup>94</sup> Virk, D.S. *Seeds of Choice: Making the Most of New Varieties for Small Farmers*, ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

**Figure 3: Varietal Testing**



Source: Virk, D.S. *Seeds of Choice: Making the Most of New Varieties for Small Farmers* (1998)

The sub-committee reviews the applications from the sponsoring agency (an agricultural university or research institute) and determines whether to recommend a variety for notification to the central government.<sup>95</sup> In reviewing applications, the sub-committee may ask a breeder to address discrepancies or provide presentations before recommending the variety.<sup>96</sup> Approved varieties are notified in the Official Gazette of India,<sup>97</sup> and generally become an asset of the Indian Government.<sup>98</sup> They may be automatically released and notification signals they are eligible for certification (described below).<sup>99</sup> However, individual states typically require additional testing to be performed before the variety may be “formally recommended.”<sup>100</sup>

<sup>95</sup> Virk, D.S., *Seeds of Choice: Making the Most of New Varieties for Small Farmers*, ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

<sup>96</sup> Minutes of the 23<sup>rd</sup> Meeting of Central Sub-Committee on Crop Standards Notification and Release of Varieties for Horticultural Crops Held Under the Chairmanship of Dr. T. Janakiram, Assistant Director General (Hort.) on 7<sup>th</sup> April 2015 at Indian Institute of Horticultural Research, Bengaluru, available at <http://seednet.gov.in/PDFFILES/Minutes%20of%20the%2023rd%20Meeting%20of%20Central%20Sub-Committee%20on%20Crop%20Standard%20Notification%20and%20Release%20of%20varieties%20for%20Horticultural%20crops.pdf>

<sup>97</sup> Seeds Act, 1966, §5

<sup>98</sup> *Guidelines for Release, Release/Notification, Provisional Notification and De-notification of Cultivars*, Seednet India, Ministry of Agriculture & Cooperation and Farmers Welfare, Government of India, available at [http://seednet.gov.in/PDFFILES/Procedure\\_for\\_release\\_of\\_new\\_variety.pdf](http://seednet.gov.in/PDFFILES/Procedure_for_release_of_new_variety.pdf)

<sup>99</sup> Virk, D.S., *Seeds of Choice: Making the Most of New Varieties for Small Farmers*, ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

<sup>100</sup> Virk, D.S., *Seeds of Choice: Making the Most of New Varieties for Small Farmers*, ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

Notification is important because only notified seed is covered under the Seeds Act, and thus benefits from enforcement of quality assurance rules.<sup>101</sup> Before sale, notified varieties must be properly labeled and conform to minimum limits on germination and purity,<sup>102</sup> however, there are no statutory requirements pertaining to release itself.<sup>103</sup> Private sector developed varieties aren't required to be "released centrally or by state committees, and private sector participation in the AICCIP trials is optional."<sup>104</sup>

Although notification occurs at the central level, some varieties may be restricted to certain regions or states,<sup>105</sup> for example "Pratap Raj Dhania-1 (RKD-18)," a variety of coriander, is authorized for notification in Rajasthan only.<sup>106</sup> If a variety is only notified in one state, it is considered a state variety and the sponsoring agency provides an application for release to the State Seed Sub-Committee for consideration.<sup>107</sup> In Rajasthan, this body is called the State Seed Sub-Committee for Agricultural and Horticultural Crops. State varieties may be centrally notified after the Central Sub-Committee accepts an application.<sup>108</sup>

However, registration requirements are more stringent under the National Seeds Policy 2002 and the Seeds Bill. Under the National Seeds Policy 2002, all varieties must be registered except vegetable and ornamental crop varieties, which need only a "breeders declaration."<sup>109</sup> Even more restrictive, the Seeds Bill requires all seed to be registered, without a carve-out for vegetable and ornamental crops. Registration under the Bill is valid for 10 years for annual or biannual crops

<sup>101</sup> Virk, D.S., *Seeds of Choice: Making the Most of New Varieties for Small Farmers*, ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

<sup>102</sup> Seeds Act, 1966, §7

<sup>103</sup> *Guidelines for Release, Release/Notification, Provisional Notification and De-notification of Cultivars*, Seednet India, Ministry of Agriculture & Cooperation and Farmers Welfare, Government of India, available at [http://seednet.gov.in/PDFFILES/Procedure\\_for\\_release\\_of\\_new\\_variety.pdf](http://seednet.gov.in/PDFFILES/Procedure_for_release_of_new_variety.pdf); See also, Joughin, James. *The Political Economy of Seed Reform in Uganda: Promoting a Regional Seed Trade Market*. Africa Trade Practice Working Paper Series No. 3, The World Bank (January 2014), available at <https://openknowledge.worldbank.org/bitstream/handle/10986/17604/839040NWP0Afrino30382116B00PUBLIC0.pdf;sequence=1>; *Agribusiness Regulation and Institutions (Agri) Index*. Enabling Agricultural Trade (EAT) project, U.S. Agency for International Development (January 2015), available at <http://eatproject.org/docs/EATAGRIFinalReport.pdf>.

<sup>104</sup> Virk, D.S., *Seeds of Choice: Making the Most of New Varieties for Small Farmers*, ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

<sup>105</sup> Seeds Act, 1966, §5

<sup>106</sup> See Ministry of Agriculture (Department of Agriculture and Co-operation) Notification, Serial Number 47 in Table "Pratap Raj Dhania-1 (RKD-18)," Gazette of India, Extraordinary, Part II, Section 3, Subsection (ii), New Delhi, (28 January 2015), available at [http://seednet.gov.in/SeedGO/2015/SO%20268\(E\)-Seed%20Variety%20Notification.pdf](http://seednet.gov.in/SeedGO/2015/SO%20268(E)-Seed%20Variety%20Notification.pdf).

<sup>107</sup> *Guidelines for Release, Release/Notification, Provisional Notification and De-notification of Cultivars*, Seednet India, Ministry of Agriculture & Cooperation and Farmers Welfare, Government of India, n.d., [http://seednet.gov.in/PDFFILES/Procedure\\_for\\_release\\_of\\_new\\_variety.pdf](http://seednet.gov.in/PDFFILES/Procedure_for_release_of_new_variety.pdf)

<sup>108</sup> Virk, D.S., *Seeds of Choice: Making the Most of New Varieties for Small Farmers*, ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

<sup>109</sup> National Seeds Policy, 2002, ¶3.2.1

and 12 years for long duration perennial crops, with the option for reregistration.<sup>110</sup> The Seeds Bill would permit registration of transgenic varieties with approval, establish State Seed Committees to advise the Central Seed Committee on local and regional registration matters, and establish a Registration Sub-Committee of the Central Seed Committee.<sup>111</sup> It prohibits the registration of varieties that use terminator technology or genetic use restriction technology, which cause the subsequent generation of seed to be sterile.<sup>112</sup>

Under the National Seeds Policy 2002, in order to register a variety, the applicant must file an application and fee with the NSB. Under the Seeds Bill, 2004 (as amended 2010), the Registration Sub-Committee receives and approves applications. Like the Seeds Act, 1966, the National Seeds Policy 2002 requires a minimum period of three seasons of multi-location performance trials and VCU testing, but the Policy provides that some crops may have specified alternate lengths of trials. Testing is conducted in central government or state government approved laboratories. Under the Seeds Bill, the Registration Sub-Committee may accredit public sector agricultural research centers and universities to conduct the testing.

If approved for registration, the variety is added to the National Seeds Registrar and samples are kept with the National Gene Bank. The National Seeds Policy 2002, also contains an exception for farmers that allows them to sell their farm seed or planting material on their premises or in the local market so long as the material is not branded, which would be codified in the Seeds Bill. The Seeds Bill allows for a process by which farmers can claim compensation from dealers for poor performance by a variety through a formal system comprised of a compensation committee and appellate proceedings.<sup>113</sup>

### Plant Breeders' Rights

Intellectual property rights (IPR) frameworks for seed systems can shape decisions in plant breeding, basic seed production, and marketing of seed, impacting both the quality of seed available and access to that seed. Under the Plant Variety Protection (PVP) and Farmers' Rights Act, 2001, India has implemented a *sui generis* system for plant variety protection, as required under the WTO Trade Related Aspects of Intellectual Property (TRIPS) Agreement. Section 15 of the PVP Act calls for registered varieties to be novel, distinct, uniform, and stable. Applicants

<sup>110</sup> Seeds Bill, 2004 (as amended 2010), §13, available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>

<sup>111</sup> Seeds Bill, 2004, §§15, 11, 7, respectively. Available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>

<sup>112</sup> Seeds Bill, 2004, §18 Available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>

<sup>113</sup> Seeds Bill, 2004 (as amended 2010), § 20, available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>. See also, "The Seeds Bill 2004," PRS Legislative Research, n.d., available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>; Madhavan, M.R. and Anyal, Kaushiki. *Legislative Brief: The Seeds Bill*. PRS Legislative Research, (May 2006), available at [http://www.prsindia.org/uploads/media/1167468389/legis1167477737\\_legislative\\_brief\\_seeds\\_bill.pdf](http://www.prsindia.org/uploads/media/1167468389/legis1167477737_legislative_brief_seeds_bill.pdf).



may be farmers or farmers groups, and farmers may receive a reward from the Gene Fund if engaged in the conservation and improvement of landraces and wild plant relatives.<sup>114</sup> Once a certificate of registration is issued, it is valid for nine years for tree crops and six years for other crops. The certificate may be reviewed and renewed, but the overall term of coverage for the intellectual property may not exceed 18 years from the date of registration of the variety in the case of trees, 15 years in the case of extant varieties dating from the date of notification, and 15 years in all other cases dating from the date of notification and registration.<sup>115</sup> The certificate “shall confer an exclusive right on the breeder or his successor, agent or licensee, to produce, sell, market, distribute, import or export the variety.”<sup>116</sup> A breeder must deposit seeds or propagating material with the National Gene Bank (having a national gene bank is an international best practice).

The PVP Act allows for seed saving and permits a farmer to “save, use, sow, re-sow, exchange, share or sell his farm produce including seed of a variety protected under this Act as long as the farmer does not sell branded seed of a protected variety,” meaning the seed was put in a package or container and labeled as a protected variety.<sup>117</sup> In addition, villages and local communities may make a claim that they have contributed significantly to a registered variety. If the PVP Authority is satisfied with the report, then it will notify the registered breeder, who may make objections, and the community may be entitled to compensation.<sup>118</sup>

Finally, the PVP Act provides that any interested person may apply to the PVP Authority alleging that the seed or propagating material of a protected variety is required by the public and unavailable at a reasonable price may request a compulsory license to produce, distribute, and sell that variety.<sup>119</sup> The request can be made any time after three years from the time the certificate of registration was issued, and if approved, the compulsory license will be granted for a period determined on a case-by-case basis.<sup>120</sup>

### Certification

How a government regulates seed certification, which is intended to ensure the quality of improved seed on the market, has a significant impact on the supply of high-quality seed available and its accessibility to farmers. In addition to centralized certification, different types of seed certification schemes exist, with different roles for the public and private sectors. While

<sup>114</sup> Protection of Plant Varieties and Farmers’ Rights Act, 2001, §16, 39(i, iii)

<sup>115</sup> Protection of Plant Varieties and Farmers’ Rights Act, 2001, §24

<sup>116</sup> Protection of Plant Varieties and Farmers’ Rights Act, 2001, §28

<sup>117</sup> Protection of Plant Varieties and Farmers’ Rights Act, 2001, §39(iv)

<sup>118</sup> Protection of Plant Varieties and Farmers’ Rights Act, 2001, §41(1-3)

<sup>119</sup> Protection of Plant Varieties and Farmers’ Rights Act, 2001, §47

<sup>120</sup> Protection of Plant Varieties and Farmers’ Rights Act, 2001, §47, 50

some seed certification schemes are heavily centralized within governments, others allow for quality declarations without such a heavy process (such as Quality Declared Seed (QDS)) and others shift the burden of verifying seed quality to the seed producer or seller entirely (such as “truth in labeling” schemes).

In India, the private sector may sell truthfully labeled seed, which is not considered a lower class than certified seed.<sup>121</sup> India also provides for voluntary certified seed certification for notified varieties only, and recognizes three seed generations: breeder, foundation (stages I and II allowed), and certified seeds (not to exceed three generation stages beyond foundation stage I). Certification in India is conducted by seed certification agencies, which may be established under the state as autonomous. In Rajasthan, the State Seed and Organic Production Certification Agency became an autonomous body in 1977, and its Governing Board is comprised of public sector members and two private sector members from the seed industry appointed by the Board members.<sup>122</sup> Headquartered in Jaipur, a regional office also exists in Kota. Testing is carried out in International Seed Testing Association (ISTA) accredited laboratories and per Organisation for Economic Cooperation and Development (OECD) guidelines to facilitate trade, both of which follow international best practices.

To register certified seed, a form and fee must be submitted to the seed certification agency, which then confirms the eligibility of the variety and source of seed used for planting and subjects the seed to a minimum number of field inspections,<sup>123</sup> according to certain crop-specific requirements that are available on the State Seed and Organic Production Certification Agency website.<sup>124</sup> Samples are taken for analysis according to the procedures identified by the agency. Testing is conducted by an NSC-accredited Indian Council of Agricultural Research (ICAR), State Agricultural Universities (SAUS), or public-private organizations, including non-governmental organizations and sponsored breeders recognized by State Seed Corporations (SSCs). In addition, the NSC, SSCs, State Farms Corporation of India (SFCI), and Krishi Vigyan Kendras (KVKs) certify seed.<sup>125</sup> The Central Seed Laboratory works with the State Seed Laboratories to ensure uniform test results.<sup>126</sup> The Seeds Policy 2002 requires seed testing facilities to conform to International Seed Testing Association (ISTA) and Organization for Economic Cooperation and Development (OECD) guidelines and permits State Governments to

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<sup>121</sup> Virk, D.S. *Seeds of Choice: Making the Most of New Varieties for Small Farmers*. ITDG Publishing, 1998, available at <http://r4d.dfid.gov.uk/PDF/Outputs/RLPSRbookchap6.pdf>

<sup>122</sup> “RSSOPCA Introduction,” Rajasthan State Seed and Organic Production Certification Agency Website, May 2016, <http://rssopca.in/AboutUs/Introduction>

<sup>123</sup> The Seeds Rules 1968, §6(d)

<sup>124</sup> “Appellate Authority,” Rajasthan State Seed and Organic Production Certification Agency Website, May 2016, <http://rssopca.in/SeedCertifications/AppellateAuthority>

<sup>125</sup> Foreign Agricultural Service. *Indian Seed Industry Under Transition*. U.S. Department of Agriculture, GAIN Report Number IN3125, (December 2003), <http://apps.fas.usda.gov/gainfiles/200312/146085513.pdf>.

<sup>126</sup> The Seeds Rules 1968, §5

declare government and/or non-government sector laboratories as a State Seed Testing Laboratory.<sup>127</sup> The Seeds Bill, 2004 (as amended 2010), limits accredited certification agencies to government entities designated by the Central Seeds Committee in consultation with the state seed committee or state government.<sup>128</sup>

Under the Seeds Act 1966 (as amended), certification is granted as long as the minimum standards are met and the application and fee are in order. Applicants may appeal a denial of certification through a process set out by individual states.<sup>129</sup> In Rajasthan, appeals are taken to a special committee comprised of the Secretary of Agriculture, Director of Agriculture, and Director of Seed Certification as established by the Government of Rajasthan.<sup>130</sup> Certification can be revoked if an essential fact was found to be misrepresented or the applicant failed to comply with conditions associated with certification.<sup>131</sup>

Under the National Seeds Policy 2002, India seeks to support the supply of seed to meet market demand through the Seed Village Scheme, which will provide farmers with foundation seed for multiplication and encourage seed storage at the village level.<sup>132</sup> In addition, the Policy calls for a review of the Seed Crop Insurance Scheme and permits access to breeder seed by the private sector for purposes of seed production.<sup>133</sup>

### *Processing, Storage, Distribution, Marketing and Sale of Seed*

In Rajasthan, the State Seed and Organic Production Certification Agency also regulates seed processing and storage. Processing plants must be registered and can do so by submitting a registration form and fee with the Agency and meeting minimum standards. The registration must be renewed annually through the submission of a request for renewal and accompanying fee.<sup>134</sup> The Seeds Bill also requires horticulture nurseries to be registered with the state.<sup>135</sup>

<sup>127</sup> The Seeds Policy 2002, §3.7

<sup>128</sup> Seeds Bill, 2004 (as amended), §27, available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>

<sup>129</sup> Seeds Act, 1966, §11

<sup>130</sup> “Field Counts,” Rajasthan State Seed and Organic Production Certification Agency Website, May 2016, <http://rssopca.in/SeedCertifications/FieldInspection>

<sup>131</sup> Seeds Act, 1966, §10

<sup>132</sup> National Seeds Policy 2002, ¶ 2.10; see also National Mission on Seeds, Department of Agriculture, Cooperation, and Farmers Welfare (available at [http://agricoop.nic.in/Admin\\_Agricoop/Uploaded\\_File/national1342016.pdf](http://agricoop.nic.in/Admin_Agricoop/Uploaded_File/national1342016.pdf))

<sup>133</sup> National Seeds Policy 2002, ¶2.4

<sup>134</sup> “Approval of Seed Processing Units,” Rajasthan State Seed and Organic Production Certification Agency Website, May 2016, <http://rssopca.in/SeedCertifications/Processing>

<sup>135</sup> Seeds Bill, 2004, §21- 23, available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>. See also Madhavan, M.R. and Anyal, Kaushiki. *Legislative Brief: The Seeds Bill*. PRS Legislative Research, (May 2006), available at [http://www.prsindia.org/uploads/media/1167468389/legis1167477737\\_legislative\\_brief\\_seeds\\_bill.pdf](http://www.prsindia.org/uploads/media/1167468389/legis1167477737_legislative_brief_seeds_bill.pdf).

A list of producers and processing plants is maintained by the Agency, which is available on their website. Under the Seeds Bill, seed producers and processors must periodically submit information on the quantity and type of varieties produced and/or processed to the central and state governments.<sup>136</sup> The Agency also has issued general principles and measures for seed storage and instructions related to stacking, and it must approve packing materials for certified and foundation seed classes.<sup>137</sup>

Seed dealers, or any person selling, exporting, or importing seed (including agents of dealers), must be licensed pursuant to the Seed Control Act (1983). Licenses may be obtained by submitting an application and fee, and if granted, a license is valid for three years and may be renewed.<sup>138</sup>

Seed inspectors are appointed by state governments and are tasked with ensuring seed sold on the market complies with applicable laws and regulations. They may enter and search any premises with seed and order stock not be sold or disposed of or seize seed stock or other material items if the inspector has reasonable belief an offense has taken place. Under the Seeds Bill, 2004 (as amended 2010), inspectors no longer may enter and search a premises without written authorization.<sup>139</sup> The Seeds Act, 1966 (as amended) also permits the inspector to conduct random spot searches by taking a sample of registered seed from anyone selling or purchasing it. The seed sample or seized seed lot is sent to the local seed analyst, appointed by the state government. Seed inspectors must follow procedures set forth in the Seeds Act, 1966 in the event seed is confiscated. Seed Analysts must share their reports with the Central Laboratory, in accordance with the Seeds Act, 1966.<sup>140</sup>

Under the National Seeds Policy 2002, a variety must first be registered in order to distribute and market seed for the purposes of planting.<sup>141</sup> It also seeks to establish an electronic National Seeds Grid that provides information on seed varieties such as availability, production agencies and their location, distribution, preference of farmers at the district level, and quality.<sup>142</sup>

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<sup>136</sup> Seeds Bill, 2004 (as amended), §21, available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>

<sup>137</sup> “Storage,” Rajasthan State Seed and Organic Production Certification Agency Website, May 2016, <http://rssopca.in/SeedCertifications/Storage>; “Packing of Seed,” Rajasthan State Seed and Organic Production Certification Agency Website, May 2016, <http://rssopca.in/SeedCertifications/SeedPacking>

<sup>138</sup> The fee is 1,000 rupees under the 2014 Amendment to the Seeds (Control) Act. Available at <http://seednet.gov.in/PDFFILES/Seed%20Legislation.pdf>

<sup>139</sup> Seeds Bill, 2004 (as amended), §35, available at <http://www.prsindia.org/billtrack/the-seeds-bill-2004-104/>

<sup>140</sup> Seeds Act, 1966, §3(1), (9)

<sup>141</sup> National Seeds Policy 2002, §4.7

<sup>142</sup> National Seeds Policy 2002, §4.5, 5.7

### *Trade of Seeds*

Import and export of seed is regulated by the central government. Both imported and exported seed must adhere to appropriate standards and be properly labeled,<sup>143</sup> and both the import and export of seed require permits.

Plant and seed importation and quarantine is regulated by the Plants, Fruits and Seeds (Regulation of Imports in India) Order, 1989 and the Plant Quarantine Order 2003. Importers of seed and seed propagating material must have a phytosanitary certificate issued by an authorized officer in the country of origin and an import permit from the EXIM Committee under the Ministry of Agriculture's Seeds Division.<sup>144</sup> Import permits are valid for up to six months, and applications are subject to approval by the EXIM Committee and sent to the Directorate General of Foreign Trade (DGFT) and Plant Protection Advisor (PPA) for further action if needed.<sup>145</sup> The Central Government has discretion to relax the conditions for an import permit or phytosanitary certificate for any consignment if it is in the public's interest.<sup>146</sup> Seeds of fruit, like citrus, require a phytosanitary certificate that makes additional declarations stating they are free from specific pests as set out in Schedule II of the Order.

