

Executive Summary

Skill Development in the Agriculture and Allied Sectors in Assam

The Case of Piggery, Fishery and Spices



Agriculture is one of the key drivers of the Indian economy, employing around 50 per cent of India's total workforce and contributing around 17 per cent to the gross domestic product (GDP). India produces a diverse range of agriculture products and is the world's largest producer and consumer of spices. Livestock and fisheries have emerged as major growth sectors - livestock production constitutes around 34 per cent of the total agriculture production. India is the third largest fish producer in the world accounting for around 6.3 per cent of total global production. India is both a large importer and exporter of agri-commodities and has a positive trade balance in this sector.

Improving agricultural productivity, providing greater market access, doubling farmers' income by 2022 are priority areas for the Government of India. In a country with large population dependent on agriculture, skill development and job creation in this sector have received government's attention and several policies, schemes and initiatives have been designed to support development of skills and employment opportunities in agriculture. As agriculture is a state subject in the quasi-federal governance structure of India, states play a key role in aligning their policies with the Central government on the one hand and addressing the state-specific issues and priorities on the other. There are region-specific distinctive features of the agriculture sector and need for targeted interventions.

In the North-Eastern part of the country, agriculture provides livelihood opportunities to around 50-70 per cent of the people, which is higher than the national average. Around 16 per cent

of the region's land is cultivable with major cultivable areas available in the alluvial valleys of Assam, which is the largest agricultural State of the region. Assam is the largest producer and consumer of livestock products, with 90 per cent of the rural households rearing some form of livestock, especially pigs. Assam has the highest pig population in India. Fishery is an important allied activity for the people of the region, especially in Assam, which has large number of water bodies and floodplains. Assam is a key producer of a number of spices such as chilli, ginger and black pepper, which are mostly organically grown and have huge



export potential. Several schemes and policies have been undertaken by the Central and the Government of Assam to support these three sectors. However, in spite of such initiatives, Assam lags behind in productivity due to small fragmented land holdings, marginal farmers, low adoption of scientific methods of farming, low level of commercialisation, lack of technology adoption, impediments in access to inputs and finance and fragmented and underdeveloped supply chain. Further, due to low level of education and skill

sets among people employed within the sector, there has been no diversification in the type of jobs and majority are engaged as self-employed. Educated youths are not keen to invest in this sector and agri-tech companies and startups are at a nascent stage. Due to this, the State is not able to meet its consumption demand in piggery and fishery sectors and has been a net importer. It has also not been able to monetise its competence in spice production and export. Development of agri-value chain has been a priority for the State Government and the Government acknowledges the importance of the three key sectors: piggery, fishery and spices in its economic growth and for improving the livelihoods of the people. Through various schemes and policy initiatives, the State is encouraging private participation in piggery, fishery and spices sectors.

cient in production and integrates into the domestic and global value chain. This will lead to greater productivity, commercialisation of the three sectors, increase in income and more value addition within the State.

Methodology

The paper is based on secondary information and data analysis and in-depth interviews with 78 stakeholders including policymakers, farmers, farmer producer organisations, small businesses, agriculture scientists, veterinary officers, academicians and sector experts.

Key Findings of the Survey

The survey found that there is a huge demand for piggery, fishery and spices in the State. Although there are a number of schemes and policies, there are implementation and monitoring issues which make it difficult to achieve the desired outcomes. Policies are fragmented, sometimes without targets or clearly specified expectations or outcomes. There is lack of data and information on allocation, applicability, utilisation and beneficiaries of the schemes and sometimes there are multiple overlapping schemes. While multiple agencies may be involved in skill development and training, their performance vary. There is scope for more private sector engagement and there is need for more diversity in the skill and training modules offered.

Majority of the producers and farmers are small and they mainly produce for sustenance purposes. Awareness of benefits of commercialisation and the willingness to take risk is low. Knowledge about the schemes and initiatives under which the trainings are provided was found to be limited. Majority of the survey participants had undergone trainings for short duration (2-3 days), and only ten respondents went for more comprehensive training programmes. Majority of the respondents pointed out that there are limited training centres and they are required to travel at least 30-40 kms for attending training programmes. While around 75 per cent of the farmers were fairly equipped with smart phones and could



This paper presents an overview of the piggery, fishery and the spices sectors in Assam, with a focus on the value chain, scope for commercialisation and skill development in these sectors. It presents the schemes and policies applicable to the State of Assam in agriculture and allied sectors. It identifies general and sector-specific issues in the value chain with a focus on skill and training gaps. It examines the best practices of other states, which can be implemented in Assam. It then suggests policy recommendations for the Central and State Government of Assam on how to address the challenges, so that the State becomes self-suffi-

use online portals and applications, none of the training models were on-line. This was a major issue, especially for women who had to leave household work and travel such long distances. Overall, the survey participants felt that the quality of private demo farms were better than government farms. They also felt the need for more research and development (R&D). Around 90 per cent of the farmers said that the cost of the training was covered under the programmes and they received some form of stipend.