Upon entry, plants are subject to inspection by inspectors of the Plant Protection Advisor, who may require a lot to be quarantined for a certain period of time in accordance with guidelines set forth by the Plant Protection Advisor and in accordance with the Export/Import Policy on Seed and Planting Material and Plant Quarantine Order 2003. Under the National Seeds Policy 2002, a small sample of imported seed must be provided to the National Gene Bank.<sup>147</sup>

To export seed and plant material, an export permit from the EXIM Committee must be received, which essentially follows the same process. Any seed or propagating material exported from India must adhere to standards for minimum limits of germination and purity.<sup>148</sup> The National Seeds Policy 2002 calls for establishing and strengthening the Seeds Export Promotion Zones, a database with information on export potential in international markets and the impact of exports on domestic seed availability, and development of a policy that will increase India's share of global seed export to 10 percent by 2020.<sup>149</sup>

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<sup>143</sup> Seeds Act, 1966, §16

<sup>144</sup> Plants, Fruits and Seeds (Regulation of Imports in India) Order, 1989, §16; Export/Import Policy on Seed and Planting Material

<sup>145</sup> Export/Import Policy on Seed and Planting Material

<sup>146</sup> Plants, Fruits and Seeds (Regulation of Imports in India) Order, 1989, §16

<sup>147</sup> National Seeds Policy 2002, §7.4

<sup>148</sup> Seeds Act, 1966, §17

<sup>149</sup> National Seeds Policy 2002, §8.2-8.5

**Regulatory Options:**

- **Encourage Private Investment in Seed Production:** Given the involvement of the public sector and public institutions in the seed value chain, some systemic challenges could be addressed by facilitating involvement of the private sector in quality seed production and direct sale without the involvement of national or state seed agencies acting as intermediaries. The National Seeds Policy 2002 provides State Governments with flexibility to establish their own systems for implementing the Seeds Act.<sup>150</sup> State policies that encourage private investment, training support, data collection, trend analysis for demand forecasting, and application of quality assurance processes, alongside possible tax exemptions for owners of labs and facilities and other investment incentives could play a role,<sup>151</sup> as could streamlining regulatory processes, such as the state variety notification and release process which could be reformed to require only one season of VCU testing and acceptance of VCU data by accredited private sector organizations.
- **Improve Seeds Bill:** This Seeds Bill provides a promising vehicle for change, and it already contains a number of positive elements, including protection of farmers' rights. However, it also tends to add additional layers of regulation. For example, under the Seeds Bill, new variety registration is required for all varieties instead of just those notified by the government. An exception might be granted for vegetables and ornamental crops, as laid out in the National Seeds Policy, 2002. In addition, fruits or at least some varieties could be made exempt. While there is insufficient information on the proposed variety registration process, the National Seeds Policy, 2002 states that VCU testing should be undertaken for three seasons, which decreases availability and access to improved quality seed and is well above international best practices. For example, South Africa requires only one season of DUS testing (and has no VCU testing requirement for registration), and with more streamlined requirements like these, a new variety could be registered as quickly as within six months from the time of application. Likewise, the National Register of Seeds should be available online and frequently updated to reflect the many new varieties entering the market in advance of cropping seasons.<sup>152</sup> The Seeds Bill also should be amended to allow for increased private sector involvement by accrediting companies to self-certify and provide third party accreditation for the private or nongovernmental organizations. This involvement can ease the strain on government

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<sup>150</sup> National Seeds Policy 2002, §5.9

<sup>151</sup> These suggestions are in line with the National Seeds Policy 2002

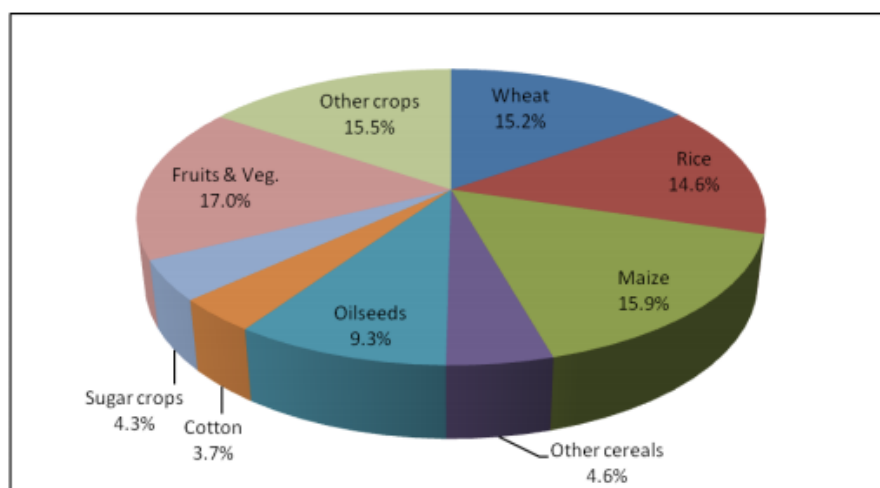
<sup>152</sup> *Enabling the Business of Agriculture 2016: Comparing Regulatory Good Practices*, World Bank Group, (2016), available at <http://eba.worldbank.org/~media/WBG/AgriBusiness/Documents/Reports/2016/EBA16-Full-Report.pdf>.

resources and increase the amount of good quality seed available on the market in time for cropping seasons.

## b) Fertilizer

Fertilizer also plays an important role in the agricultural economy and is an integral factor in food security and agricultural opportunity. The Indian fertilizer industry has witnessed considerable development over the past decades and is currently the third largest fertilizer industry in the world. Fertilizers are a particularly important input in the horticulture sector, as the use of fertilizer is high in fruit and vegetable production. For instance, fertilizer in Indian horticulture accounted for 17 percent of world fertilizer consumption in 2006-07 (See Figure 4).<sup>153</sup>

**Figure 4: Total Fertilizer Use by Crops at the Global level (2006-07)**



Source: Fertilizer Association of India, 2008

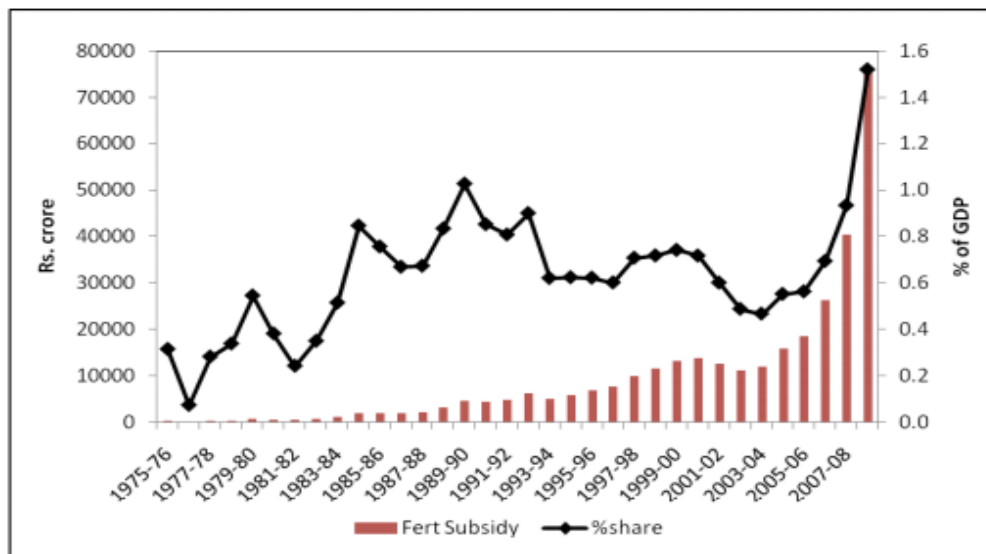
The Government of India has rolled out various schemes to promote fertilizer development and use, with a recent shift to ‘smart subsidies’ as described below. In 1977, the Government of India designed the Retention Price Scheme (RPS) to provide fertilizer to farmers at an affordable price and ensure adequate returns on investment to entrepreneurs. The retail price of fertilizer is fixed and uniform throughout the country, and the difference between the retention price (adjusted for

<sup>153</sup> Vijay Paul Sharma and Hrima Thaker, *Economic Policy Reforms and Indian Fertilizer Industry*, Center for Management in Agriculture (CMA)- Indian Institute of Management Ahmedabad, February 2015, available at <http://www.iimahd.ernet.in/users/webrequest/files/cmareports/7IndianFertilizerIndustry.pdf>

freight and dealer’s margins) and the price at which fertilizer is sold to farmers goes to the manufacturer as subsidy. The RPS did achieve its objectives of growth of a large domestic fertilizer industry, near self-sufficiency in fertilizer production, and increased consumption of chemical fertilizers, but it also fostered inefficiency due to the nature of the subsidies. The government later introduced a Nutrient Based Subsidy (NBS) that set a fixed price for specific nutrient fertilizers. Although the government policy on fertilizer pricing has evolved over the years, high expenditures on subsidies are still prevalent.

The burden of fertilizer subsidies on the central government budget has grown dramatically over the last decade (See Figure 5). The increases in subsidy levels have mainly been due to increases in the consumption of fertilizers and sharp increases in international prices of fertilizer inputs and finished fertilizers. Further, the need to keep farm-gate prices of fertilizer at reasonably affordable levels further pushed the demand for subsidies. The challenge has been to increase consumption of fertilizer while maintaining smart subsidies that do not distort the market and run afoul of international obligations (or become cost prohibitive for government).

**Figure 5: Trends in Fertilizer Subsidies in India**



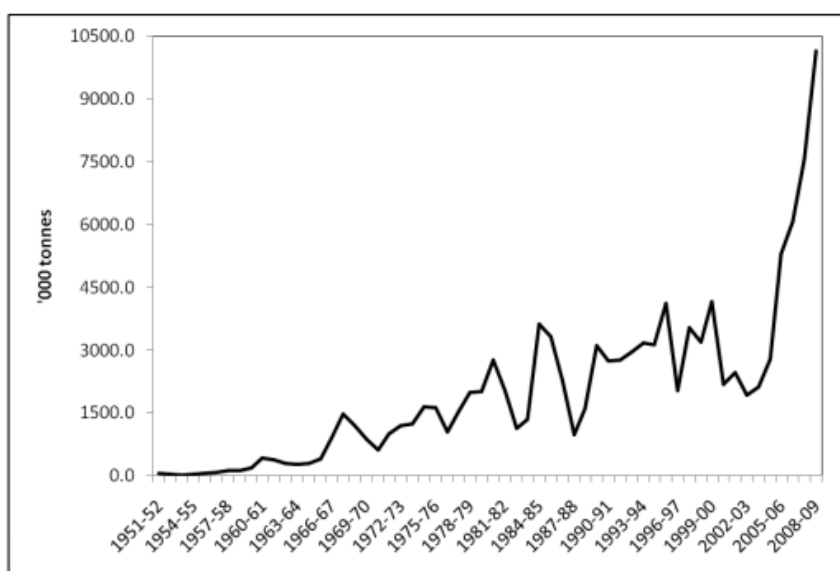
Source: Fertilizer Association of India, 2008

Recent declining global and domestic fertilizer prices have had a significant impact on agricultural production, productivity, and returns, particularly in India where imports are a significant share of fertilizer volume (See Figure 6).



Inconsistent pricing policies and unviable subsidy schemes have adversely affected the agricultural sector. For instance, the nutrient-based subsidy (NBS) scheme, introduced by the government in 2010, was meant to constrain fiscal subsidy but instead increased subsidy volumes dramatically over the years.<sup>154</sup> The immediate result of the NBS was a sharp rise in fertilizer prices, particularly for phosphoric and potassic fertilizers, which increased on average from Rs. 10,000 per MT before the introduction of NBS to Rs. 25,000 per MT in 2013. This occurrence has directly impacted soil health, output, and returns to farmers.

**Figure 6: Trends in Import of Fertilizers in India**



Source: Fertilizer Association of India, 2008

In order to address these challenges, the government faces a few alternatives. The Economic Survey under the Union Budget 2016-17 proposed a free market for agriculture with direct transfer of cash to replace subsidies for fertilizers. This Direct Benefit Transfer (DBT) model has been proposed to ensure that subsidies reach their rightful owners, but it is currently only a proposed concept.<sup>155</sup> In order to be effective, it will require a regulatory framework that supports the equitable delivery of subsidies to farmers, including tenant and land-holding farmers, and

<sup>154</sup> Himanshu, *India's Flawed Fertilizer Policy*, *Live Mint*, April 1, 2015, available at

<http://www.livemint.com/Opinion/XCCJwEzwbziwWfYfK1wRdO/Indias-flawed-fertilizer-policy.html>

<sup>155</sup> Madhvi Sally, *Economic Survey 2016 Proposes Direct Transfer of Fertilizer Subsidy to Farmers*, *Economic Times*, February 27, 2016, available at <http://economictimes.indiatimes.com/news/economy/policy/economic-survey-2016-proposes-direct-transfer-of-fertiliser-subsidy-to-farmers/articleshow/51153087.cms>

enables increases when market prices of fertilizer rise.<sup>156</sup> Subsidies are not the only mechanism that the government could use to encourage investment in the fertilizer industry and expand the availability of fertilizer to farmers; policies such as special economic zones could play an expanded role as well.

### **Regulatory Options:**

- **Establish Special Economic Zones:** with commensurate fiscal benefits, to encourage private investment, the fertilizer industry could be a focus of special economic zones with commensurate fiscal benefits. Incentives could include exemptions from various taxes, such as income tax, customs and excise duties on import of capital goods and raw materials, and sales and service taxes.
- **Implement DBT Program:** A new state-level regulation and authorization of lead government agency will be required to implement the 2013 DBT program that was launched to cover mainly the liquefied petroleum gas (LPG) subsidy (a DBT Mission was designed to prescribe a framework to be implemented by all Ministries/Departments concerned with the schemes under the program).<sup>157</sup> Similar efforts need to be made to effectively implement the fertilizer DBT in Rajasthan, involving the concerned agencies including the Department of Agriculture, and Directorate of Horticulture.

## **5. Water and Irrigation**

Water is the most critical input for enhancing agricultural productivity; the lack of irrigation is a major hurdle for sustainable agricultural growth, particularly in states with arid and semi-arid climates such as Rajasthan. Only about 45 percent of 141.6 million hectares of farmland in India has irrigation. Rainfall, the main source of irrigation for India's 263 million farmers, was 14 percent below the fifty-year average (up to 2012) from an initial forecast of 7 percent in the past year.<sup>158</sup>

<sup>156</sup> Madhvi Sally, *Economic Survey 2016 Proposes Direct Transfer of Fertilizer Subsidy to Farmers*, Economic Times, February 27, 2016, available at <http://economictimes.indiatimes.com/news/economy/policy/economic-survey-2016-proposes-direct-transfer-of-fertiliser-subsidy-to-farmers/articleshow/51153087.cms>

<sup>157</sup> Office Memorandum, DBT Mission- Department of Expenditure, Ministry of Finance, Government of India, August 27, 2015, available at [http://finmin.nic.in/dbt/DBT\\_Mission\\_OM\\_%20270802015.pdf](http://finmin.nic.in/dbt/DBT_Mission_OM_%20270802015.pdf)

<sup>158</sup> Archana Chaudhary, *Indian Plans to Borrow \$12.6 Billion Overseas to Fund Irrigation*, Bloomberg, February 2, 2016, available at <http://www.bloomberg.com/news/articles/2016-02-02/india-plans-to-borrow-12-6-billion-overseas-to-fund-irrigation>

The Indian Government is raising large-scale funds to support its irrigation projects, with the aim of achieving water security and better meeting climate change challenges.<sup>159</sup> Due to the semi-arid conditions in Rajasthan, water is a gravely scarce resource. Studies on water resources in India suggest that inland areas of Rajasthan face the potential threat of being water-starved and must be managed through the recycling and reuse of return flows, watershed management techniques, and minor irrigation planning.<sup>160</sup>

Although the Government of Rajasthan is making efforts to expand irrigation facilities in the state through investment, subsidies, and assistance programs, water management and irrigation remain a crucial challenge in the semi-arid areas of the state, which are currently facing dire water scarcity.

In 2012, the Ministry of Water Resources, Government of India released a draft National Water Policy for the consideration and opinion of state governments and other stakeholders. The policy had its genesis in the changing patterns of water use across India, both personal and industrial. Its broad objectives are to provide clean drinking water and adequate resources for irrigation, make use of renewable sources of energy like hydropower, and allow for natural disaster management and rehabilitation following devastating floods and drought.

Key elements of the Water Policy include:

- Establish **Mandatory Water Budgeting and Auditing**, with each state government to implement a regulator for water allocation, water use efficiency, and physical and financial sustainability of water resources, with a mechanism to establish a water tariff system and fix the criteria for water charges.
- Explore **Water Recharging** as a viable option, both among the government agencies as well as for the public, especially the farming communities.
- Shift the “**Service Provider**” role of the state to that of a regulator of services and facilitator for strengthening the institutions responsible for planning, implementation, and management of water resources. Water-related services should be transferred to the community and/or private sector with an appropriate “Public Private Partnership” model.

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<sup>159</sup> Archana Chaudhary, *Indian Plans to Borrow \$12.6 Billion Overseas to Fund Irrigation*, Bloomberg, February 2, 2016, available at <http://www.bloomberg.com/news/articles/2016-02-02/india-plans-to-borrow-12-6-billion-overseas-to-fund-irrigation>

<sup>160</sup> *Exploring Public-Private Partnership in the Irrigation and Drainage Sector in India: A Scoping Study*, Asian Development Bank, 2013, available at <http://www.adb.org/sites/default/files/publication/30329/ppp-irrigation-drainage-sector-india.pdf>

- Even while it is recognized that States have the right to frame suitable policies, laws, and regulations on water, there is a need to evolve a **Broad Overarching National Legal Framework** containing general principles on water.
- Establish a **Water Regulatory Authority** in each State to fix and regulate the water tariff system and charges.
- Abolish all forms of water subsidies to the agricultural and domestic sectors, but “subsidies and incentives” should be provided to private industry for **Recycling and Reusing Treated Effluents**.

In addition to the National Water Policy, the Thirteenth Finance Commission (2010–2015)<sup>161</sup> also made the observation that an autonomous statutory institution at the state level would be needed to address concerns related to inequity in water distribution among various water uses, low water use efficiency, the fragmented approach to the planning and development of water resources, low water user charges, and meager recovery.<sup>162</sup> The Commission recommended the establishment of a Water Regulatory Authority in each state. In 2005, Maharashtra State promulgated the Maharashtra Water Resources Regulatory Authority (MWRRA) Act and set up a Water Resources Regulatory Authority under the Act. Rajasthan also recently passed the Rajasthan River Basin and Water Resources Planning Act, 2015 seeking the establishment of the State Water Resources Advisory Council and the Rajasthan River Basin and Water Resource Planning Authority.<sup>163</sup> Comparing the Rajasthan authority with the successes and best practices of the Maharashtra authority and closely examining the scope of these bodies in line with the needs of the state could help establish an efficient and sustainable regulatory framework for water resource management.

### ***Regulatory Options:***

- **Implement State Level Water Regulation:** through concrete, transparent steps and detailed regulations to implement the Rajasthan River Basin and Water Resources Planning Act, 2015. The Government of Rajasthan has introduced the Rajasthan State Water Policy in line with the national-level policy, with the objective of improving and streamlining the scope of the legal framework pertaining to all aspects of water resource

<sup>161</sup> The Finance Commission of India is established under Article 280 of the Indian Constitution. The Commission is constituted every five years to make recommendations to the central government on allocation of national taxes and other government financial resources.

<sup>162</sup> *Exploring Public- Private Partnership in the Irrigation and Drainage Sector in India: A Scoping Study*, Asian Development Bank, 2013, available at <http://www.adb.org/sites/default/files/publication/30329/ppp-irrigation-drainage-sector-india.pdf>

<sup>163</sup> *Rajasthan Passes Bill to Manage Water Resources*, NDTV, April 9, 2015, available at <http://www.ndtv.com/india-news/rajasthan-passes-bill-to-manage-water-resources-753397>

management. After a critical examination of rules, regulations, ordinances, and other legal and legislative measures related to the state's water sector, the Rajasthan Government outlined specific steps to be implemented (See Box 7). It also established that the entire body of water-related laws and regulations will eventually be amalgamated into a State Water Law, which in addition to other functions will also establish the State's ownership of all water resources within its limits and those waters imported from outside the State under various agreements. Concrete steps and detailed regulations to implement and enforce this policy are currently required.

***Box 7: Government Measures towards a State Water Resources Legal Framework***

- Enact the necessary amendments and additions to the existing Acts, Rules Regulations, orders, and decisions
- Ensure that the responsibilities and powers of Government agencies and the rights and obligations of individuals be clearly spelled out in the relevant laws and regulations
- Ensure that the legislation would allow for easy implementation of policy decisions while protecting the interests of individuals and taking into account the administrative capacity to implement them;
- Empower the appropriate agencies to carry out their obligations and responsibilities as implied by the public ownership of water projects, and spell out the administrative procedures necessary for coordinated, equitable, and efficient control, as well as the resolution of conflicts which may arise from them;
- Provide legal support for the formation of WUAs and handing over to them the distribution of water for irrigation and maintenance of canals;
- Establish rules and regulations for the involvement of the private sector in development and operation of water-related projects;
- Provide in the law for the effective participation of farmers in the planning and decision making processes which involve users and public authorities;
- Introduce necessary legislation for the periodic amendment of water rates and tariff structures which would enable the full coverage of Operational and Management (O&M) expenditures, based, as far as possible on volumetric metering of supplies, while motivating users to economize the use of water, and catering to the weaker sections of the population;

## 6. Insurance

Agricultural production is subject to various types of risk, including production risk, market and price risks, risk concerning consistent application of government policies, and climate-related risks.<sup>164</sup> In general, farmers may engage in a variety of informal strategies that result in risk retention or mitigation: farming families may rely on savings, they may seek non-farming sources of income, they may rely on credit arrangements, they may sell off productive assets, and they may attempt to diversify or adopt new planting strategies.<sup>165</sup> However these informal strategies are often inadequate to compensate for a catastrophic shortfall in productive yields. Particularly in the case of poor farmers and smallholders, shortfalls can result in credit default, requiring governments and international organizations to intervene. The collateral effects of inadequately hedged risk create a burden on government and a disincentive to agricultural financing.<sup>166</sup> Informal retention and mitigation techniques have also been shown to be significantly costly for smallholders and the poor.<sup>167</sup> Further, in many interconnected agrarian communities where farming income is integral to the functioning of regional economies, related sectors may suffer due to uncompensated farming shortfalls.<sup>168</sup>

Since India's independence in 1947, agricultural insurance, or crop insurance, has evolved as a solution to these challenges. Insurance is a formal mechanism to transfer the risk of a planting failure or productive shortfall from the farmer to a third-party insurer. Initially, insurance in India emerged as a primarily government driven industry with various stages of development over the years (See Box 8).

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<sup>164</sup> P.K. Joshi. *Has Indian Agriculture Become Crowded and Risky? Status, Implications, and the Way Forward*, Indian Journal of Agricultural Economics. 70 (1), Jan-March 2015. 17.

<sup>165</sup> Mark Wenner. *Agriculture Insurance Revisited: New Developments and Perspectives in Latin America and the Caribbean*. Inter-American Development Bank, October, 2005. 10. URL: <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=734611>.

<sup>166</sup> Mark Wenner. *Agriculture Insurance Revisited: New Developments and Perspectives in Latin America and the Caribbean*. Inter-American Development Bank, October, 2005. 14. URL: <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=734611>.

<sup>167</sup> Rajive Seth, et. al. *Weather-risk hedging by farmers: An empirical study of willingness-to-pay in Rajasthan, India*. The Journal of Risk and Finance 10 (1), 2009. 2. (citing Rosenzweig, M.R. and Biswanger, H.P. *Wealth, weather risk and the composition and profitability of agricultural investments*. Economic Journal, 103. 1993. 56-78.

<sup>168</sup> Mark Wenner. *Agriculture Insurance Revisited: New Developments and Perspectives in Latin America and the Caribbean*. Inter-American Development Bank, October, 2005. 14. URL: <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=734611>.

***Box 8: Agricultural Insurance Schemes in India***

1. *Crop Insurance Scheme (1972-1978)* on H-4 Cotton (General Insurance Corporation (GIC) of India)
2. *Pilot Crop Insurance Scheme (PCIS) 1979-1984* covering cereals, millets, oilseeds, cotton, potato, and chickpea (General Insurance Corporation of India and State Governments)
3. *Comprehensive Crop Insurance Scheme (CCIS) 1985-99* covering food crops and oilseeds (adopted by 15 states and two Union Territories)
4. *Experimental Crop Insurance Scheme (ECIS) 1997-98* covering small and marginal farmers who do not borrow from institutional sources and implemented in 14 districts of five states (Central and State Governments)
5. *National Agricultural Insurance Scheme (NAIS) 1999- 2010* covering all food grains, oilseeds and annual horticultural/commercial (Agricultural Insurance Company of India Ltd (AIC), Central and State Governments)
6. *Modified National Agricultural Insurance Scheme (MNAIS) 2010- 2016*: A yield based program (similar to its predecessor the NAIS), where the threshold yield is calculated at the village Panchayat (local government) level<sup>169</sup> (Central and State Governments)
7. *Weather Based Crop Insurance Scheme (WBCIS) 2007-2016*: An index-based insurance policy, whose insured events include rainfall deficit and excess, frost, heat; relative humidity, and wind speed. (Central and State Government, and private sector insurance companies); coriander covered in Rabi season
8. *Pradhan Mantri Fasal Bima Yojana (“PMFBY Program”) (2016-)* (Central and State Governments)

<sup>169</sup> *Insurance Regulatory and Development Authority of India Annual Report 2014-15*, available at [https://www.irdai.gov.in/ADMINCMS/cms/frmGeneral\\_NoYearList.aspx?DF=AR&mid=11.1](https://www.irdai.gov.in/ADMINCMS/cms/frmGeneral_NoYearList.aspx?DF=AR&mid=11.1)

### *Pradhan Mantri Fasal Bima Yojana*

In January of 2016, in order to incorporate the best features of all previous schemes and address previous shortcomings, the Union Cabinet approved the Pradhan Mantri Fasal Bima Yojana (“PMFBY Program”), which came into effect in the 2016 *kharif* season (April 2016).<sup>170</sup> The program represents a comprehensive overhaul and expansion of the existing piecemeal crop insurance programs (See Table 6). Like its predecessor, the program will be compulsory for beneficiary farmers but optional for all others. The program also provides incentives to localities and panchayats (rural local governments) to adopt information technology to better evaluate coverage areas, estimate target crop yields, and process claims payouts in a more timely fashion. The threshold crop yields, against which losses will be insured, will be pegged to area-wide targets based on historical averages. Adopting States will be required to engage in extensive outreach and publicity campaigns to ensure broad awareness of the program. In order to consolidate claims data, the Central Government will host a web portal where State Governments will report yield and claims data. A unique aspect of this program is that it attempts to encourage greater participation from private sector insurance companies in its implementation. Insurance Companies actively engaged in agriculture/rural insurance business and with adequate experience, infrastructure, financial strength and operational capabilities will be engaged as implementation agencies.<sup>171</sup> In addition, the design of the program also focuses on more efficient and speedy settlement of claims. To address the shortcomings of previous schemes, the PMFBY program has a design that aims to offer timely claim settlement. Under this program, settlement of claims is done in two ways:

- i. *For Coverage Through Banks:* The claim amount, along with particulars, will be released to the individual Nodal Banks. The Banks at the grass-root level, in turn, shall credit the accounts of the individual farmers and display the particulars of beneficiaries on their notice board.
- ii. *For Coverage Through Other Insurance Intermediaries:* The claim amount will be released electronically to the individual Insured Bank Accounts.

<sup>170</sup> *Pradhan Mantri Fasal Bima Yojana: Crop Insurance Plan to Entail Rs 8.8K cr Outgo*, The Indian Express, available at <http://indianexpress.com/article/business/business-others/pradhan-mantri-fasal-bima-yojana-crop-insurance-plan-to-entail-rs-8-8k-cr-outgo/#sthash.X7IY4GJ0.dpuf>

<sup>171</sup> *Operational Guidelines Pradhan Mantri Fasal Bima Yojana*. Department of Agriculture, Cooperation and Farmers Welfare, available at [http://agricoop.nic.in/Admin\\_Agricoop/Uploaded\\_File/OprationalGuidelines1822016.pdf](http://agricoop.nic.in/Admin_Agricoop/Uploaded_File/OprationalGuidelines1822016.pdf)



**Table 6: Comparison of Indian Insurance Schemes**

No	Feature	NAIS [1999]	MNAIS [2010]	PM Crop Insurance Scheme
1	Premium rate	Low	High	Lower than even NAIS (Govt to contribute 5 times that of farmer)
2	One Season – One Premium	Yes	No	Yes
3	Insurance Amount cover	Full	Capped	Full
4	On Account Payment	No	Yes	Yes
5	Localised Risk coverage	No	Hail storm Land slide	Hail storm Land slide Inundation
6	Post Harvest Losses coverage	No	Coastal areas - for cyclonic rain	All India – for cyclonic + unseasonal rain
7	Prevented Sowing coverage	No	Yes	Yes
8	Use of Technology (for quicker settlement of claims)	No	Intended	Mandatory
9	Awareness	No	No	Yes (target to double coverage to 50%)

Source: Press Information Bureau, Ministry of Agriculture, Government of India, 2016

Also in 2015 the Indian Cabinet notified a package of reform measures containing two provisions that could have a direct impact on the availability of agricultural insurance policies written by private sector entities.<sup>172</sup>

1. **Increase in Foreign Investment Into Indian Insurance Companies:** The amendments increased the cap on foreign direct investment into Indian insurance entities from 26 to 49 percent.<sup>173</sup> This is intended to create a surge in liquidity in the insurance industry and incentives for offering new lines of insurance. The cap raise is also expected to create new joint ventures between foreign and Indian insurers and inject capital into those joint ventures that already exist.<sup>174</sup> The opportunity for increased participation could invite experienced players in the agricultural insurance industry, particularly those that offer weather based index products.

<sup>172</sup> The Insurance Laws (Amendment) Act, 2015 (No. 5 of 2015 dated 20<sup>th</sup> March 2015).

<sup>173</sup> The Insurance Laws (Amendment) Act, 2015 (No. 5 of 2015 dated 20<sup>th</sup> March 2015) at Section 3(iv).

<sup>174</sup> See *India Opens Up Insurance Sector To Foreign Players*, Forbes, Mar. 23, 2015. URL: <http://www.forbes.com/sites/greatspeculations/2015/03/23/india-opens-up-insurance-sector-to-foreign-players/#1caf5e9c7383>; James Crabtree, *Foreign insurers scramble for India foothold*, Financial Times, Apr. 5, 2015. URL: <http://www.ft.com/intl/cms/s/0/ddcfbdb4-d867-11e4-8a68-00144feab7de.html#axzz47SOFqlra>.

2. **Foreign Investment in Re-insurance Companies:** The second reform in the 2015 package relevant to agricultural insurance allows foreign re-insurance companies to enter the Indian market.<sup>175</sup> Because an adverse weather event or other agricultural catastrophe can generate massive claims from a homogenous insurance unit with similar exposure to risk in a single planting cycle, effective reinsurance is a crucial element to crop policies. This is demonstrated by the frequent year-on-year insolvency of area yield programs sponsored by the Government of India. Before the 2015 reforms, the government-sponsored General Insurance Corporation was the only reinsurer in India.<sup>176</sup> With the liberalization of the market to foreign players, agricultural insurers should have better alternatives to acquire stop-loss coverage, and increased assistance in modeling and planning for risk.<sup>177</sup>

### *Insurance Regulatory and Development Authority (IRDA)*

The sale of insurance in India is regulated by an autonomous governmental agency called the Insurance Regulatory and Development Authority (IRDA).<sup>178</sup> The IRDA was created in 1999 as part of the effort to invite private participation in the insurance industry.<sup>179</sup> The IRDA identifies insurance products as either life or non-life (general insurance) and promulgates regulations, guidelines, and circulars separately for each category of insurance products. It is also the licensing authority for agents, brokers, and insurers.<sup>180</sup> Crop insurance comes under the general insurance category. In addition to IRDA specific general insurance regulations, crop insurance programs are governed by their respective government schemes/programs. For instance, all aspects of crop insurance under the PMFBY are governed by the Operational Guidelines<sup>181</sup> issued by the central government.

<sup>175</sup> The Insurance Laws (Amendment) Act, 2015 (No. 5 of 2015 dated 20<sup>th</sup> March 2015) at Section 3(vii).

<sup>176</sup> Neeraj Tuli and Celia Jenkins, *India, in The Insurance and Reinsurance Law Review*, Chapter 16 220-229 (P. Rogan 2 ed. 2014). 220.

<sup>177</sup> Ramiro Iturrioz, *Agricultural Insurance*, Primer Series on Insurance Issue 12, November 2009. World Bank. URL: [http://siteresources.worldbank.org/FINANCIALSECTOR/Resources/Primer12\\_Agricultural\\_Insurance.pdf](http://siteresources.worldbank.org/FINANCIALSECTOR/Resources/Primer12_Agricultural_Insurance.pdf). 18.

<sup>178</sup> Neeraj Tuli and Celia Jenkins, *India, The Insurance and Reinsurance Law Review*, Chapter 16 220-229 (P. Rogan 2 ed. 2014). 220.

<sup>179</sup> Neeraj Tuli and Celia Jenkins, *India, The Insurance and Reinsurance Law Review*, Chapter 16 220-229 (P. Rogan 2 ed. 2014). 220.

<sup>180</sup> Neeraj Tuli and Celia Jenkins, *India, The Insurance and Reinsurance Law Review*, Chapter 16 220-229 (P. Rogan 2 ed. 2014). 225.

<sup>181</sup> *Operational Guidelines Pradhan Mantri Fasal Bima Yojana*. Department of Agriculture, Cooperation and Farmers Welfare, available at <http://agricoop.nic.in/>

Admin\_Agricoop/Uploaded\_File/OprationalGuidelines1822016.pdf

In 2002, the IRDA promulgated regulations that required insurance companies to offer products in government-defined rural areas.<sup>182</sup> Qualifying rural areas are defined as those wherein (1) at least 25 percent of working age males are employed in agriculture; (2) there is a minimum population of 5,000 people; and (3) there is a population density of 1,000 per square mile.<sup>183</sup> General insurance providers, a category that includes companies that write agricultural policies, must grow their business in these rural sectors to government set quota levels depending upon the age of the insurance company. By the tenth year of existence, a general insurance company must receive at least 10 percent of its premium income from rural areas.<sup>184</sup>

### Micro Insurance

Micro-insurance is the protection of low-income stakeholders against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of the risk involved. India, a study finds that currently has the most dynamic micro-insurance sector in the world,<sup>185</sup> particularly in regulation. In 2005, the IRDA promulgated a regulation with the apparent intention of reducing the burden of entry on insurance agents that deal in micro-insurance products.<sup>186</sup> The rule required that micro-insurance risk-bearers and underwriters receive certification from the IRDA and meet the substantial capital reserve requirements.<sup>187</sup> However, it did permit certain organizations to become “micro-insurance agents” with the ability to sell “micro-insurance products” on behalf of certified insurers. A micro-insurance product that would cover agricultural risk was restricted to a total sum-insured value of between Rs. 5,000 and 30,000. A micro-insurance agent’s commission is capped at 15 percent of the premium collected for non-life policies. The 2005 rules also reduced the amount of training required to become a

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<sup>182</sup> *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

<sup>183</sup> *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

<sup>184</sup> *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

<sup>185</sup> *Microinsurance Demand and Market Prospects: India*, Allianz-GTZ-UNDP Public private Partnership, August 2006, available at <http://www.undp.org/content/dam/aplaws/publication/en/publications/capacity-development/microinsurance-demand-and-market-prospects-for-india/Microinsurance.pdf>

<sup>186</sup> See *Insurance Regulatory and Development Authority (Micro-Insurance) Regulations, 2005*, No. 147, Nov 10, 2005, available at [http://www.aajeevika.gov.in/sites/default/files/nrlp\\_repository/IRDA-Mirco-Ins\\_reg-2005.pdf](http://www.aajeevika.gov.in/sites/default/files/nrlp_repository/IRDA-Mirco-Ins_reg-2005.pdf).

<sup>187</sup> See *Insurance Regulatory and Development Authority (Micro-Insurance) Regulations, 2005*, No. 147 (Nov 10, 2005), available at [http://www.aajeevika.gov.in/sites/default/files/nrlp\\_repository/IRDA-Mirco-Ins\\_reg-2005.pdf](http://www.aajeevika.gov.in/sites/default/files/nrlp_repository/IRDA-Mirco-Ins_reg-2005.pdf).

micro-insurance agent and conferred greater flexibility as to the range of services that an agent can provide to the client.<sup>188</sup>

In 2015, in response to feedback from the lending community, the IRDA updated the micro-insurance regulations through the Insurance Regulatory and Development Authority (Micro Insurance) Regulations, 2015. These rules expand the universe of organizations eligible to become micro-insurance agents.<sup>189</sup> This expansion allowed the participation by non-bank financial institutions (NBFI), which had previously been excluded. NBFIs are active micro-finance lenders with strong ties to rural communities, and a ready pipeline of agricultural clients that can benefit from crop insurance.<sup>190</sup> Similarly, non-profits registered under the Indian Companies Act were also made eligible under the 2015 updates. However, some criticisms of the original micro-insurance rules were not addressed, including issues such as agency commissions, restrictions on agents from working with insurance providers, and collection and remission procedures (as discussed below).

### ***Regulatory Options:***

- **Further Amend Micro Insurance Regulations:** While the Insurance Regulatory and Development Authority (Micro Insurance) Regulations, 2015 address gaps and challenges in the micro insurance regulations, some critical issues remain:
  1. **Reduce Cap on Agent Commissions on Non-Life Policies:** Agent commissions on non-life policies remain capped at 15 percent of premiums. For micro-insurance agents that operate in rural and agrarian communities, the commissions were not remunerative because of the small average size of micro-insurance policies and challenges with scale in the micro-insurance business.<sup>191</sup> In addition, agents' commissions are subject to the Indian service

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<sup>188</sup> *Insurance Regulatory and Development Authority (Micro-Insurance) Regulations, 2005*, No. 147 (Nov 10, 2005), available at [http://www.aajeevika.gov.in/sites/default/files/nrlp\\_repository/IRDA-Mirco-Ins\\_reg-2005.pdf](http://www.aajeevika.gov.in/sites/default/files/nrlp_repository/IRDA-Mirco-Ins_reg-2005.pdf)

<sup>189</sup> *Insurance Regulatory and Development Authority (Micro Insurance) Regulations, 2015*, No. 88 (Mar 13, 2015) at Sec. 2(f).

<sup>190</sup> *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

<sup>191</sup> *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.mcril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.mcril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

tax, reducing their commissions further<sup>192</sup> and discouraging activity in the area.

2. **Allow Micro-Insurance Agents to Work with More than One General Insurance Provider:** Micro-insurance agents are forbidden from working with more than one general insurance provider.<sup>193</sup> This will make it harder to scale up the kind of business necessary to sustain a micro-insurance service. It also reduces options for the end-using farmer.
3. **Capital Requirement Waivers for Agricultural Micro-Insurers** and flexibility in the rules restricting how rural agents may operate to sell agricultural insurance: Because there are several barriers to entry to becoming an insurer in India, including substantial capital reserve requirements, non-profits and financing institutions can only sell policies on behalf of established legacy Indian insurance companies. They must rely on these legacy insurers for underwriting, benefit design, and a general appetite of entering this market. The need to rely on registered insurers (there are only 29) hampers innovation and competition, and retards the expansion of these products.
4. **Better Clarity on Collection and Remission Procedures:** It is unclear whether the 2015 updated rules resolve a conflict of law that may operate to prevent non-banking financial institutions (NBFCs) collecting and remitting premiums at the point of sale of a micro-insurance product.<sup>194</sup> Under rules promulgated by the Reserve Bank of India, if an NBFC completes a sale to a client as an agent of an insurer, the NBFC would have to instruct the client to send payment directly to the insurer. This gap in the process is likely to lead to difficulty in terms of payment to an entity that the client has no contact with.

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<sup>192</sup> *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.mcril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.mcril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

<sup>193</sup> *Insurance Regulatory and Development Authority (Micro Insurance) Regulations, 2015*, No. 88 (Mar 13, 2015) at Sec. 5(2).

<sup>194</sup> See, *Entry of NBFCs into Insurance Business*, RBI Circular DNBS (PD) C.C. No. 35 / 10.24 / 2003-04 (Feb 10 2004), at Section 2(iv); *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.mcril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.mcril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

This becomes particularly challenging in rural areas where the awareness and reach of the clients are limited.<sup>195</sup>

- **Implement State Government Outreach and Extension Programs to Increase Farmer Participation:** Similar to many other states in India, Rajasthan's farmers have participated in insurance schemes to a very limited degree. Between the 1999-2000 and 2009-2010 planting seasons, only 9.49 percent of Rajasthan's farmers were enrolled in the NAIS.<sup>196</sup> In the 2009-2010 season, only 28.94 percent of Rajasthan's gross cropped area was covered by the NAIS. A large portion of farmers (about 81 percent) is unaware of the practice of crop insurance.<sup>197</sup> There is also severe lack of capacity and knowledge at the state government level for designing and implementing crop insurance solutions. The new PMFBY program seeks to improve farmer participation and market outreach by emphasizing on publicity and awareness at the state level. The Operational Guidelines state that the State Governments in collaboration with insurance companies must chalk out plans for capacity building of the associated agents, and banks for effective implementation of the scheme and organize training workshops and sensitization programs for rural communities and agents. Rajasthan government must design implementation, outreach and extension programs under this scheme.
- **Implement Speedy and Transparent Claim Settlement Mechanisms:** A critical problem with crop insurance has been the long delay in payment of indemnities. Under previous schemes, this has been partly caused by the time taken for the data to be collated, but also more importantly by state and central governments' inability to expeditiously contribute to claim settlements, since they have typically not budgeted adequately for such liabilities.<sup>198</sup> Farmers not receiving claims payment on time often default on their bank loans and become ineligible for loans for the next crop cycle. This has also contributed to the relatively low use of crop insurance.