At present, the modules and training programmes focus primarily on improving production and there is limited training on food safety standards, labelling, go-to-market strategy and export requirements. Around 65 per cent of the participants have expressed that they require training and handholding in areas such as brand building and marketing, day-to-day efficient planning and business management, proposal writing for fund raising, type of certification requirements, quality and standards requirements, labelling requirements, etc. While 90 per cent of the respondents found these trainings to be useful, only 30 per cent could implement what they learnt, mostly due to shortages of funds and unavailability of quality seeds and feed at low prices. The farmers who could implement their learning had seen a vast growth in production and significant improvement in quality of produce, ranging between 30-40 per cent and 100 per cent. Around 80 per cent of the people engaged in production and selling highlighted that they were unaware of the market demand for their commodities and have no market access beyond their villages and districts. Further, co-operatives have pointed out that they often have to sell through intermediaries, who take away 60 per cent of their profit. Around 85 per cent of the survey participants (up to 95 per cent for piggery and fishery sectors) highlighted the shortages of good quality germplasm, fingerlings, seeds, feed, and other inputs like organic feed and fertilisers. There is a huge shortage of good quality veterinary doctors and practitioners. The training programmes have missed out different ways of cultivation and increasing pro-

duction and there is a serious shortage of demo farms and training facilities. In creating training infrastructure, the presence of private sector is low.

Development of agri-value chain requires establishment of adequate and efficient infrastructure facilities, which is low in Assam. The survey highlighted that transportation and cold-chain facilities are inadequate and that leads to huge losses in perishable commodities. The food processing sector is highly unorganised and there are shortages of modern equipment and infrastructure facilities such as scientific slaughterhouses, storage facilities such as cold preservation units and temperature controlled vehicles and all-day power supply, etc.

In spite of Government of India's policies such as "Digital India", penetration of internet, mobile connectivity and availability of low-cost smart phones, the use of technology in training processes and in handholding farmers



and producers to commercialise has been identified as a key barrier by the survey participants. Training modules are manual and online sharing of information is limited. The survey participants identified the need to consolidate information through a single platform. Technology can be used to raise alerts and e-commerce platforms can help in consolidating small businesses in reaching their consumers.

For certain products such as organic products where traceability is a mandatory requirement, there can be use of blockchain technology.



While a number of startups and entrepreneurs are coming up in the State, they have been facing issues such as shortage of funds and lack of knowledge of requirements for accessing key markets. Limited access to formal credit facilities and insurance coverages have been identified by a number of participants as two key barriers. There is need for engagement with buyers and private sector in this regard. Experts from software industry can be engaged in technology and skill development programmes to mitigate the technology and knowledge gaps of the entrepreneurs.

Policy Recommendations

The survey, focused group interviews and policy interactions led to certain recommendations which are listed below -

(1) Develop an agri-business policy and roadmap, focusing on the entire agri-value chain, across certain key products of Assam, where it has comparative advantage in production and high demand in consumption. Agriculture can be a profitable business activity and create self-employment opportunities.

Policies and schemes should support commercialisation and self-employment creation.

(2) Integrate schemes with value chain development and policies, so that schemes are better utilised. There is need for detailed studies to evaluate the schemes and based on that, resources can be reallocated and schemes can be pruned down.

(3) Develop an agri-business technology roadmap for the next five years, allocate budget for technology interventions in line with the roadmap and implement 5-6 pilot projects by 2020.

(4) Areas of technology interventions include online training modules, online applications (Apps) for communication and information sharing, for identifying resources gaps, for project management and monitoring, online marketing and e-commerce platforms and creation of information and knowledge centers. Technology can be used for ease of doing business and product traceability in select areas.

(5) Develop smart clusters based on the comparative advantages of the districts, with a focus on integrated and composite farming. These clusters can be developed as eco-tourism hubs, integrating the services sector with manufacturing sector and agriculture.

(6) Agri-entrepreneurship should be encouraged through identifying local level farmers and entrepreneurs. They have to be supported under the Assam's Startup Policy by addressing the existing barriers that they face, including funding issues. There is need for more incubation centres.