The PMFBY has designed mechanisms to strengthen the procedure for better settlement of claims. To further strengthen the process and discourage delays, the Government of

<sup>195</sup> *Micro-Insurance Regulation in the Indian Financial Landscape*, Micro-Credit Ratings International Limited, M-CRIL, March 2008, available at [http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro\\_Insurance\\_Regulation\\_In\\_The\\_Indian\\_Financial\\_Landscape.pdf](http://www.m-cril.com/BackEnd/ModulesFiles/Publication/Micro_Insurance_Regulation_In_The_Indian_Financial_Landscape.pdf)

<sup>196</sup> Debisree Banerjee and Uttam Bhattacharya. *Innovations in Agricultural Insurance in India: Retrospect and Prospect*. Indian Journal of Agricultural Economics 66 (3), July-Sept 2011. 464

<sup>197</sup> *Only 19 percent of Farmers are Insured, Exposing Vast Majority to Weather Vagaries: ASSOCHAM- Skymet Study*, ASSOCHAM India, April 12, 2015, available at <http://www.assochem.org/newsdetail.php?id=4923>

<sup>198</sup> *Enhancing Crop Insurance in India*, The World Bank and Global Facility for Disaster Reduction and Recovery (GFDRR), April 2011, available at [https://www.gfdr.org/sites/gfdr.org/files/DRFI\\_India\\_mNAIS\\_Report\\_July11.pdf](https://www.gfdr.org/sites/gfdr.org/files/DRFI_India_mNAIS_Report_July11.pdf)

India is also exploring the option of imposing penalties for delaying farmers' crop settlement claims.<sup>199</sup> As the state government is a key implementation agency, along with the national government agencies, private insurance players and financial institutions, its role in settlement of claims is crucial. Better support for data collection and collation, management of resources to settle claims and implementing efficient processes for applications, and imposing penalties for delays could be ways in which the Rajasthan government can bolster the claim settlement system in the agricultural insurance field.

## B. STORAGE/LOGISTICS

Storage and logistics are becoming increasingly crucial in the agricultural value chain due to growing production, demand, and cross border movements of goods. Particularly with respect to horticulture crops such as orange/mandarin, which have a restricted shelf life, appropriate storage and handling conditions that maintain the quality of the produce and minimize waste are important. In Kota division, where the markets for oranges/mandarins and coriander are national and global, storage infrastructure and the environment that support and enable them have been the focus of the government and private actors. Several possible regulatory interventions could help enhance the storage sector as discussed below.

### 1. Warehousing and Cold Storage Regulation

Over the years, India has witnessed a marked increase in production of perishable high nutrition products like fruits and vegetables, but neither cold chain infrastructure nor a tailored regulatory system has been developed for safe handling and transportation of these perishable products. Due to the perishable nature of horticultural products, which have a lifespan ranging from just a few days to a few weeks even when temperature controlled, cold chain is a crucial element in the value chain. Particularly in the case of whole produce like fresh fruits and vegetables, their perishable nature necessitates use of uninterrupted cold chain to connect and expand markets, maintain quality, and avoid food loss. By enhancing the lifespan and transportability of the produce, cold chain allows producers to reach and capture more markets (See Figure 7)<sup>200</sup>. Throughout India, the cold chain has significant gaps, with the notable exception of the dairy

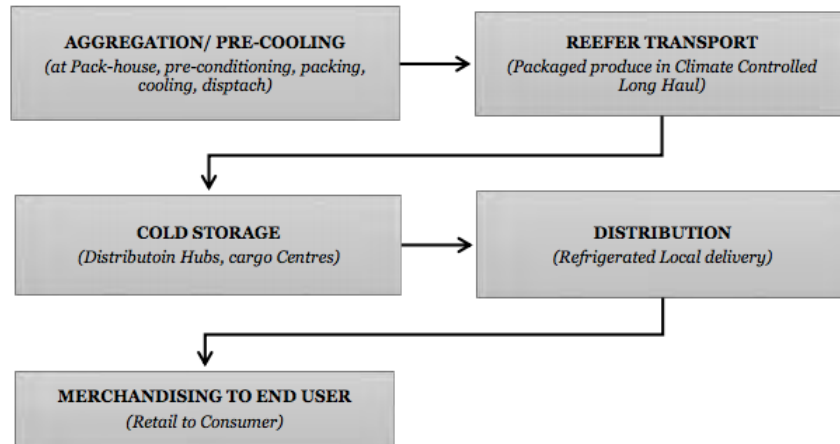
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<sup>199</sup> *Government May Impose Penalties for Delay in Settling Crop Insurance Claims*, The Economic Times, March 22, 2016, available at <http://economictimes.indiatimes.com/news/economy/agriculture/government-may-impose-penalties-for-delay-in-settling-crop-insurance-claim/articleshow/51507213.cms>

<sup>200</sup> *All India Cold-Chain Infrastructure Capacity Assessment of Status and Gaps (2015)*, National Center for Cold-Chain Development, available at [http://www.nccd.gov.in/PDF/CCSG\\_Final%20Report\\_Web.pdf](http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf)

sector. While some of the gaps in the cold chain require infrastructure investment, other challenges are of a regulatory nature.

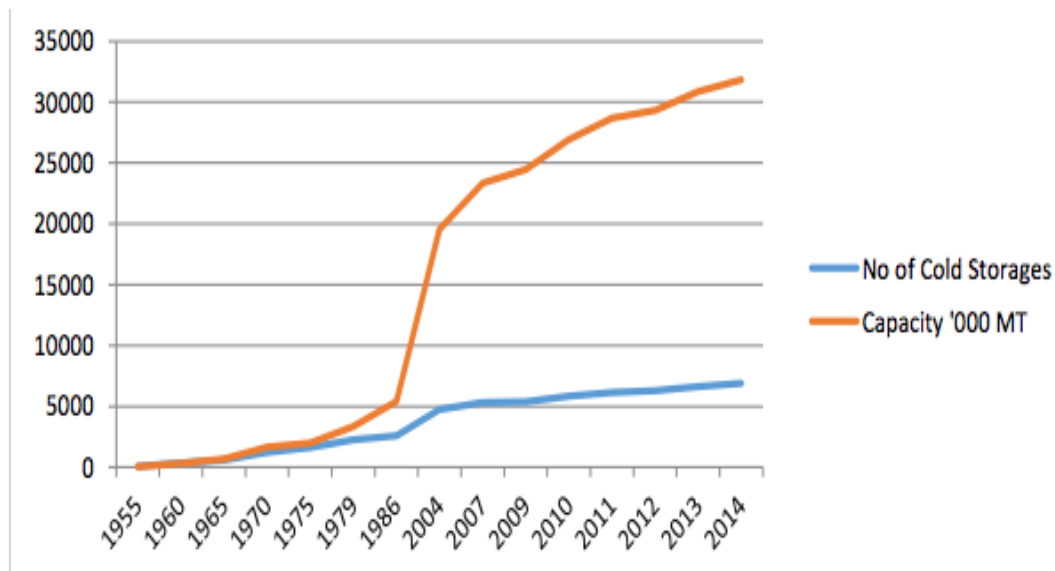
**Figure 7: Logistics Flow for Horticulture Produce**



Source: National Center for Cold Chain Development (NCCD), 2015

Despite a growth trend in cold storage in India (Figure 8), supply of cold storage does not match demand.

**Figure 8: Growth Trend of Cold Storage in India**



Source: National Center for Cold Chain Development (NCCD), 2015



According to a study conducted by National Stock Exchange Limited (NSE) in December 2010, the country needed 61.13 million MT cold storage capacity as opposed to the then available 24.29 million MT, with a gap of 36.83 million MT was evaluated.<sup>201</sup>

As of March 2014, Uttar Pradesh had the highest number of cold storage facilities in the country (with 2176 facilities); however, Rajasthan is lagging behind (with 154 facilities).<sup>202</sup> A significant proportion of cold storage in Rajasthan is privately owned and also appears to be unevenly distributed in different locations in the state. Major trading districts such as Jaipur and Jodhpur have greater cold storage options than other districts. Oranges/mandarins in Rajasthan are being stored in simple storage facilities in loose form, resulting in waste and diminished quality of produce. Although the state produces the highest volume of coriander in the country, none of it is processed or stored in Rajasthan, traveling instead to Gujarat or other states for these functions.

Various regulations and policies governing the cold storage sector have evolved over the years to meet the needs of the market and respond to technological advancements (See Figure 9). Cold chain regulations and government programs were initially primarily focused on the potato sector. The Government of India promulgated the Cold Storage Order in 1964 (replaced by the Order of 1980) under Section 3 of the Essential Commodities Act of 1955. A few states like West Bengal and Uttar Pradesh States enacted their own legislation in 1966 and 1976, and Punjab and Haryana announced their legislation in 1979.<sup>203</sup> Rajasthan does not yet have specific cold chain regulation.

Subsequently, Government of India modified the Central Cold Storage Order in May 1997 in line with the country's policy of liberalization, encouraging foreign and private investment into the sector.<sup>204</sup> Over the years, with the growing production and expanding markets of a range of horticultural products, the need for an integrated cold-chain development approach became more apparent. In 2005-06, a mission mode approach to developing horticulture was initiated with the launch of National Horticulture Mission (NHM). In 2013, all existing arms under DAC involved in horticulture development were subsumed under the Mission for Integrated Development of Horticulture (MIDH). Post-harvest infrastructure development including cold chain, is the thrust area under MIDH.

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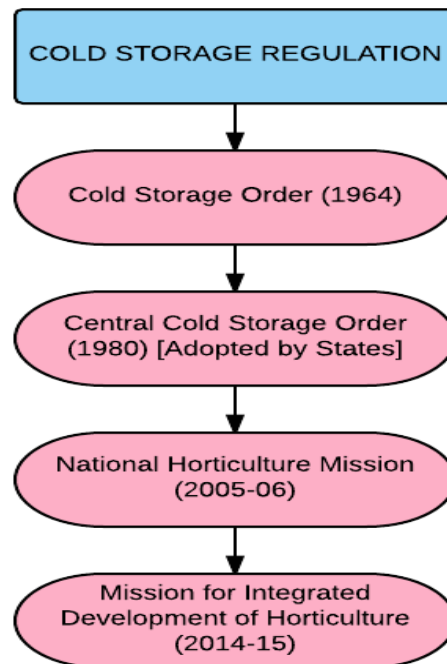
<sup>201</sup> *All India Cold-Chain Infrastructure Capacity Assessment of Status and Gaps (2015)*, National Center for Cold-Chain Development, available at [http://www.nccd.gov.in/PDF/CCSG\\_Final%20Report\\_Web.pdf](http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf)

<sup>202</sup> *All India Cold-Chain Infrastructure Capacity Assessment of Status and Gaps (2015)*, National Center for Cold-Chain Development, available at [http://www.nccd.gov.in/PDF/CCSG\\_Final%20Report\\_Web.pdf](http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf)

<sup>203</sup> Prem Singh Dahiya and Hoshyar Chand Sharma, *Potato Marketing in India: Status, Issues, and Outlook*, International Potato Center (CIP), 1994, available at [http://pdf.usaid.gov/pdf\\_docs/PNABT121.pdf](http://pdf.usaid.gov/pdf_docs/PNABT121.pdf)

<sup>204</sup> *All India Cold-Chain Infrastructure Capacity Assessment of Status and Gaps (2015)*, National Center for Cold-Chain Development, available at [http://www.nccd.gov.in/PDF/CCSG\\_Final%20Report\\_Web.pdf](http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf)

*Figure 9: Snapshot of Cold Storage Regulation and Policy in India*



Source: New Markets Lab, 2016

The National Mission for Integrated Development of Horticulture (MIDH) issued guidelines for the establishment of pre-cooling units, ‘on-farm’ pack houses, mobile pre-cooling units, staging cold rooms, and cold storage units. Under this program, both public sector and private entities that meet the requirements under the guidelines can receive assistance to enhance processing and handling facilities. This would boost the shelf life of horticultural crops and potentially improve both output and returns.

The Ministry of Food Processing Industries (MoFPI), Government of India is also operating a “Scheme on Cold Chain, Value Addition and Preservation Infrastructure” that is dedicated to the cold chain and other programs for development of processing units. The Ministry of Commerce is operating a scheme to enhance exports, which includes necessary export-oriented cold chain components. In addition to MoFPI, other bodies like the National Center for Cold Chain Development (NCCD), National Horticulture Board (NHB), and Agricultural and Processed Food Products Export Development Authority (APEDA) are involved in building and managing cold chain infrastructure, sometimes creating overlap.

To support cold chain as an important agri-logistics intervention, the Mission for Integrated Development of Horticulture (MIDH) under the Ministry of Agriculture and Farmers Welfare is providing incentives to entrepreneurs for the development of all relevant cold chain infrastructure components. Additionally, the Union Budget of 2016-17 has announced the opening of the food processing and retail sectors to foreign investment, which is a notable change in policy. However, a targeted regulatory structure that monitors the private cold chain industry is absent in Rajasthan.

### ***Regulatory Options:***

- Develop State-Level Cold Storage Regulation:** Regulations specific to cold storage, particularly at the state level, could enhance investment in cold storage infrastructure in Rajasthan, implement the standards, programs and regulations under national frameworks (MIDH and MoFPI). Such a framework could monitor the establishment, investment, incentives, and management of cold storage facilities. It could also address important standards such as better hygiene, removal of humidity, and pest control. Uttar Pradesh and West Bengal are among the few states that have put in place a regulatory framework to address the cold chain,<sup>205</sup> and they have established large cold storage networks. An expert committee on encouraging investment in supply chains<sup>206</sup> recommended the establishment of a regulatory and reporting authority that can create a simple framework for the operation of a cold chain. It advised that such a regulatory agency work closely with the Warehouse Development and Regulatory Authority and other existing regulatory agencies so as to streamline regulation and take advantages of economies of scale through regular exchange of information, especially in regard of transactions, price, volume, identity, and national schemes and guidelines.

Market Committees under the APMC Act and Rules could also help coordinate mandi level cold chain activities. Storage capacities in market yards and sub-yards could be established according to set standards, with procedures in place for effective implementation. In addition, cold chain transport services should be included with an understanding that these services will differ from large cold chain infrastructure. Because cold chain infrastructure is often spread across states, an approach that is uniformly applied by interconnected states would be more effective.

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<sup>205</sup> The Uttar Pradesh Regulation of Cold Storages (Amendment) Act, 1983, Uttar Pradesh Cold Storages (Regulation) Rules, 1976 and The West Bengal Cold Storage (Licensing and Regulation) Act, 1966

<sup>206</sup> Report of the Committee on Encouraging Investment in Supply Chains Including Provision for Cold Storages for Efficient Distribution of Farm Produce, Development Policy Division- Planning Commission, Government of India, May 2012, available at [http://planningcommission.gov.in/reports/genrep/rep\\_supply1312.pdf](http://planningcommission.gov.in/reports/genrep/rep_supply1312.pdf)

## 2. Transport Services

Transport is a crucial factor in getting agricultural produce to market, both farm to market and market to consumer. A transport system includes different modes of transport services, hard infrastructure, and different layers of regulation. In addition to road transport, climate controlled transport services are critical for horticultural and spices products. Cold chain development efforts in India have been mainly focused on building storage capacity in the form of single commodity bulk storage at the production end for specific crop types (such as potato and dried chillies).<sup>207</sup> The larger group of perishable horticulture, however, requires other infrastructure components at different stages along the value chain.

A number of factors can impact transport services delivery, including the need for cold storage in transit, the size of transport vehicles, and the challenges associated with operating them. The APMC Market Committee at the mandi has the power to regulate the entry of vehicles and modes of transport. The Agricultural Produce Marketing Board (the ‘Board’) undertakes initiatives to improve the road network for transport in both legs, combined with other State and Central Government infrastructure investments.

While the APMC Market Committees monitor transportation infrastructure, there is a gap in regulation of services, including technologically advanced transport solutions that are necessary for horticultural products. As autonomous bodies, the Market Committees allocate market funds to upgrade transport infrastructure, but they lack a focus on services, along with their management and regulation. In order to meet the growing logistics demand in Rajasthan and conform to increasing quality standards, a coherent policy is needed along with regulatory mechanisms to integrate transport services into mandis, which will provide better conditions to farmers and traders.

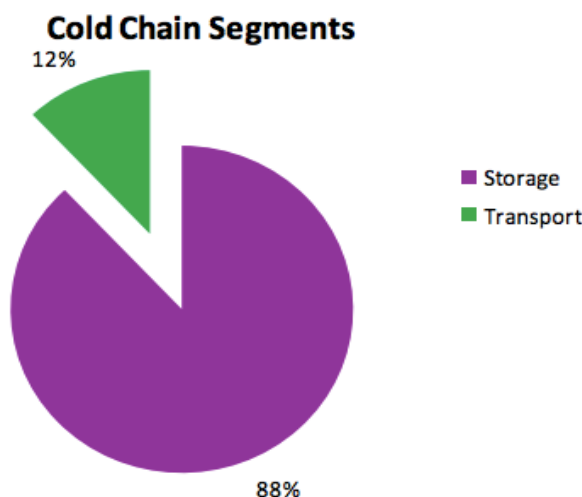
Cold chain transportation is an uninterrupted series of storage and distribution activities, which maintain a consistent temperature range for the products throughout the value chain. This is a refrigerated transport system, mainly consisting of refrigerated trucks (reefer trucks), which is designed for temperature-controlled carriage of perishable products. However, such infrastructure has been lacking in India. According to a recent report in 2014, the market share in

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<sup>207</sup> *All India Cold-Chain Infrastructure Capacity Assessment of Status and Gaps (2015)*, National Center for Cold-Chain Development, available at [http://www.nccd.gov.in/PDF/CCSG\\_Final%20Report\\_Web.pdf](http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf)

cold chain was divided into 88-90 percent with cold stores and on 10-12 percent with refrigerated transport (See Figure 10).<sup>208</sup>

**Figure 10: Market Share of Cold Chain Infrastructure**



Source: National Center for Cold Chain Development (NCCD), 2015

For orange/mandarins, cold chain transportation, which includes refrigerated vans and transport services, is essential during movement all the way from the farm to the customer in order to maintain temperature inside packaging at the same level as in cold storage. In Rajasthan, because of significant progress in rural roads under the World Bank funded Pradhan Mantri Gram Sadak Yojana (PMGSY) program, potential for connecting rural output with buying markets has been created.<sup>209</sup> Building upon this underlying infrastructure, the Market Committee could initiate steps and develop policies to encourage reliance on cold chain for transport of orange/mandarins and other horticultural crops.

Taking into account the expansion of fruit and vegetable markets across the country, rise in demand for refrigerated transport, and gaps in quality infrastructure, DAC constituted a Technical Standards Committee in 2007 with the following primary objectives:

<sup>208</sup> *All India Cold-Chain Infrastructure Capacity Assessment of Status and Gaps (2015)*, National Center for Cold-Chain Development, available at [http://www.nccd.gov.in/PDF/CCSG\\_Final%20Report\\_Web.pdf](http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf)

<sup>209</sup> *All India Cold-Chain Infrastructure Capacity Assessment of Status and Gaps (2015)*, National Center for Cold-Chain Development, available at [http://www.nccd.gov.in/PDF/CCSG\\_Final%20Report\\_Web.pdf](http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf)

- Develop suitable technical standards and protocols for cold chain infrastructure in the country; and
- Establish a mechanism for implementation of such standards and protocols.

In 2011, ‘Technical Standards and Protocol for the Special Equipment for Refrigerated Transport of Perishable Food Commodities Including Horticulture Produce’ were introduced to define appropriate technical standards with respect to different components of the cold chain in order to maintain product quality from the field to the consumer.<sup>210</sup> While these standards have been laid out at the national level, the necessary implementation mechanisms and monitoring tools are not in place in Rajasthan. Both awareness of such standards and adherence to them is inadequate, giving rise to the need for state government measures to address them.

In addition, The Government of Rajasthan introduced a Scheme of Reefer Vehicles under the State Food Processing Mission to provide financial assistance to standalone reefer vehicles and mobile pre-cooling vans for carrying horticultural and non-horticultural produce.<sup>211</sup> The Scheme is designed to enable linking groups of producers to the processors and markets through well-equipped supply chain management.<sup>212</sup> However, the operational process has been met with some challenges.

### ***Regulatory Options:***

- **Improve Refrigerated Transport Licensing Process:** The government permit granted to reefer trucks needs to be renewed annually and is typically not re-issued after eight years, after which a vehicle is permitted to only run on intra-state routes.<sup>213</sup> This limits the operating life of reefers. Taking into account the increased interstate movement of horticultural produce from Rajasthan and use of refrigerated vehicles for transportation,

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<sup>210</sup> *Technical Standards and the Special Equipment for Refrigerated Perishable Food Commodities including Agriculture Produce and Additional Information (2011)*, Cold Chain Development Cell- National Horticulture Board, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, February 2011, available at <http://nhb.gov.in/documents/cs5.pdf>

<sup>211</sup> *Guidelines for Implementation of the Scheme of Reefer Vehicle during Financial Year 2013-17 under National Mission on Food Processing*, Industries Department- Government of Rajasthan, June 12, 3014, available at [http://industries.rajasthan.gov.in/content/dam/industries/pdf/DOI/StateFoodProcessingMission/1.ReeferVehiclesScheme\\_1\\_17092014.pdf](http://industries.rajasthan.gov.in/content/dam/industries/pdf/DOI/StateFoodProcessingMission/1.ReeferVehiclesScheme_1_17092014.pdf)

<sup>212</sup> *Guidelines for Implementation of the Scheme of Reefer Vehicle during Financial Year 2013-17 under National Mission on Food Processing*, Industries Department- Government of Rajasthan, June 12, 3014, available at [http://industries.rajasthan.gov.in/content/dam/industries/pdf/DOI/StateFoodProcessingMission/1.ReeferVehiclesScheme\\_1\\_17092014.pdf](http://industries.rajasthan.gov.in/content/dam/industries/pdf/DOI/StateFoodProcessingMission/1.ReeferVehiclesScheme_1_17092014.pdf)

<sup>213</sup> *Refrigerated Transportation: Bottlenecks and Solutions*, National Center for Cold Chain Development & Ernst & Young, 2013, available at <http://www.crosstree.info/Documents/NCCD/Bottlenecks%20Transport%20EYIN.pdf>

the licensing process could be changed to extend validity periods, improve renewal process, and support interstate movement of vehicles.

**Box 9: Good Practices in Road Transport Licensing Systems<sup>214</sup>**

- Should require licenses to access the sector and provide truck services to establish minimum conditions and requirements such as technical inspection certificates.
- Should require licenses to access the sector and provide truck services to establish minimum conditions and requirements such as technical inspection certificates.
- Should not include discriminatory requirements for licenses, such as nationality, membership in a trucking organization and minimum operational capacity.
- Should establish quality criteria such as good repute, financial standing and professional competence to obtain a transport license, preferably by implementing a company-level license.
- Should make licensing requirements transparent and accessible and collect and update road transport data.
- Should promote market-based price-setting mechanisms and freight allocation systems

- **Implement National Technical Standards for Refrigerated Transport:** The Market Committees, which are currently limited to development of infrastructure in and around the mandi, must also focus on such transport and storage services that link the mandis to farmers and markets. Under the Rajasthan APMC framework, the APMC Board and Market Committees must develop mechanisms to implement the technical standards and protocols pertaining to refrigerated transportation issued at the national level (National Horticulture Board).

<sup>214</sup> *Enabling the Business of Agriculture 2016: Comparing Regulatory Good Practices*, World Bank Group, (2016), available at <http://eba.worldbank.org/~media/WBG/AgriBusiness/Documents/Reports/2016/EBA16-Full-Report.pdf>

### 3. Warehouse Receipts System

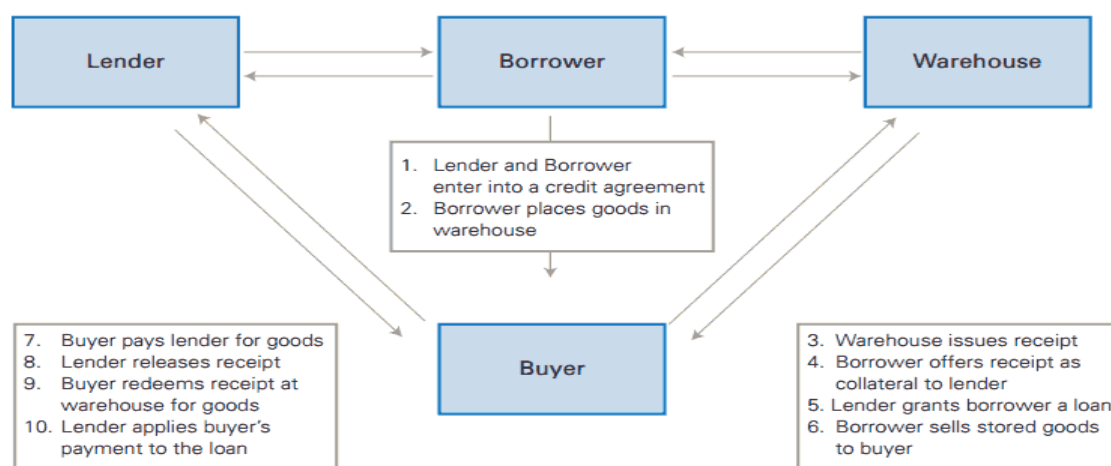
Collateral and access to finance remain a critical challenge for small farmers and will be key factors in transforming agriculture from subsistence and low value activities into an innovative, commercially oriented, internationally competitive sector. However, farmers, especially resource-poor smallholders, are often unattractive credit candidates for financial institutions because of their inability to hold sufficient recognized collateral and the unpredictable, fragmented, and unstructured nature of much of the agricultural sector. The warehouse receipt system (WRS) offers a potential solution.

Although a relatively new concept in India, the WRS holds great promise. In the existing traditional market system, commission agents, traders, and middlemen play a prominent role in connecting farmers with market services and credit. The informal credit system is still prevalent, which substantially limits farmers’ access to better credit services.

The warehouse receipt system (See Figure 11) involves the storage and quality control of produce deposited by farmers as well as a new financing instrument, a Warehousing Receipt (WR) that can be used by farmers as collateral for short-term borrowing to obtain working capital. It aims to improve liquidity in rural areas and encourage standards-based warehousing of agricultural commodities.

**Figure 11: Warehouse Receipt Financing**

Basic features of a warehouse receipt financing transaction

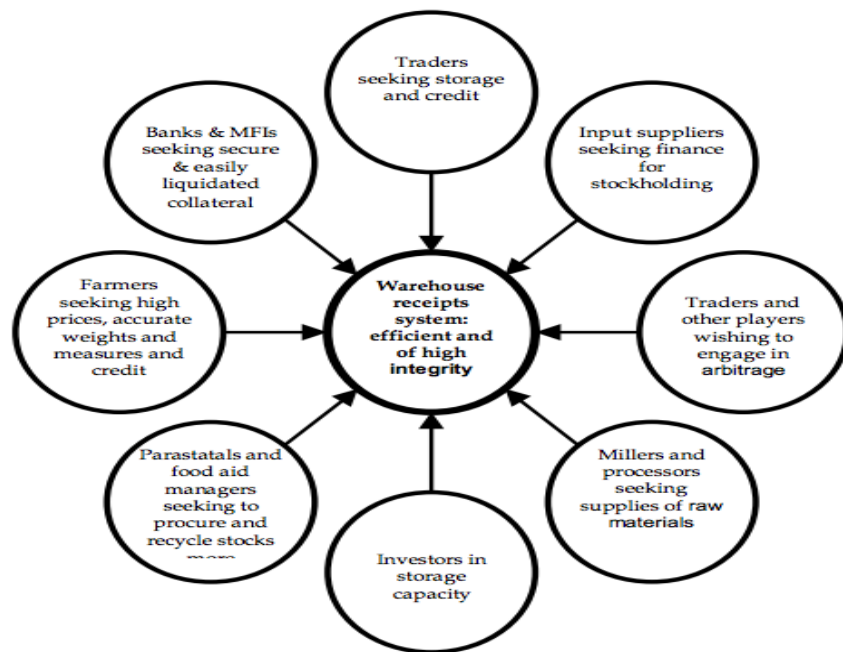


Source: International Journal for Scientific and Technological Research, 2012



Warehouse receipts must be functionally equivalent to stored commodities with well-defined rights, liabilities, and duties of each party to a warehouse receipt, including the farmer, bank, or warehouse owner (See Figure 12).<sup>215</sup> They must be freely transferable by delivery and endorsement, and the holder of a warehouse receipt must be first in line to receive the stored goods or their fungible equivalent on liquidation or default of the warehouse. A depository system whereby deposits can be shared is also important and can be established under the Warehousing (Development and Regulation) Act. A central registry of agricultural commodities is needed as well. A robust legal framework is a prerequisite to warehouse receipts being treated as secured collateral. While a legal framework does exist, further steps are necessary to make sure that the system is fully functional.

**Figure 12: Stakeholders in the Warehouse Receipt System<sup>216</sup>**



Source: International Journal for Scientific and Technological Research, 2012

<sup>215</sup> Devajit Mahanta, *Review of Warehouse Receipt as an Instrument for Financing in India*, International Journal of Scientific & Technology Research, Vol. 1, Issue 9 (October 2012), available at <http://www.ijstr.org/final-print/oct2012/Review-Of-Warehouse-Receipt-As-An-Instrument-For-Financing-In-India.pdf>.

<sup>216</sup> Devajit Mahanta, *Review of Warehouse Receipt as an Instrument for Financing in India*, International Journal of Scientific & Technology Research, Vol. 1, Issue 9 (October 2012), available at <http://www.ijstr.org/final-print/oct2012/Review-Of-Warehouse-Receipt-As-An-Instrument-For-Financing-In-India.pdf>.

Under WRS, the depositor may be a producer, farmers' group, trader, exporter, processor, or any individual or corporate entity. The warehouse receipts are issued by warehouse operators as evidence that specified commodities of stated quantity and quality have been deposited at particular locations by named depositors. The warehouse operator holds the stored commodity in safe custody; implying he is legally liable to make good any value lost through theft or damage by fire and other catastrophes but has no legal or beneficial interest in the stock. Accordingly, in case of liquidation, the warehouse operator's creditors will not be able to seek recourse to the commodities stored since legal title remains with the depositor or bona fide holder of the receipt. Information asymmetry also exists between the different actors which can leave the users of a WRS, both lenders and depositors, unable to judge the value of receipts issued. In such a situation, there is a scope for high-premiums to be charged.<sup>217</sup>

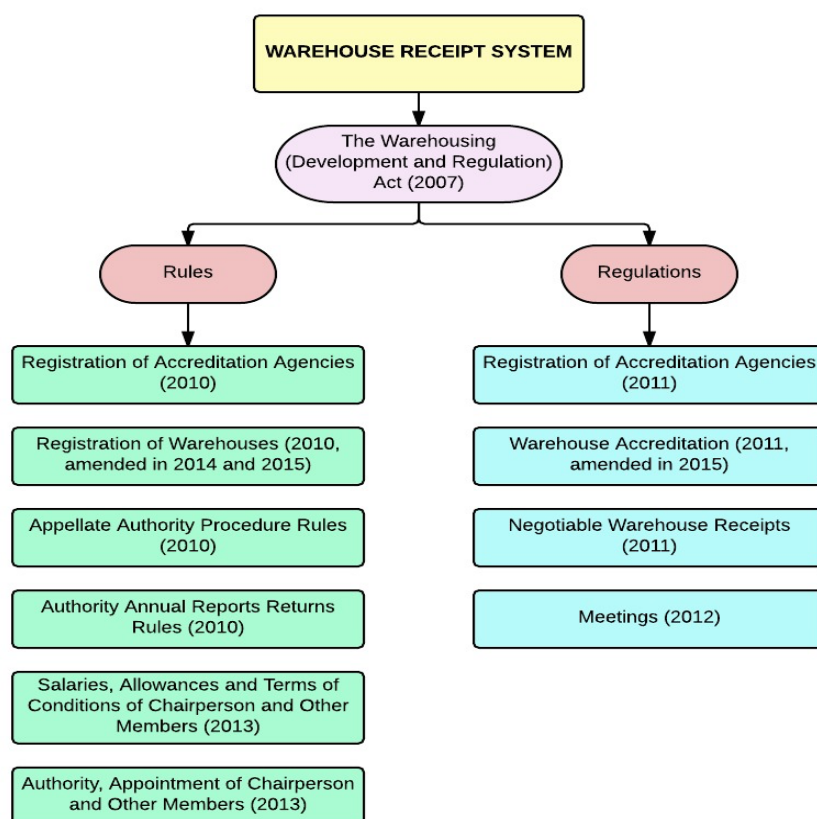
### *Warehouse Development and Regulatory Authority (WDRA) and the Regulatory System*

The Warehousing (Development and Regulation) Act, 2007 is the legal framework that provides for the development and regulation of warehouses, negotiability of warehouse receipts, establishment of a Warehousing Development and Regulatory Authority (WDRA), and related matters. The Negotiable Warehouse Receipts (NWRs) issued by the warehouses registered under this Act would help farmers' access financing against NWRs, and the NWRs could become a prime tool of trade. The various Rules and Regulations issued and implemented by the WDRA govern the registration, accreditation, and management of warehouses that operate in the NWR system (See Figure 13).

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<sup>217</sup> *Concept Note for Registration of Warehouses under the Warehousing Development and Regulation Act, 2007*, National Institute of Public Finance and Policy, May 28, 2015, available at <http://wdra.nic.in/2comments.pdf>

**Figure 13: Snapshot of Warehouse Receipt Regulation**



Source: New Markets Lab, 2016

The WDRA has appointed 14 Accreditation Agencies for warehouse accreditation located in a few states. These Agencies are established to ensure that basic scientific warehousing facilities are available and that proper codes of practice are followed by the warehouses.<sup>218</sup> Only one among these is located in Rajasthan (Jaipur). Increasing the number and capability of these agencies could help meet the rising demand for recognized warehouses.

In consultation with the Department of Agriculture and Cooperation and Farmers Welfare, Government of India, National Horticulture Board (NHB), National Horticulture Mission (NHM) and other stakeholders, the Warehousing Development and Regulatory Authority (WDRA) has introduced a negotiable warehouse receipt system in warehouses (cold storage) for major horticultural produce so that the farmers producing horticultural crops may also take advantage

<sup>218</sup> Warehousing Development and Regulatory Authority homepage, Department of Food and Public Distribution, Government of India, available at <http://wdra.nic.in/> [last accessed March, 18, 2016]

of the benefit of bank loans against the deposit of their produce in the registered warehouses. This will help in commercialization, effective postharvest management, and integrated development of agriculture, including horticulture. The WDRA has notified 26 horticulture commodities for the issuance of NWRs by the registered warehouses (cold storage). While this is a positive step, clear regulations that pertain to cold storage facilities regarding quality control, maintenance of international standards, and other such aspects must be formulated to effectively serve the sector.

Nearly 80 percent of the organized warehousing sector in India is controlled by government and public sector units, with only about 20 percent within the private sector (See Table 7). In Rajasthan, the Central and State Warehousing Corporations were established to set up and run warehousing facilities in the agricultural and other sectors.

**Table 7: Public and Private Distribution of Warehouses**

SI. No.	Name of the organisation /Sector	Storage capacity in million tons
1.	Food Corporation of India (FCI)	38.34
2.	Central Warehousing Corporation (CWC)	10.30
3.	State Warehousing Corporations (SWCs) and State agencies	34.84
4.	Cooperative Sector	15.07
5.	Private Sector	18.97
	<b>Total</b>	<b>117.52</b>

Source: Food Corporation of India and Central Warehousing Corporation portals and Department of Food and Public Distribution Grain Bulletin, 2014

After the establishment of the WDRA and the warehouse receipts framework, organizations such as the Central Warehousing Corporation (CWC), State Warehousing Corporations, State Agricultural Marketing Departments/Boards, and collateral management service providers (National Collateral Management Service Limited and National Bulk Handling Corporation (NBHC)) have been instrumental in providing the physical and operational infrastructure to develop the warehouse receipts system. NCML, which is well invested in Rajasthan, is one of the two major collateral management companies operating in the warehousing space in India. The company manages commodities of over \$1.5 billion through 900 bank branches across 18 states and 3500 storage structures.<sup>219</sup> It was also the first private company to issue a negotiable warehouse receipt as allowed under the Warehouse (Development & Regulation) Act, 2007

<sup>219</sup> *Collateral Management in Agricultural Finance in India*, Agriculture Finance Support Facility, available at <http://www.agrifinfacility.org/resource/collateral-management-agriculture-finance-india>

(‘Warehousing Act’). This is a promising signal, but very few warehouses are as yet registered with the warehouse authority, as required by the Warehousing Act, which is still in a nascent stage of implementation.

The WDRA has also engaged with the Department of Financial Services, Ministry of Finance for setting internal targets within banks for lending against negotiable warehouse receipts. In order to encourage development of modern warehousing facilities, the Department of Financial Services has requested banks to:

- a) Set internal targets for lending against warehouse receipts;
- b) Improve terms for finance against warehousing receipt of registered warehouses; and
- c) Introduce conditions of registration of warehouses with WDRA for financing.

However, WDRA’s mandate covers only negotiable warehouse receipts and not the regulation of the entire warehousing space, which remains a domain of central warehousing regulations and state bodies set up under them.<sup>220</sup> The Warehousing Corporation Act, 1962 provides for the incorporation and regulation of agricultural warehousing corporations storing produce and certain other commodities. Even non-negotiable warehouse receipts do not fall under the regulatory ambit of the WDRA, and, in case of default, the WDRA does not have the power to ensure the lender safe return of the borrowed capital.<sup>221</sup> The regulator has no direct control over the actions of the accredited warehouses, which may move stocks around. Owing to its regulatory limitations, the WDRA has shown limited progress in building a warehouse receipt sector.

With respect to the role of commercial banks active in this field, a number of them have sensitized their field functionaries about the warehouse receipt system and directed them to advise warehouse owners to get their warehouses registered with the WDRA. Branches of banks have been advised to ensure that warehouses financed by them improve their infrastructure to adhere to WDRA standards. Banks can also offer better and more preferential terms for financing against negotiable warehouse receipts issued by the registered warehouses. In this environment, better direct engagement with more private sector banks and assistance to implement the warehouse receipt system in the form of training programs to bank staff and

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<sup>220</sup> *Collateral Management in Agricultural Finance in India*, Agriculture Finance Support Facility, available at <http://www.agrifinfacility.org/resource/collateral-management-agriculture-finance-india>

<sup>221</sup> *Collateral Management in Agricultural Finance in India*, Agriculture Finance Support Facility, available at <http://www.agrifinfacility.org/resource/collateral-management-agriculture-finance-india>

implementation guidelines could further expand the warehouse receipts market and strengthen use of warehouse receipts as a financial instrument.

### Market Failures and Alternative Models for Warehouse Receipts Systems

Although a regulated warehouse receipt market is often considered desirable, it can be difficult to implement. In such a case, the market will often work around the absence of a full system for warehouse receipts that regulates the warehouse operator and ensures the value of the stored commodities. In India, the market has developed its own solutions to overcome shortcomings in regulation and enforcement. These include:

- 1) *Collateral Management Companies (CMCs)*: Collateral managers, who act as guarantors for the value of produce and forge trust with the financial institutions have become in the Indian market more generally and in Rajasthan in particular. Tripartite collateral management agreements have developed between the banks, borrower, and the collateral manager. However, one of the major drawbacks of this system is often the exclusion of small-scale producers and traders, since the main users of a collateral management system tend to be large-scale operators who own or can rent entire warehouses or silos and can afford the transaction costs involved.

Large private logistics companies independently engage with private banks to recognize their warehouse receipts and develop a strong lending arrangement. However, smaller, unorganized warehouses do not have the capacity to engage directly with banks and are, therefore, left out of the warehouse receipts industry. In order to attract greater private sector participation in the warehouse receipt system, including warehousing closer to the farm gate, the process of accrediting logistics and warehousing companies could be strengthened and the accreditation and renewal procedures simplified.

- 2) *Closed User Group (CUG)*: CUGs in the warehousing sector bridge the information asymmetry problem by generating and sharing relevant information with commodities exchanges, commission agents, exporters, banks, insurance companies, and producers.<sup>222</sup>

The National Commodity and Derivatives Exchange (NCDEX) operated CUG is an example of a CUG that attempts to solve the problem of market failure by replicating the regulatory interventions that state regulation should solve.<sup>223</sup> In order to ensure the sanctity of the physical settlement of commodities traded on the exchange, NCDEX

<sup>222</sup> *Concept Note for Registration of Warehouses under the Warehousing Development and Regulation Act, 2007*, National Institute of Public Finance and Policy, May 28, 2015, available at <http://wdra.nic.in/2comments.pdf>

<sup>223</sup> *Concept Note for Registration of Warehouses under the Warehousing Development and Regulation Act, 2007*, National Institute of Public Finance and Policy, May 28, 2015, available at <http://wdra.nic.in/2comments.pdf>

operates a CUG of warehouse service providers (WSPs) that has 405 accredited warehouses with a holding capacity of 2 million metric tons. Additionally, NCDEX has its own inspection, audit and monitoring mechanisms to which the NCDEX registered WSPs must adhere. Such examples of CUGs create a premium market within the warehousing sector. CUGs operated by private players however cannot enhance information availability and regulation throughout the market. The high costs of monitoring and supervision are not feasible for private market participants. Therefore, WDRA will have to intervene and create a regulatory framework to fill the regulatory and information gap within the warehousing sector.

Different models of WRS also exist. For example, to address the exclusion of small rural farmers, a model was developed and implemented in Ghana that focused on inventory credit systems targeting farmers' groups.<sup>224</sup> Run by the NGO TechnoServe, this approach involved deposit of storable commodities in small village warehouses, with storage capacity ranging from 50 tonnes to 1,000 tonnes. The participating groups acted as warehouse operators, with oversight by the NGO. Financing was usually secured against a guarantee by the NGO (in the Ghana case, TechnoServe provided a guarantee equivalent to 100 percent of the inventory credit advanced). In Tanzania, IFAD funded a similar pilot where commercial collateral management companies were contracted to manage deposited commodities. The project heavily subsidized the collateral management fees.<sup>225</sup> Although these examples may generate significant immediate benefits to participating farmers, they can raise challenges of sustainability because of the small volumes of produce involved. Therefore, a regulated system that incorporates aggregation models may be necessary over the long run. Some lessons can be drawn from other models, however, such as the need for more active participation of FPOs in the WRS.