- (7) Develop training infrastructure and create need-based comprehensive training modules, with focus on the entire value chain, food safety, procedural requirements and go-to-market strategies. There is need for research to develop such modules. There is need to have more training of trainers and awareness programmes. Private sector should be encouraged to participate in such programmes. Better monitoring and impact evaluation of training will improve the training quality and help mitigate the training gaps.
- (8) Quality inputs such as germplasm, fish fingerlings, feed, etc., should be easily available at reasonable prices.
- (9) Agriculture R&D should be increased through greater collaboration with the private sector and domestic and international research/technology institutions. Research is needed at different levels from development of new products to improving productivity and acquiring greater market knowledge.
- (10) Address infrastructure and logistics gaps and develop infrastructure facilities through greater private participation or public private partnership (PPP) models. There is need for establishing more laboratories, testing and certification facilities along with logistics infrastructure.
- (11) Facilitate enhanced access to finance through concessional interest rates, faster approval processes, etc., and encourage adaptation of insurance coverage to mitigate risks.
- (12) Address policy gaps in areas such as waste management.
- (13) Market studies should be conducted to analyse the consumption pattern and demand in other states of India and key export markets to help trainers, farmers and processors to know the requirements.
- These recommendations if implemented will help (a) farmers and producers of the State to enhance productivity (b) lead to establishment of efficient value chains (c) increase commercialisation (d) create successful entrepreneurs and jobs (e) bring in investment and (f) enable Assam to be self-sufficient in production of the three sectors to meet its own consumption demand and then export.



About ICRIER

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Established in August 1981, ICRIER is an autonomous, policy-oriented, not-for-profit, economic policy think tank. ICRIER's main focus is to enhance the knowledge content of policy making by undertaking analytical research that is targeted at informing India's policy makers and also at improving the interface with the global economy. ICRIER conducts thematic research in the following eight thrust areas:

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- Physical and Social Infrastructure including Telecom, Transport, Energy and Health
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- Skill Development, Entrepreneurship and Jobs

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About ICCo

ICCo is a development organisation working to achieve the twin core principles of 'Securing Sustainable Livelihoods' and 'Justice and Dignity for All' in India. ICCo believes that "Innovative" strategic thinking and "Collaborative" effort are the key to bringing a desired change in the society.

ICCo works in the areas of agriculture value chain, gender and inclusion, clean energy, and promoting social entrepreneurship. ICCo plays diverse roles such as a Catalyst, Advocate, Entrepreneur, Networker and an Implementer. This helps in capitalizing on synergies with various stakeholders to amplify impact of its work.

The organisation has directly impacted 70000 lives in 2019-2020.

ICCo's key goal in the next 3-5 years is to positively impact nearly 2,00,000 poor households through our interventions in agriculture value chain, clean energy, food and nutritional security, and social entrepreneurship. ICCo will also incubate and accelerate 500 youth enterprises who would in-turn generate employments in rural areas.

Towards this endeavour, we collaborate with various stakeholders and also contribute to the Sustainable Development Goals.

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India aspires to become a US\$5 trillion economy by 2024 and agriculture is one of the key drivers. India is a large producer of a variety of agriculture crops and has a positive trade balance in this sector. Within India, the North-Eastern region has huge potential for development of agriculture, which is the major source of livelihood for around 50-70 per cent of the people. Within North-East, Assam has the highest pig population in India, yet it is not able to meet its own consumption demand. Fishery is another sector in which there is a demand-supply gap. Assam produces high quality spices, which are mostly organically grown, yet the State is not able to supply to pan-India or explore its export potential.

While Assam lags behind in meeting its own consumption needs, several initiatives have been taken by the Centre and Government of Assam to improve productivity, link farmers to markets and to help double their income by 2022. Skill development and entrepreneurship have also been identified as priority areas. Since agriculture policies are implemented at the State level, policies and schemes have to be customised to the requirements of the states. This paper aims to understand how a State can be self-sufficient in production and enhance its exports, through skills development, entrepreneurship and development of modern value chains. The paper specifically, examines the prospects of value chain and entrepreneurship development in the piggery, fishery and spices sectors in Assam. It also looks at addressing other issues like gender and income inequality through entrepreneurship development and modern agriculture practices.

The paper analyses the government policies and schemes, looking into their implementation and success at the ground level. It identifies general and sector-specific issues in the value chain with a focus on policy gaps, skill and training gaps and examines the best practices of other states, which can be replicated in Assam. It suggests recommendations for the Government of Assam, which if adopted, can help the State to achieve self-sufficiency in production, help farmers and small and medium food processors to integrate into the domestic and global value chains, increase their income, create self-employment opportunities, bring educated youth back to agriculture, lead to women empowerment, increase investment in food processing and eventually help attaining the sustainable development goals. It is expected that the policy recommendations in this paper can be replicated in other states.

'ICCo India has been doing significant work in Assam in the area of skill and entrepreneurship development and value chain linkages. I am happy to note that they have partnered with one of India's leading think tanks - ICRIER. I am sure that ICCo's experience in ground and ICRIER's experience in policymaking will make this policy paper a unique document'.

Dr. B. C. Barah
Ex NABARD Chair Professor –ICAR
Ex Principal Scientist- NCAP –ICAR

'To the best of my knowledge is one of the most comprehensive reports on the agriculture sector of Assam. I am sure that the policy recommendations in this report will help Assam to become self-sufficient in production, lead to entrepreneurship development and link producers in the state to domestic and global value chains'.

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