From the perspective of the farmer, focus must be placed on ensuring the quality of the produce that is to be stored. The warehouse operator will play a critical role and acts as a legal guarantor of the warehouse stock. The warehouse owner will be responsible for indemnification if the quantity and quality do not match the stock held. Proper maintenance and periodic inspection of the warehouse are necessary to making the system work. Since continuous inspection is not a possibility, some form of insurance will be needed in case challenges arise. (The Warehousing

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<sup>224</sup> Gideon Onumah, *Implementing Warehouse Receipt Systems in Africa: Potential and Challenges*, Africa Agricultural Markets Program (AAMP), September 6-7, 2010, available at [http://fsg.afre.msu.edu/aamp/sept\\_2010/aamp\\_lilongwe-onumah-warehouse\\_receipt\\_systems.pdf](http://fsg.afre.msu.edu/aamp/sept_2010/aamp_lilongwe-onumah-warehouse_receipt_systems.pdf)

<sup>225</sup> Gideon Onumah, *Implementing Warehouse Receipt Systems in Africa: Potential and Challenges*, Africa Agricultural Markets Program (AAMP), September 6-7, 2010, available at [http://fsg.afre.msu.edu/aamp/sept\\_2010/aamp\\_lilongwe-onumah-warehouse\\_receipt\\_systems.pdf](http://fsg.afre.msu.edu/aamp/sept_2010/aamp_lilongwe-onumah-warehouse_receipt_systems.pdf)

(Development and Regulation) Act, 2007 mandates insurance coverage for accredited warehouses).<sup>226</sup>

### Online Markets and Warehouse Receipts Regulation

When a well-developed WRS underpins the operation of a mature commodity exchange, lenders tend to interlock agricultural production credit with crop marketing through the receipt system.<sup>227</sup> This minimizes the risk of loan default by ensuring that producers can obtain better prices. Lenders are able to service the loans but also exercise greater control over the main security, which is the deposited crop.<sup>228</sup>

In 2003-04, the Government of India initiated major steps towards introduction of futures trading in commodities, including agricultural commodities. This included removal of prohibitions on futures trading in all the commodities by issue of a notification and setting up of the National Level Commodity Exchanges. A coriander futures contract was launched on the NCDEX platform in August 2008 and has witnessed considerable gain in trade volume since its launch. These exchanges have introduced various measures, which would increase efficiency of agricultural commodity marketing in the country. One of them is development of a system of physical delivery of commodities backed by a warehouse receipt system to help eliminate rigidities inherent in the trading of physical goods by providing for a mix of protection against both price and quality risks.<sup>229</sup> Efforts have also been made in developing a physical infrastructure by NCDEX in collaboration with the Central Warehousing Corporation and quality assurance and grading agencies. NCDEX has set up a National Collateral Management Services Company, which would extend help in setting up warehouses, their accreditation and management of collaterals for the banks.<sup>230</sup>

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<sup>226</sup> Section 11(1) Warehousing (Development and Regulation) Act, 2007 “A warehouse receipt, which may be either in writing or in electronic form, shall be a document of title to goods in writing if it contains all the following particulars (k) name of the insurance company indemnifying for fire, flood, theft, burglary, misappropriation, riots, strikes or terrorism;”

<sup>227</sup> Gideon Onumah, *Implementing Warehouse Receipt Systems in Africa: Potential and Challenges*, Africa Agricultural Markets Program (AAMP), September 6-7, 2010, available at [http://fsg.afre.msu.edu/aamp/sept\\_2010/aamp\\_lilongwe-onumah-warehouse\\_receipt\\_systems.pdf](http://fsg.afre.msu.edu/aamp/sept_2010/aamp_lilongwe-onumah-warehouse_receipt_systems.pdf)

<sup>228</sup> Gideon Onumah, *Implementing Warehouse Receipt Systems in Africa: Potential and Challenges*, Africa Agricultural Markets Program (AAMP), September 6-7, 2010, available at [http://fsg.afre.msu.edu/aamp/sept\\_2010/aamp\\_lilongwe-onumah-warehouse\\_receipt\\_systems.pdf](http://fsg.afre.msu.edu/aamp/sept_2010/aamp_lilongwe-onumah-warehouse_receipt_systems.pdf)

<sup>229</sup> Angad Singh Maravi, *Performance Analysis of Indian Agricultural Commodity Market*, International Journal of Commerce, Business and Management (IJCBM), Vol. 4, No.2, April 2015, available at <http://www.ircast.org/ijcbm/papers/vol4no22015/18vol4no2.pdf>

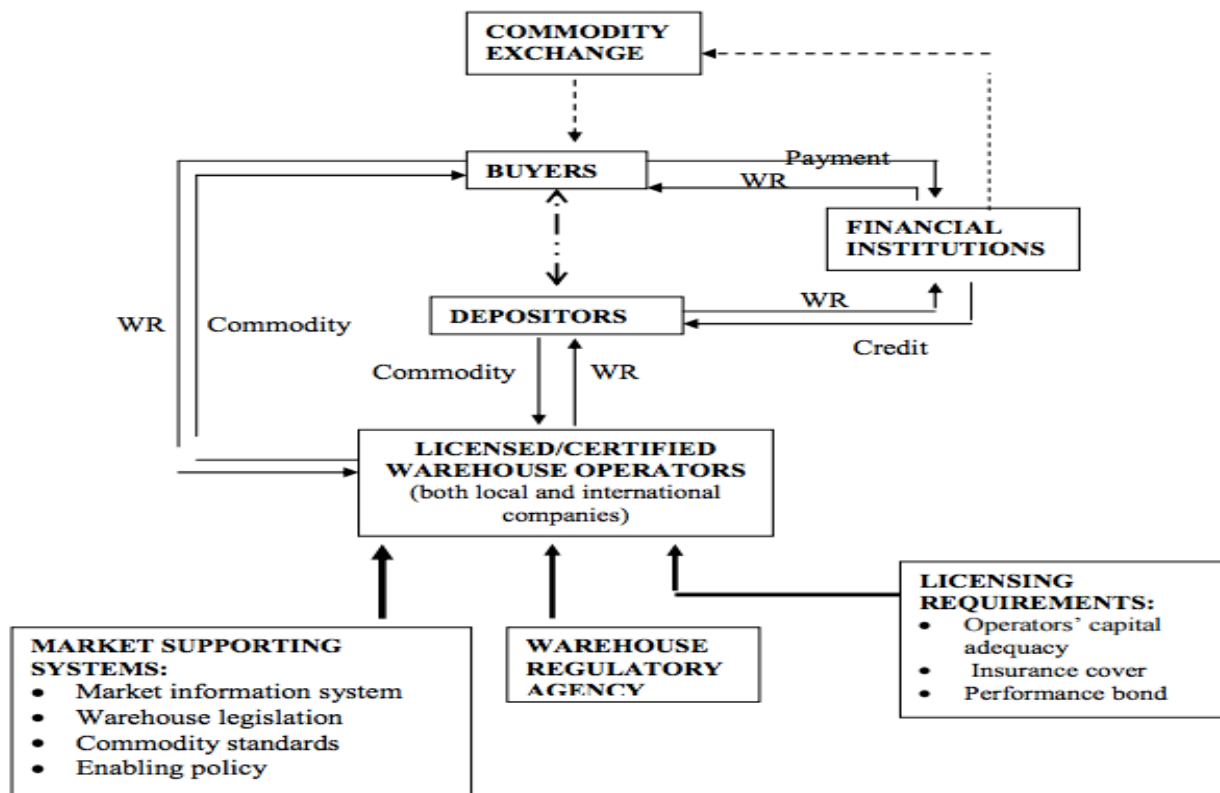
<sup>230</sup> *Report of the Working Group on Warehouse Receipts and Commodity Futures*, Department of Banking Operations and Development, Reserve Bank of India, April 2005, available at [http://www.prindia.org/uploads/media/1167471035/bill67\\_2007010167\\_Report\\_ofRBI\\_working\\_group\\_on\\_warehouse\\_receipts\\_and\\_commodity\\_futures.pdf](http://www.prindia.org/uploads/media/1167471035/bill67_2007010167_Report_ofRBI_working_group_on_warehouse_receipts_and_commodity_futures.pdf)



The Government of India has also launched a national level e-marketing agricultural platform with the objective of providing a unified online market integrating all the regulated mandis in the country. However, integration between the warehouse receipts and commodities markets has been inadequate in the current system. With both comprehensive regulations and better implementation mechanisms, the warehouse receipts system and futures trading system could be strengthened and better integrated. (See Figure 14 and Box 10)

A good example for such a system is in South Africa, where a well-developed silo receipt system underpins the operation of the most mature commodity exchange in Africa (SAFEX). Lenders in this system tend to interlock agricultural production credit with crop marketing, through the receipt system. This minimizes the risk of loan default by ensuring that producers can obtain better prices, which enables them to service the loans. But also, lenders have greater control over the main security, which is the deposited crop.

*Figure 14: Regulated Warehouse Receipt and Commodity Exchange System*



Source: Africa Agricultural Markets Program (AAMP), 2010

***Box 10: Good Practices in Warehouse Receipts Systems<sup>231</sup>***

- Should require warehouse receipt operators to file a bond with the regulator or pay into an indemnity to secure performance of obligations as an operator.
- Should require that warehouse and stored goods be insured against fire, earthquakes, theft, burglary and other damage.
- Should require that both electronic and paper-based receipts be valid.
- Should define the information required to be stated on a receipt, including the location of storage, the quantity and quality of goods and the information on security interest over the goods, such as the certificate of pledge.

***Regulatory Options:***

- **Strengthen Implementation of Warehouse Receipts Regulation at the State Level, Including Through Enhanced Engagement with FPOs, with a Focus on Better Implementation of Quality Control Processes and Measures for Contract Breach that Would Address Needs of Both Farmer and Warehouse Operator:** A successful WRS model involves fostering the development of a national network of privately managed certified or accredited warehouses, issuing transferable warehouse receipts and where trust is developed through a robust certification/licensing and inspection system.<sup>232</sup> An appropriate legal, regulatory, and institutional environment that could guarantee basic physical and financial standards is required.<sup>233</sup> Key elements of that are:
  - i. Efficient, transparent and speedy process
  - ii. Enforcement of commodity grading, quality and weight standards

<sup>231</sup> *Enabling the Business of Agriculture 2016: Comparing Regulatory Good Practices*, World Bank Group, available at <http://eba.worldbank.org/~media/WBG/AgriBusiness/Documents/Reports/2016/EBA16-Full-Report.pdf>

<sup>232</sup> Gideon Onumah, *Implementing Warehouse Receipt Systems in Africa: Potential and Challenges*, Africa Agricultural Markets Program (AAMP), September 6-7, 2010, available at [http://fsg.afre.msu.edu/aamp/sept\\_2010/aamp\\_lilongwe-onumah-warehouse\\_receipt\\_systems.pdf](http://fsg.afre.msu.edu/aamp/sept_2010/aamp_lilongwe-onumah-warehouse_receipt_systems.pdf)

<sup>233</sup> *Report of the Working Group on Warehouse Receipts and Commodity Futures*, Department of Banking Operations and Development, Reserve Bank of India, April 2005, available at [http://www.prindia.org/uploads/media/1167471035/bill67\\_2007010167\\_Report\\_ofRBI\\_working\\_group\\_on\\_warehouse\\_receipts\\_and\\_commodity\\_futures.pdf](http://www.prindia.org/uploads/media/1167471035/bill67_2007010167_Report_ofRBI_working_group_on_warehouse_receipts_and_commodity_futures.pdf)

iii. Robust contract enforcement and dispute settlement mechanisms in case of default<sup>234</sup>

The WDRA notes that while the framework for accreditation, inspection, and implementation of standards is in place,<sup>235</sup> additional focus in some areas, better implementation, and infrastructure capacity are required to effectively regulate the WRS market. This capacity will require strengthening the WDRA administration, creating IT-based internal processes and systems, creating monitoring and surveillance tools, and capacity building.<sup>236</sup> In addition, strengthened engagement with private sector banks could further expand the warehouse receipts market and strengthen use of warehouse receipts as a financial instrument.

- **Focus on Effective Participation by Smallholder Farmers through FPO model:** smallholder participation and system viability can be achieved if the capacity of small farmers groups to aggregate and undertake collective marketing is strengthened. The direct financial benefits to members are highest when aggregation, depositing and marketing are undertaken by primary-level farmers group rather than by intermediaries and traders. There can be significant payoffs if governments, NGOs and donors support the development of strong FPOs. A good example for such a practice is the rural cooperative model in Tanzania to export cotton (See Box 11).

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<sup>234</sup> Section 35 of Warehousing Development and Regulatory Authority (Warehouse Accreditation) Act, 2007: Powers and functions of Authority (2) Without prejudice to the generality of the foregoing provisions, the powers and functions of the Authority shall include the following, namely (d) to regulate the process of pledge, creation of charges and enforcement thereof in respect of goods deposited with the warehouse

<sup>235</sup> Warehousing Development and Regulatory Authority (Warehouse Accreditation) Regulations, 2011 (amended in 2015)

<sup>236</sup> Warehousing Development and Regulatory Authority homepage, Department of Food and Public Distribution, Government of India, available at <http://wdra.nic.in/> [last accessed March, 18, 2016].

***Box 11: Using WRS Enables Rural Cooperative in Tanzania to Export Cotton***<sup>237</sup>

A farmer group, the Oridoyi Rural Cooperative Society (ORCS) in Tanzania, has used the WRS in marketing its cotton since 2002 and was able to raise cotton output by its members from just over 130,000 kg of seed cotton to the peak of over 1,100,000 kg of seed cotton over a period of four years. Seed cotton delivered by the members to the ORCS is warehoused and ginned for a fee by the KNCU Cotton Ginnery at Moshi. Financing is usually provided by the CRDB Bank Ltd, a major local commercial bank.

In 2005-06, the ORCS was able to market lint after ginning directly to a UK-based cotton merchant, with the assistance of a local resident broker. Quality was certified using modern equipment owned by the Tanzania Cotton Board, mitigating quality uncertainty. The cooperative used retained profits to finance cultivation of additional hectares for each member, thus increasing output by the group.

- Strengthen Links Between WRS, Commodities Exchanges, and Online Markets:** In order for the futures market to work, there must be information symmetry, maintenance of standards, and contract enforcement capacity. The legal and regulatory system must function to ensure contract enforcement and monitor warehouses so that they do not issue multiple receipts for a single lot.<sup>238</sup> For futures contracts, participants must have confidence that contracts will be recognized by the legal system and that contract obligations will be enforced. In India, it takes about 56 procedures and over 1420 days to enforce a contract, costing 39.6 percent of the debt to be recovered.<sup>239</sup> Contract enforcement needs to be improved to build a credible system in the commodities and WRS markets.

The WDRA also needs to correct the information asymmetry between various players in the warehousing sector in order to ensure that information regarding quantity, quality, and value of the stored produce is available to the depositors, warehouse operators, and lenders. This will create transparency and credibility in the WRS system and help enhance the commodities markets.

<sup>237</sup> Gideon Onumah, *Implementing Warehouse Receipt Systems in Africa: Potential and Challenges*, Africa Agricultural Markets Program (AAMP), September 6-7, 2010, available at [http://fsg.afre.msu.edu/aamp/sept\\_2010/aamp\\_lilongwe-onumah-warehouse\\_receipt\\_systems.pdf](http://fsg.afre.msu.edu/aamp/sept_2010/aamp_lilongwe-onumah-warehouse_receipt_systems.pdf)

<sup>238</sup> Shahidur Rashid, Alex Winter-Nelson and Philip Garcia, *Purpose and Potential for Commodity Exchanges in African Economies*, International Food and Policy Research Institute (IFPRI), November, 2010, available at <http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/5231>

<sup>239</sup> *Enforcing Contracts*, Doing Business: Measuring Business Regulations, World Bank Group, available at <http://www.doingbusiness.org/data/exploretopics/enforcing-contracts>

Taking into account the development of commodities markets in recent years, and the new central government initiative to establish a national online market (e-NAM), integration between the warehouse receipts and commodities markets is necessary. With both comprehensive regulations and better implementation mechanisms the warehouse receipts system and futures trading system could be strengthened and better integrated. In addition, a national grading system for independent determination and verification of the quantity and quality of stored commodities also should be established.<sup>240</sup> Appropriate corresponding state measures incorporating the commodities markets and the online trading platforms in Rajasthan also will be necessary.

An effective example for such a model is the Karnataka state agriculture marketing system that established an online marketing platform ‘*Krishi Marata Vahini*.’ This was designed to implement a policy initiative under the Karnataka Agricultural Marketing Policy (2013) to create a statewide-networked virtual market that links regulated markets and warehouses with assaying and grading facilities and other necessary infrastructure.<sup>241</sup>

- **Increase Farmer Awareness:** By all accounts, the WRS is underused, and many farmers are not aware of the system and continue to resort to informal rural credit services. Familiarity with different financial instruments is low, particularly among smallholder farmers. While warehouse receipt financing facilities are becoming more available, greater awareness and education will help farmers become familiar with post-harvest funding facilities to improve their financial stability. Through specialized agencies and programs, both the WDRA and State of Rajasthan could offer training and information services to farmers.

## C. PROCESSING

### 1. Product and Food Safety Standards

In India, growing consumption of fruits and vegetables and demand for processed food holds tremendous opportunity in the food processing industry. The industry has high employment

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<sup>240</sup> *Report: Committee for Strengthening Negotiable Warehouse Receipts by the Warehousing Development and Regulatory Authority in the Country*, Department of Food and Public Distribution, Government of India, February 18, 2015, available at <http://wdra.nic.in/FinalBook.pdf>

<sup>241</sup> *Karnataka Agricultural Marketing Policy (2013)*, Department of Cooperation, Government of Karnataka, available at <http://krishimaratavahini.kar.nic.in/Downloads/ENGLISH%20KARNATAKA%20AGRICULTURAL%20MARKETING%20POLICY%202013.pdf>

potential, can boost exports of agro-products, and can also provide better returns to farmers for their produce.<sup>242</sup> However, this can be viable only if product and food safety standards are effectively enforced throughout the country.

The food processing industry is typically divided into two distinct processes: primary and secondary. Primary processing is the method by which raw agricultural produce like milk, meat and fish are converted to commodities fit for human consumption by cleaning, grading, sorting, and packing, without changing the physical properties of produce. Secondary processing (and sometimes tertiary processing) usually deals with higher levels of processing where new or modified products are manufactured, which necessarily involves changes in physical properties of produce.<sup>243</sup> Further, processing is typically segmented by sector, such as dairy, fruits and vegetables, grains and cereals, fisheries, meat and poultry, and consumer foods, sometimes with different rules and regulations applying to different sectors.

The Food Safety and Standards Act, 2006 (amended in 2014) is the primary law for the regulation of food products and the formulation and enforcement of food safety standards in the country. The Act is intended to be an “umbrella law” for food safety by consolidating older laws, rules and regulations like the Prevention of Food Adulteration Act, 1954; Fruit Products Order, 1955; Vegetable Oil Products (Control) Order, and others. The salient features of the Act are:

- Movement from multi-level and multi-department control to a single line of command
- FSSAI as a single reference point for all matters relating to Food Safety and Standards, Regulations and Enforcement
- Decentralization of licensing for manufacture of food products
- Integrated response to strategic issues like Novel foods, Health Foods, Nutraceuticals, GM foods, international trade, and the like
- Investors friendly regulatory mechanism with emphasis on self-regulation and capacity building
- Emphasis on gradual shift from regulatory regime to self-compliance
- Consistency between domestic and international food policy measures without reducing safeguards to public health and consumer protection

<sup>242</sup> *Food Safety in India - Regulatory Framework and Challenges*. Swaniti Initiative (2015), available at <http://www.swaniti.com/wp-content/uploads/2015/06/Food-safety-in-India-1.pdf>.

<sup>243</sup> See *Agri-food Processing Sector in Gujarat State - India*. Netherlands Enterprise Agency, (September 2015), available at [https://www.rvo.nl/sites/default/files/2015/09/Food percent20Processing-September-2015-Gujarat.pdf](https://www.rvo.nl/sites/default/files/2015/09/Food%20Processing-September-2015-Gujarat.pdf)

- Adequate representation of government, industry organizations, consumers, farmers, technical experts, retailers etc.
- Compounding and Adjudication of cases – to reduce court’s workload and expedite the disposal of cases
- Enforcement of the legislation by the State Governments/UTs through the state Commissioner for Food Safety, his officers and Panchayat Raj/local municipal bodies

Indian food safety regulations, as implemented by the FSSAI, are primarily based on international standards through the CODEX Alimentarius. CODEX Alimentarius or ‘Food Code’ was established by the Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization in 1963 to develop harmonized international food standards, which protect consumer health and promote fair practices in food trade.<sup>244</sup>

The Food Safety and Standards Regulations, as they relate to the Food Safety and Standards (Packaging and Labeling) Regulations 2011, provide for detailed provisions for packing and labeling for processed fruit and vegetable products and spices. However, they do not cover raw fruits and vegetables.

Product and food safety standards also have a particularly significant impact on export potential. Several of the most common ways of regulating trade through non-tariff means are technical barriers to trade (TBT) measures and food safety measures protecting animal and plant health (sanitary and phytosanitary (SPS) measures). Both TBT and SPS measures can include a number of elements. For example, TBT measures include not only product specifications but also process and production methods, including applicable administrative provisions with which compliance is mandatory. TBT measures may also include terminology, symbols, packaging, marking and labeling requirements as they apply to a product, process, or production method. SPS measures cover public health and food safety objectives and include laboratory testing, quarantine, and procedures for registering fertilizers, chemicals, and seeds.

Despite having a legal framework in place, India still struggles with effective enforcement of food safety norms and standards. One major reason for this is the insufficient number of laboratories in the country. The number of laboratories per million people in the country is far below other countries like China and the United States. There are only 70 accredited laboratories in operation in the country, out of which, nearly 27 percent are in Maharashtra alone and another 41 percent are located only in five States (Andhra Pradesh, Gujarat, Rajasthan, Tamil Nadu and

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<sup>244</sup> CODEX International Food Standards homepage, Food and Agriculture Organization of the United Nations (FAO) and the World Health Organization, available at <http://www.fao.org/fao-who-codexalimentarius/en/>, [last accessed on May 7, 2016]

Uttar Pradesh).<sup>245</sup> In Rajasthan, there are only three laboratories, all located in Jaipur.<sup>246</sup> There is also an urgent need to upgrade the infrastructure in most of the food testing laboratories. Most Food and Drug Administrations in the Indian States operate at far below the desired capacity. In many cases, laboratories have had to be shut down due to the lack of food analysts.

There is generally a high capital cost associated with the technology for food processing and marketing. This leads to higher cost of produce and puts a burden on the government to make projects viable through financial assistance and funding schemes. Rajasthan recently launched the Rajasthan Agro-Processing and Agri-Marketing Promotion Policy 2015 for the promotion of agro-processing and reduction of postharvest losses. The policy is aimed at promoting agro-processing industries and ensuring competitive prices to farmers through financial incentives and facilities. The financial incentives, *inter alia*, include a 5 percent interest subsidy on term loans for five years; a 50 percent exemption in land tax, electricity duty, and mandi cess for seven years; and a 50 percent exemption in stamp duty, conversion charges, and entry tax on plant and machinery in the state. The policy also states that investors in agro-processing sectors, with investments up to Rs 25 lakh, shall be granted a 30 percent capital subsidy and a 20 percent employment generation subsidy on VAT and CST deposited over a period of seven years.<sup>247</sup>

### **Regulatory Options:**

- **Strengthen State Level Implementation of Standards:** Under Section 16 of the Food Safety and Standards Act, 2006, one of FSSAI's key areas of focus is enforcement and administration of the Act in various parts of the country. The Authority is also obliged to promote general awareness of food safety and food standards. However, recognizing that effective enforcement of the provisions of the Act and the rules and regulations primarily rest with the States, the need for stronger state implementation is required.<sup>248</sup>

<sup>245</sup> M.S. Jairath and Purnima Purohit, *Food Safety Regulatory Compliance in India: A Challenge to Enhance Agri-Businesses*, Indian Journal of Agricultural Economics, Vol.68, No.3, July-Sept. 2013, available at [http://ageconsearch.umn.edu/bitstream/206346/2/Jairath\\_Purohit68\\_3.pdf](http://ageconsearch.umn.edu/bitstream/206346/2/Jairath_Purohit68_3.pdf)

<sup>246</sup> Notification April 1, 2015, Food Safety and Standards Authority of India, Ministry of Health and Family Welfare, Government of India, available at [http://www.fssai.gov.in/Portals/0/Pdf/Notification\\_Labs\\_List.pdf](http://www.fssai.gov.in/Portals/0/Pdf/Notification_Labs_List.pdf)

<sup>247</sup> *Rajasthan Agro-Processing and Agri-marketing Promotion Policy (2015)*, Government of Rajasthan, available at <http://resurgent.rajasthan.gov.in/resurgent-policies/rajasthan-agro-processing-and-agri-marketing-promotion-policy-2015.pdf>; See Also Joe C. Mathew, *Rajasthan Launches Policy to Promote Agro-Processing Industries*, Business Today, November 17, 2015, available at <http://www.businesstoday.in/sectors/agriculture/rajasthan-policy-to-promote-agro-processing-industries/story/225758.html>

<sup>248</sup> *Scheme for Associating Central / State Government Agencies, Consumers' Organizations, Non-Governmental Organizations and other Institutions including Government Universities / Colleges working in the area of food safety for undertaking Information, Education and Communication (IEC) activities on behalf of Food Safety and Standards Authority of India (FSSAI)*, Food Safety and Standards Authority of India, 2016, available at [http://www.fssai.gov.in/Portals/0/Pdf/Scheme\\_for\\_Financial\\_Assistance\\_for\\_Consumers\\_NGOs\\_12\\_08\\_2015.pdf](http://www.fssai.gov.in/Portals/0/Pdf/Scheme_for_Financial_Assistance_for_Consumers_NGOs_12_08_2015.pdf)



Section 9 of the Rajasthan APMC Act, 1961 (last amended in 2015) specifies that it is the duty of the Market Committee to provide and maintain standards in terms of quality of produce, grading and packing, among other things. Section 22J provides for the use of market development funds for improvement and regulation of markets and infrastructural development to maintain standards. A state-level focus on implementation of national and international standards at the farm and mandi levels could not only improve local consumption but also expand export markets. Collaborative efforts between state government agencies (including the APMC Board), non-governmental organizations, and other institutions including government universities and farmers' organizations could increase awareness and improve implementation. This could include the following key activities:

- i. Testing of key food products/ingredients and assessment of various aspects of food safety, including hygiene parameters followed by Food Business Operators as per the Food Safety Standards (Licensing and Registration) Regulation, 2011;
- ii. Regular monitoring of mandis and other market places to ensure maintenance of basic conditions as required under the food safety regulations; and
- iii. Training, capacity building, and awareness programs for farmers, food businesses and consumers.

## **2. Grading and Sorting**

While most of the Indian market currently depends upon fresh produce, urbanization and changes in eating habits will expand the market for packaged products. To meet both local demand and international standards for fruits and vegetables, handling, quality control, and processing infrastructure will be essential. The growth of retail chains in India opens up opportunities to farmers to connect to larger urban and export markets.

Grading in the horticultural value chain is a very important stage that minimizes waste, impacts the rate of return, and increases the export potential of produce, helping Indian enterprises compete in the international markets and increasing benefit to farmers and other stakeholders. In Rajasthan, sorting and grading are available at several pack houses. However, there is not an adequate packing facility provided by the local government in Jaipur mandis, although other modern marketing infrastructure is available.

### *Regulation of Grading and Sorting*

At the National level, the Directorate of Marketing and Inspection issues rules on grading and marketing of various agricultural commodities, including fruits, vegetables and spices (See Figure 15). Regionally, the Agricultural Produce Marketing Board and the Market Committee have shared responsibility for implementing standards and developing efficient grading and packaging systems for agricultural produce.

Under the National Fruits and Vegetables Grading and Marking Rules (2004 and amended in 2007, 2010 and 2012),<sup>249</sup> certain minimum standards are established for all produce. In addition, specific voluntary standards are prescribed for internal trade and at the producer level, but mandatory standards are set for export in order to meet the requirements and standards prescribed by importing countries. Grading of horticultural produce can be done at three stages:

- a) Internal Trade: Grading of agricultural commodities for internal trade is voluntary in nature and is carried out under the provisions of Agricultural Produce (Grading & Marking) Act, 1937. This Act is supplemented by specific rules for fruits and vegetables, and spices, namely Fruits and Vegetables Grading and Marking Rules (2004, amended in 2007) and Spices Grading and Marking Rules (2005).

The commodities graded under ‘AGMARK’ for internal trade are classified into two groups: decentralized commodities and centralized commodities. Decentralized commodities include those items, which do not require elaborate testing facilities. Assessment of their purity and determination of grade is mostly done on the basis of physical factors or relatively simple tests. Decentralized commodities include fruit and vegetables, among other crops. The APMC Board and respective market committees implement the grading of produce.

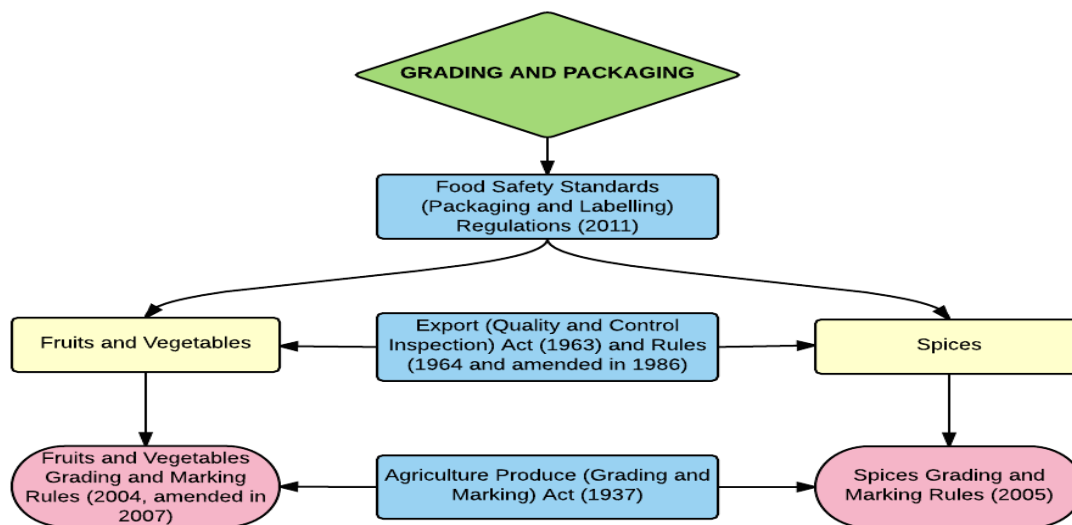
- b) Export: The Export (Quality Control & Inspection) Act, 1963 is administered by the Ministry of Commerce. The Act empowers the Central Government to:
  - Notify commodities which will be subject to quality control and/or inspection prior to export;
  - Establish standards of quality for such notified commodities; and
  - Specify the type of quality control and/or inspection to be applied to such commodities.

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<sup>249</sup> Fruits and Vegetables Grading and marking Rules 2004, Department of Agriculture and Cooperation- Ministry of Agriculture, Government of India, available at <http://agmarknet.nic.in/fveggmrules04.htm#rules>

- c) **Producer's Level:** In order to secure adequate return to the producer-sellers, a scheme of Grading at the Producers' Level was introduced to establish grading units in regulated markets.<sup>250</sup> The main objective of the scheme is to subject the produce to simple tests and assign a grade before produce is offered for sale, helping the producer to get prices commensurate with the quality of his/her produce. Spices, fruits, and vegetables are among the important commodities graded under this program. The scheme is being implemented by the States and Union Territories (UTs).

**Figure 15: Snapshot of Grading and Packaging Regulations**



Source: New Markets Lab, 2016

Most horticultural production from Rajasthan, and particularly Kota, is sold in local or regional markets. Since grading is not mandated for local consumption, it has not been widely used, and a statewide grading system is not fully in effect. As of 2012, the number of approved grading laboratories in Rajasthan was 178 (170 of which are owned by packers), which is one of the highest numbers in the country.<sup>251</sup> However, in terms of producer level grading units, there are

<sup>250</sup> Scheme for Development/Strengthening of Agricultural marketing Infrastructure, Grading and Standardization, 2008, Department of Agriculture and Cooperation- Ministry of Agriculture, Government of India, available at [https://www.nabard.org/pdf/Agriculture\\_Marketing\\_and\\_Infrastructure\\_Grading\\_and\\_Standardisation.pdf](https://www.nabard.org/pdf/Agriculture_Marketing_and_Infrastructure_Grading_and_Standardisation.pdf)

<sup>251</sup> *DMI Statistics 2011-12*, Directorate of Marketing and Inspection- Department of Agriculture and Cooperation, Government of India, available at <http://www.agmarknet.nic.in/agmstat2012.pdf>

only 36 in Rajasthan as opposed to states like West Bengal (224) and Madhya Pradesh (246). This clearly indicates a gap in grading infrastructure at the farm-gate level. Rajasthan's Agro-Processing and Agri-Marketing Promotion Policy (2015) was introduced to enhance such facilities by providing for benefits to private enterprises engaged in grading and other processing services.

***Regulatory Options:***

- Implement Grading Standards at State-level:** Mechanisms and tools must be designed to implement standards and monitor private grading facilities in order to enhance quality and improve export potential. This would require differentiating between grading facilities that at the producer level, in mandis, privately run, and at commodities exchange platforms. Although their core functions would be the same, each would be operated and managed differently. Grading facilities at the producer level could be established and managed by local FPOs. In this case, the state regulatory system must establish a mechanism to engage with the FPO administration and its regulatory structure. Similarly, grading facilities set up in mandis should work within the mandi administrative and regulatory system and the respective Market Committees would drive the implementation of standards.

For coriander, which is traded at commodities platforms such as NCDEX, grading standards are set by the commodities exchange. The exchange will specify, in its contract specifications, the particular grade/variety of a commodity that is being offered for trade.<sup>252</sup> A range will be specified for all the properties and only those grades and varieties, which fall within the range, will be accepted for delivery at the exchange platform.<sup>253</sup> Grading units at the producers' level would enable coriander farmers to better equip themselves to manage their production, meet grading standards stipulated by the exchange, and thereby actively participate in the commodities market and improve their returns. State government driven implementation of these standards and awareness programs to encourage farmers to participate in online markets would greatly enhance the coriander value chain.

- Educate Value Chain Stakeholders on Legal Requirements for Storage, Transport, Grading, Sorting, and Standards:** through the Centers of Excellence and other Government extension programs.

<sup>252</sup> National Commodities and Derivatives Exchange Limited (NCDEX) homepage, available at <http://www.ncdex.com/CustomerServices/FAQ.aspx#>, [last accessed on May 4, 2016]

<sup>253</sup> National Commodities and Derivatives Exchange Limited (NCDEX) homepage, available at <http://www.ncdex.com/CustomerServices/FAQ.aspx#>, [last accessed on May 4, 2016]

### 3. Packaging

Efficient and uniform packaging of horticultural produce reduces the need for repeated weighing and can facilitate handling, stacking, loading, unloading, storage, transport, transshipment, and marketing. Although packaging standards are imposed for export, internal packing is also an essential aspect of the horticultural value chain. Under national legislation, it is within the powers and duties of the Market Committees to regulate packaging standards and infrastructure. Market Committees can invest capital in modern packaging, including newer technologies such as shrink-wrapping that would provide an advantage to the produce being marketed.

In Rajasthan, locally fabricated, low cost packaging made out of cane and bamboo, dried grass, palm leaves, and teak leaves are used to pack horticultural products. Oranges/mandarins, for example, are packed in both traditional wooden boxes as well as plastic crates. Although these packaging materials serve the purpose of carrying fresh produce short distances, they cannot be used for long-distance transportation. The use of better packing material can also be an impediment for exports due to technical and food safety standards.

Interventions at the processing stage of the value chain need to be done at various levels. Because a large portion of processing activity is concentrated around the autonomous mandis, regulations must be incorporated into the Market Committee system for implementation of packaging standards for specific crops that are sold at the respective mandis. However, in order to encourage processing facilities to be spread throughout the value chain, most importantly near the farm gate level, state level policy interventions must be undertaken. Establishing packaging standards based on scientific and market findings, spreading awareness of these standards to all players in the value chain, and enabling implementation through mandis, FPOs and private sector entities that are active in the value chains would maintain the quality of produce and minimize waste.

Without a sound national level system for compliance with product and food safety standards, meeting the standards in international markets will be a significant hurdle. Packing regulations imposed at the mandi level, as well as national and state-level standards, will not only be necessary to maintain local quality and minimize waste but may also be a direct factor in increasing export potential.

#### *Regulatory Options:*

- **Implement Standards and Packaging Requirements at the Mandi Level:** Different products in the horticultural and spices value chains require different types of packaging

and treatment. Based on scientific and market-tested methods, the Market Committees could be mandated through the APMC Regulations to ensure that standard packing materials and methods are maintained at all market yards, and guidelines or manuals for packing of fruits, vegetables and spices could be issued. By standardizing or regulating packing requirements at mandis, logistics costs could be reduced and space maximized, with minimal damage to produce. In addition, product- and location-specific guidelines could be designed and implemented at the mandis. A standard regulation for packaging oranges/mandarins, for example, would make packaging consistent and help ensure quality. Although standards exist in the Indian market, implementation of standards has been a significant issue. Regulations must, therefore, also be accompanied by increased capacity and the appropriate infrastructure, mechanisms, and tools to implement such standards.

## D. MARKET (WHOLESALE AND RETAIL)

### 1. Agricultural Produce Marketing Committee (APMC) Regulation

Agricultural markets or mandis in most parts of India are established and regulated primarily under State legislation. The Central Government supports the States in the promotion of agricultural markets through different schemes and funding programs. In 2015, the Department of Agriculture implemented the Central Sector of Integrated Scheme for Agricultural Marketing (ISAM). Under the ISAM, assistance is provided to create market infrastructure (including storage), and venture capital assistance is provided to projects that provide market linkages to farmers. Capacity building assistance for farmers and other stakeholders is also provided, as is support for strengthening market information on prices and arrivals of agri-commodities in wholesale, regulated markets.<sup>254</sup>

#### Agricultural Produce Market Committee Framework and Mandi Structure

The entire geographical area of a State is divided into market areas wherein the markets are managed by Market Committees constituted by the State Governments. Once a particular area is declared a market area and falls under the jurisdiction of a Market Committee, no other person or agency is allowed to freely carry on wholesale marketing activities. Most APMC mandis have market yards where traders and commission agents are provided with storage facilities and shops for purchase of agricultural produce from farmers. There are a number of mandis and small

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<sup>254</sup> *Development of Agricultural Markets*, Press Information Bureau, Government of India, March 17, 2015, available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=117167>

market yards across the Jaipur and Kota divisions in Rajasthan. The largest among them are the Muhana, Chomu, and Bhawani mandi.

The Rajasthan Agricultural Produce Markets Act, (passed in 1961 and amended numerous times between 1965 and 2015) is the central legislation that governs the regulation and management of the mandis in Rajasthan. It provides for the formation of the Rajasthan State Agricultural Marketing Board (the ‘Board’), which is the state level administrative body and Market Committees, which are constituted to administer and regulate individual markets/mandis. The Act also stipulates the formation of a Marketing Development Fund, which is administered by the Board. The Fund is comprised of grants or loans sanctioned by the government, contributions received from market committees, and loans raised by the Board with the approval of the State Government.

Broadly, the Board is entrusted with the improvement and regulation of agricultural markets in the State and is responsible for building market yards. The markets are then transferred to the Market Committees, which implement the provisions of the APMC Act, and the rules, and bylaws made under it. The rules and bylaws issued under the APMC Act lay out the operational, management and procedural aspects of the Act. The Market Committee maintains and monitors the daily functioning of the market yard. Every Market Committee is a corporate body and is established by a name selected by the Government of Rajasthan. It has perpetual succession and a common seal. It may sue and be sued under its corporate name and can acquire and hold, lease, sell, or otherwise transfer any property as well as enter into contracts. The Market Committee is responsible for maintaining and managing the principal market yards and sub-market yards within the market area. Its main functions, *inter alia*, include:

- Providing the necessary facilities for the marketing of agricultural produce within the market yards;
- Providing for grading and standardization of agricultural produce;
- Collecting, maintaining and disseminating information with respect to the production, sale, storage, processing, pricing, and movement of agricultural produce;
- Regulating the entry of persons and vehicle traffic into the principal market yard and sub-market yards; and
- Regulating the making, carrying out, and enforcement or cancellation of agreements of sale, delivery, payment, and all other matters relating to the market of agricultural produce.

The Market Committee grants licenses and authorizes different individuals and entities to operate in the specific mandis. Where a market is established under the provisions of the Rajasthan APMC Act, it issues and renews licenses, in accordance with the rules and bylaws, to traders, brokers, weigh men, measurers, processors, surveyors, warehousemen, or other persons to operate in the market on payment of the prescribed fees (Section 14 of the Rajasthan APMC Act). Through this function, the Market Committee regulates the participation of the different actors in the mandi, with the intention of protecting their interests under a transparent and efficient marketplace.

These license holders transact in the mandis and use the infrastructure and services provided by the Market Committee by paying a fee linked to the type and size of produce bought and sold. The Market Committee collects market fees from the licensees in the prescribed manner on agricultural produce bought or sold by them in the market area at such rate as may be specified by the State Government (Section 17 of the Rajasthan APMC Act). The fee levied is determined based on the type of agricultural product. For instance, the mandi fee for the sale of mustard seed and oil seeds is fixed under the Act.<sup>255</sup> Similarly, fees on perishables such as fruits and vegetables are also determined differently. The 2015 amendment to the Rajasthan APMC Act removed mandi fee leviable on fruits and vegetables and instead introduced user charges with respect to these articles for the services provided by the Market Committee.<sup>256</sup> Currently, the user charges on oranges/mandarins ranges between four and six percent.

Another key aspect of the APMC framework is to allow and regulate the functioning of the market yards in various forms. Through a recent amendment, the Rajasthan APMC Act introduced provisions for the establishment of private sub-market yards or private consumer-farmer markets. The Rajasthan APMC Rules (passed in 1965 and subsequently amended through 2015 as per the Act) state the conditions and details for the establishment and operation of the sub-yards, which include requirement of processing facilities in the yard area. However, the existing regulations impose limitations that restrict the autonomous and efficient functioning of private markets:

- The participating farmers and traders must acquire a license to operate the market, and pay market fees and service charges.

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<sup>255</sup> Section 17 of the Rajasthan Agriculture Produce Markets Act- Mandi Fee leviable on the sale or purchase of Mustard Seed and Oil Seed shall be Rs. 1/- on one hundred rupees

<sup>256</sup> The Rajasthan Agriculture Produce Markets (Amendment) Act, 2015- Amendment of Section 17 “(ii) in the section so amended, the following proviso shall be added, namely: “Provided that no Mandi Fee shall be leviable on fruits and vegetables. Instead, the market committee may collect user charges in respect of these articles, for the services provided by the market committee, from the buyer of the produce at such rate as may be specified in the bye-laws”, available at <http://rajassembly.nic.in/Acts/Act10-2015.pdf>



- The sellers of the private consumer-farmer market shall not sell more than such quantities of their produce to a consumer at one time, as may be specified by the government from time to time

The APMC Act also provides also for the establishment of “market areas,” which include:

- Market Yards (A class, B class, C class and D class market areas can be formed on the basis of the criteria set by the State Government, with a Market Committee formed for each market area)
- Sub-Market Yards
- Private Sub-Market Yards
- Consumer Farmer Markets

All agricultural produce brought into the market for sale may be sold only in the principal market yard, sub-market yard, or private sub market yards. However, under the contract farming arrangement recognized by the APMC Act, it is not necessary to bring agricultural produce produced to the market yards, and buyers can directly purchase from the farms. The APMC Act specifically provides that produce under contract farming may be bought directly by a contract-farming buyer anywhere. Direct purchase between agriculturists and different types of buyers is also permitted through regulatory reforms undertaken under the APMC Act (Section 14).

In recent years, private warehouses are also being operated as markets where the farmers can sell their produce to logistics companies that run the warehouses. However, this is a very nascent development with limited scope and reach. Clarifying the APMC regulatory position on warehouses operating as mandis would give them concrete legal status under the APMC framework and enable the APMC Board to regulate them effectively. Other Indian states have taken steps in this direction. In Punjab, the state government has declared some silos as mandis. Similarly, the State of Karnataka has also taken initiatives in this regard.

### *Proposed National Agricultural Market*

While the APMC system of agricultural markets has been in place for several decades now, the Central Government recently introduced the concept of a national agricultural market (NAM), that would increase farmers’ net returns, under the Department of Agriculture & Cooperation in

the Union Government's Ministry of Agriculture.<sup>257</sup> Following successive budget announcements of 2014 and 2015 for an 'Agri-Tech Infrastructure Fund' and 'Unified National Agriculture Market,' respectively, the Department of Agriculture & Cooperation has formulated the Central Sector Scheme for Promotion of National Agriculture Market through Agri-Tech Infrastructure Fund (ATIF) through provision of a common e-platform.<sup>258</sup>

Integration of agri-markets across the country through the e-platform is seen as an important measure for overcoming the challenges posed by the present agri-marketing system, including the fragmentation of each state into multiple market areas, each administered by separate APMCs, multiple levies of mandi fees, requirement for multiple licenses for trading in different APMCs, licensing barriers leading to monopoly conditions, poor quality of infrastructure, and low use of technology, information asymmetry, opaque process for price discovery, high level of market charges, and movement controls (See Box 12).<sup>259</sup> A unified market both at the state and national level is, therefore, being explored as a model to address these challenges and bottlenecks.

The Scheme envisages implementation of the NAM by the Department of Agriculture and Cooperation through SFAC by creation of a common electronic platform deployable in selected regulated markets across the country.<sup>260</sup> A budgetary provision of Rs.200 crores has been set to be spent over the next three years (2015-16 to 2017-18). The first step towards this initiative was taken by the Indian Prime Minister in April 2016 with the launch of e-NAM, the online portal for trading in agricultural produce. This e-NAM marketplace will initially enable farmers in eight States- Rajasthan, Uttar Pradesh, Madhya Pradesh, Jharkhand, Himachal Pradesh, Gujarat, Telangana, and Haryana to sell 25 commodities in 21 wholesale *mandis*<sup>261</sup> (one of which is the Ramganj mandi in Kota). Through further steps, this platform will be deployable in 585 selected regulated wholesale markets in States/UTs that wish to join the e-platform.<sup>262</sup>

<sup>257</sup> Siraj Hussain, *National Agricultural market- A Harbinger of Change*, Press Information Bureau, Government of India, August 17, 2015, available at <http://pib.nic.in/newsite/mbErel.aspx?relid=126115>

<sup>258</sup> Siraj Hussain, *National Agricultural Market- A Harbinger of Change*, Press Information Bureau, Government of India, August 17, 2015, available at <http://pib.nic.in/newsite/mbErel.aspx?relid=126115>

<sup>259</sup> Siraj Hussain, *National Agricultural market- A Harbinger of Change*, Press Information Bureau, Government of India, August 17, 2015, available at <http://pib.nic.in/newsite/mbErel.aspx?relid=126115>

<sup>260</sup> Siraj Hussain, *National Agricultural market- A Harbinger of Change*, Press Information Bureau, Government of India, August 17, 2015, available at <http://pib.nic.in/newsite/mbErel.aspx?relid=126115>

<sup>261</sup> *Online Trading Platform for Farm Goods launched*, The Hindi Business Line, April 14, 2016, available at <http://www.thehindubusinessline.com/economy/agri-business/online-trading-platform-for-farm-goods-launched/article8476420.ece>

<sup>262</sup> Siraj Hussain, *National Agricultural Market- A Harbinger of Change*, Press Information Bureau, Government of India, August 17, 2015, available at <http://pib.nic.in/newsite/mbErel.aspx?relid=126115>

### ***Box 12: National Agricultural Market***

The main objectives of the NAM initiative are:

- i. *Transparency in Pricing* through an online portal accessible to farmers, traders, and all players in the value chain
- ii. *Reduction in Transaction Costs* through operational streamlining with measure such as providing a single license valid across all markets, enabling a single-point levy of market fees, and connecting farmers directly to buyers
- iii. *Reduce of Multiple Players in the Value Chain* through the online platform, which connects farmers directly to buyers, both wholesale and retail, reducing their dependence on commission agents and local traders

### ***Regulatory Options:***

- **Streamline Licensing Process Under APMC Framework:** The Rajasthan APMC Act and Rules provide for the issuance of a special license to operate in more than one mandi (Section 14A of APMC Act and Part VI A of the APMC Rules). Under these provisions, a special license will be granted by the Director of the Agricultural Marketing for the State of Rajasthan upon approval from the specific Market Committees for which the license is applied.<sup>263</sup> Establishment of a system for a single statewide license for traders operating in multiple markets and possible online licensing application (cess payments could also be collected online). This could be done through the NAM platform, which proposes the unification of the licensing process by providing a single window system that allows for a statewide license and single-point levy of market fees. Necessary amendments to the Rajasthan APMC Act and Rules would have to be made and have been currently initiated by the Government of Rajasthan.
- **Establish Regulations Governing Online Mandis:** The National Agriculture Market scheme introduced by Government of India launched an online portal called e-NAM. Under this program, the government aims to integrate all 585 regulated markets in the country on the e-NAM platform by March 2018.<sup>264</sup> To date, proposals from 12 States and UTs, including Rajasthan, requesting integration of 365 mandis with NAM have been

<sup>263</sup> Section 63-D of Rajasthan Agriculture Produce Market Rules: Procedure for grant of special license - (1) The Director shall, on receipt of an application for special license, obtain no dues/no objection certificate from the Secretaries of the market committees concerned of the specified market areas.

<sup>264</sup> *Launching of National Agricultural E-Market*, Press Information Bureau, Government of India, March 11, 2016, available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=137757>

given approval in principle and grant (financial support) has been released to Rajasthan, Gujarat, Telangana, and Jharkhand.<sup>265</sup> While Rajasthan is one of the first states to be involved in this program, implementation needs to be ensured through the necessary additions to the APMC Act and Rules and backed by adequate resources and infrastructure.

A working model for this is one that has been developed by the State of Karnataka which has integrated a number of markets into a single licensing system through a joint venture between the State Government and NCDEX spot exchange, which offers automated auction and post-auction facilities. This platform provides for the online marketing of a number of commodities, including oranges/mandarins and coriander, and could be a good model for Rajasthan.<sup>266</sup>

## 2. Export

Both oranges/mandarins and coriander are among the main horticultural products that are exported from India. Coriander has grown as a major spice export with significant demand in foreign markets. In 2014-15 it contributed to 5 percent of the total volume of spice exports. Export of coriander amounted to a total volume of 46,000 tonnes valued at approximately \$74.87 million, registering a 1 percent increase in volume and 34 percent increase in value compared to 2013-14. However, despite being a massive producer and consumer of fresh horticultural produce, with export volume increasing over the years, India is considered only a minor or inconsequential player in international markets for most individual markets. Orange is also one of the major fruit exports from the country, but it has experienced a drop in export volume over the past few years. The total volume of exported orange was 34006 metric tonnes (MT) in 2011-12 but fell to 28237 MT in 2013-14.<sup>267</sup>

Many factors determine international competitiveness in horticultural trade. International competitiveness requires suitable agro-ecological conditions, efficient trade logistics, strong business and farm management capacities, and a favorable overall environment for

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<sup>265</sup> *Launching of National Agricultural E-Market*, Press Information Bureau, Government of India, March 11, 2016, available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=137757>

<sup>266</sup> *Krishi Marata Vahini- Online Agriculture Marketing Information System*, Department of Agriculture Marketing and Karnataka State Agricultural Marketing Board, Government of Karnataka, available at <http://krishimaratavahini.kar.nic.in/Markets/NotifiedCommodity.aspx>

<sup>267</sup> *National Horticulture Database 2014*, National Horticulture Board, Government of India, available at [http://nhb.gov.in/area-pro/NHB\\_Database\\_2015.pdf](http://nhb.gov.in/area-pro/NHB_Database_2015.pdf)

investment.<sup>268</sup> Among them, one of the most crucial factors is standards. The standards applied to international trade in horticultural products are mainly quality standards related to varietal selection, physical and visual characteristics, tolerances for foreign matter, and other such variables. Standards also evolved for packaging materials for fresh and processed horticultural goods. In recent decades, a wider set of standards has come to govern the international trade in horticultural products with different countries emphasizing on specific areas. For instance, some countries have given increased attention to the environmental and social dimensions of horticultural production.

Within the framework of standards, technical measures such as SPS regulations have assumed importance, especially for food and agricultural products due to the sensitive nature of issues such as food safety and the protection of plant and animal health. The WTO Agreement on the Application of SPS Measures permits countries to adopt their own set of regulations provided they are based on a risk assessment. With respect to fruits and vegetables, and spices, separate government agencies govern the introduction and implementation of standards, namely the Agricultural and Processed Food Products Export Development Authority (APEDA) and the Spices Board of India.

Technical standards become especially critical in relation to supplying the fresh and processed horticultural products to markets of developed countries. As consumer awareness and concern for food safety and the ethical and environmental conditions under which food is produced and distributed is growing, these measures can consequently be detrimental to exports from developing countries like India.<sup>269</sup> SPS measures adopted by different developed countries affect the volume and pattern of trade by increasing the costs of imports or prohibiting entirely. For instance, the detentions made by the United States Food and Drug Administration (USFDA) of Indian horticultural products exported to the U.S. market during April 2010–May 2011 demonstrate the challenges faced by spices, vegetable products, nuts, and edible seeds, among other products.<sup>270</sup> Presence of pesticides and salmonella, unsanitary conditions, and issues with

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<sup>268</sup> *India's Emergent Horticultural Exports: Addressing Sanitary and Phytosanitary Standards and other Challenges*, Sustainable Development Sector Unit- India Country Management Unit, South Asia Region, The World Bank, May 21, 2007, available at [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/06/27/000020953\\_20070627100319/Rend ered/PDF/361780IN.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/06/27/000020953_20070627100319/Rend ered/PDF/361780IN.pdf)

<sup>269</sup> *The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement)*, available at [https://www.wto.org/english/tratop\\_e/sps\\_e/spsagr\\_e.htm](https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm)

<sup>270</sup> Said Idris, Alka Singh and K.V. Praveen, *Trade Competitiveness and Impact of Food Safety Regulations on Market Access of India's Horticultural Trade*, Agricultural Economics Research Review, Vol. 28 (No.2) July-December 2015, available at <http://ageconsearch.umn.edu/bitstream/229749/2/9-Said-Idris.pdf>

labeling were cited as the major causes of rejections.<sup>271</sup> Further, these factors have led to a decrease in the confidence of the importers.<sup>272</sup>

In order to improve this situation, exports must strictly follow the importing country's standards, including sanitary and technical requirements. However, they face problems in meeting these multi-layered specifications as this requires more sophisticated monitoring and testing, and therefore more costly procedures are required.<sup>273</sup> A stronger implementation framework, along with infrastructure development, could help support producers and exporters in adhering to international standards in India.

### Agri-Export Zones

The Indian Government, under its Agri-Export Zone of India program, has established state-level Agri Export Zones (AEZs) to facilitate value-added processing for exported goods. The product focus of the AEZs varies from state to state, depending upon government priorities. In the case of Rajasthan, which produces a large volume of spices for export, the focus of the AEZs has been on coriander and cumin. The State Government coordinates services provided by State and Central Government agencies, including agricultural universities, which includes programs that assist with pre- and post-harvest treatment, plant protection, processing, packaging, storage, and research and development. The AEZs are designed to help producers and exporters develop and source raw materials, process goods, and secure proper packaging. The AEZs have adopted an end-to-end approach, integrating the entire value chain for the focus products, from the initial stages of the product's production to its entry into global markets.

In 2014, the Government of Rajasthan established two agri-export zones:

- i) Coriander: Kota, Bundi, Baran, Jhalawar and Chittorgarh
- ii) Cumin: Nagaur, Barmer, Jalore, Pali and Jodhpur

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<sup>271</sup> Said Idris, Alka Singh and K.V. Praveen, *Trade Competitiveness and Impact of Food Safety Regulations on Market Access of India's Horticultural Trade*, Agricultural Economics Research Review, Vol. 28 (No.2) July-December 2015, available at <http://ageconsearch.umn.edu/bitstream/229749/2/9-Said-Idris.pdf>

<sup>272</sup> Said Idris, Alka Singh and K.V. Praveen, *Trade Competitiveness and Impact of Food Safety Regulations on Market Access of India's Horticultural Trade*, Agricultural Economics Research Review, Vol. 28 (No.2) July-December 2015, available at <http://ageconsearch.umn.edu/bitstream/229749/2/9-Said-Idris.pdf>

<sup>273</sup> Said Idris, Alka Singh and K.V. Praveen, *Trade Competitiveness and Impact of Food Safety Regulations on Market Access of India's Horticultural Trade*, Agricultural Economics Research Review, Vol. 28 (No.2) July-December 2015, available at <http://ageconsearch.umn.edu/bitstream/229749/2/9-Said-Idris.pdf>

As per a recent study, Rajasthan's AEZs are among the top performing zones established accounting for 72 percent of the total exports.<sup>274</sup> However, as directed by the Ministry of Commerce and Industry, Government of India, a peer evaluation of the existing AEZs was carried out in 2005 to assess the performance of AEZs.<sup>275</sup> This led to suspension of any new AEZ development plans. Some of the important findings of the peer evaluation that led to suspension of AEZ activity include:

- Lack of Ownership by Government Authority and Their Agencies
- Lack of Awareness About the Scheme and Its Conceptual Framework Among Stakeholders Including State Government Field Establishments
- Lack of Project Orientation in the Conceptual Design of AEZ
- Lack of Coordination/Monitoring System in AEZs
- Non-Materialization of Adequate Public Investment from Central and State Governments
- Indiscreet Proliferation of AEZs

### Foreign Trade Policy

The Central Government announced Foreign Trade Policy (FTP 2015-20) on April 1, 2015 with new schemes for exporters called the Merchandise Exports from India Scheme (MEIS) and Service Exports from India Scheme (SEIS). One of the main sectors of focus under the policy is agriculture. The MEIS has identified further fruits, vegetables and spices among few others as the key products to receive support under the Scheme.<sup>276</sup> The Union Government has encouraged states to adopt the Foreign Trade Policy and frame their own export policies addressing the main export products in their states and catering to the needs of those markets.

### **Regulatory Options:**

- **Promote Model Agri-Export Zones in the Horticultural and Spices Sectors:** Taking into account the shortcomings and challenges of previous AEZs in the country and evaluating the performance of the coriander and cumin AEZs in Rajasthan, model AEZ structures (See Box 13) could be reintroduced and developed to include integrated horticulture produce (specifically orange/mandarin). The focus of this model would be

<sup>274</sup> *United AP Garnered 2<sup>nd</sup> Highest Share in Actual Exports Through Agri Export Zones: Study*, ASSOCHAM India, January 8, 2016, available at <http://www.assochem.org/newsdetail.php?id=5442>

<sup>275</sup> *Agri-Export Zones*, Press Information Bureau, Ministry of Commerce and Industry, Government of India, March 11, 2013, available at <http://pib.nic.in/newsite/PrintRelease.aspx?relid=93415>

<sup>276</sup> *Highlights of the Foreign Trade Policy 2015-20*, Department of Commerce- Ministry of Commerce and Industry, Government of India, available at <http://dgft.gov.in/exim/2000/highlight2015.pdf>

marketing such as grading, standardization, and food processing, bringing together agricultural production and downstream capacity development through value added services and support within the AEZ. Private Market Yards could be developed specific to AEZs to cater to export-based production. Strengthening the food processing, testing and inspection infrastructure in these identified AEZs will equip producers and traders to develop export quality produce and maintain international standards.

***Box 13: The Associated Chambers of Commerce & Industry of India (ASSOCHAM) Recommendations for Reviving AEZs and Boosting Agri-food Exports<sup>277</sup>***

- Explore options to bring in private players for developing existing AEZs on a public-private partnership (PPP) model.
- Create awareness amid state governments field establishments that would generate public awareness about AEZs by organizing awareness camps on the regular basis and adopting use of information and communication technology (ICT).
- Integrate various government schemes like Mega Food Parks and Cold Storage schemes with AEZs.
- Establish dedicated central monitoring authority, with branches across states to overlook co-ordination, to address issues regarding lack of monitoring system in AEZs.
- Introduce a certification zoning system within the AEZ area to facilitate high value export and emphasizing regulatory checking through accredited agencies with varying frequency based on risk category.
- Promote organically grown tea, coffee, spices, fruits and vegetables, cereals, pulses, and other organic produce as they account for majority of global trade. Besides, premiums on most organic products range 35-100 percent, which is considerably higher than regular produce.
- Emphasize creating Indian brands in agro and food products' category, which will help in fetching good value for exports. Strong brands also will create goodwill for Indian products.
- Incentivize companies undertaking research and development (R&D) and innovating in food and agri sector and help them explore export opportunities for specialty/innovative agro-food products.

<sup>277</sup> *United AP Garnered 2<sup>nd</sup> Highest Share in Actual Exports Through Agri Export Zones: Study*, ASSOCHAM India, January 8, 2016, available at <http://www.assochem.org/newsdetail.php?id=5442>



The operation of FPOs within these zones must also be permitted and encouraged. Aggregation of produce to meet minimum order requirements or importers will help expand the markets of small and marginal producers. In addition, training and extension, and infrastructural capabilities can be enhanced through these FPOs.

- **Design State Export Policy:** The Commerce Secretary of India encouraged states to frame their own export policies addressing the main export products in their states and catering to the needs of these markets. For instance in the case of the state of Maharashtra, the central government suggested to the Maharashtra government to bring in a policy focusing only on exports, identifying items that will be specifically exported from Mumbai and the state.<sup>278</sup> It also recommended creation of a traders' facilitation center to resolve the grievances of exporters.

A similar export policy would be greatly beneficial in Rajasthan where the international markets for products such as coriander and orange/mandarin are significant. While the State Industrial and Investment Promotion Policy (2010) introduced a sector-focused and cluster-based approach to facilitate exports, it does not incorporate the recent shift in the national foreign trade landscape and development of Rajasthan's export sector. A targeted export policy that deploys resources, establishes implementation mechanisms, and designs training tools for international trade standards would help expand the global markets for horticulture produce from the State.

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<sup>278</sup> *Center to Ask Maharashtra to Frame Own Exports Policy*, Economic Times, August 28, 2015, available at [http://articles.economictimes.indiatimes.com/2015-08-28/news/65969463\\_1\\_export-policy-foreign-trade-policy-india-scheme](http://articles.economictimes.indiatimes.com/2015-08-28/news/65969463_1_export-policy-foreign-trade-policy-india-scheme)