Swaminathan J: Financing for sustainable agriculture

Keynote address by Mr Swaminathan J, Deputy Governor of the Reserve Bank of India, at the International Research Conference, hosted by the College of Agricultural Banking (CAB), Pune, 11 September 2024.

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Distinguished Guests, Dr R. C. Agrawal, Deputy Director General, Indian Council for Agricultural Research; Dr Sunil Gorantiwar, former Director of Research, Agricultural University, Rahuri; Principal, CAB; senior officials from Financial and Academic Institutions; colleagues from RBI; ladies and gentlemen. A very good morning to all of you.

It gives me immense pleasure to address you all today at this international research conference on the topical subject *"Sustainable Financing for Food Security and Farm Income - Opportunities, Challenges, and the Way Forward"*. It is even more fulfilling when it is being done as part of the celebrations of the 90th year of RBI's inception.

Climate change and sustainability are two pressing issues that have captured global attention. In recent years, we have witnessed a surge in extreme weather events, including severe droughts, cloudbursts, flooding, landslides, receding coastlines, and the alarming melting of Arctic ice and Himalayan glaciers. Wildfires have become more frequent and intense. Tragically, the most vulnerable communities-those who have perhaps contributed the least to climate change-are bearing the brunt of its devastating impacts[1].

In this context, sustainable agriculture emerges as a crucial solution. Sustainable agriculture refers to farming practices that meet today's food needs while preserving resources for future generations. This means adopting methods that protect the environment, reduce reliance on chemical inputs, use water and land efficiently, and ensure social and economic equity for farmers.

Looking ahead, achieving agricultural sustainability will be a key priority for all economies where agriculture is a major sector. This will involve transforming conventional farming practices into technology-driven systems, enhancing agricultural commodities' processing and preservation techniques, contributing to value addition at the farm level. We also need to align crop production systems with climate-smart agriculture. And there is a need to ensure adequate and timely finance as well to sustain all of these.

Challenges faced by Indian Agricultural Sector

In the Indian context, agriculture is not just an economic activity; it is the foundation of our nation's food security and livelihood. The sector employs a significant portion of our population. Yet, despite its critical importance, Indian agriculture continues to face several structural challenges. Let me briefly elaborate on some of these challenges that are holding back the sector from realising its full potential.

Low Productivity

Firstly, India's agricultural productivity remains low compared to many crop-producing nations. This low yield-measured as the quantity of crop produced per unit of land-is due to various factors, including a lower rate of seed replacement[2], inefficient fertiliser use and limited adoption of advanced technologies.

Predominance of Small and Marginal Landholdings

Secondly, the overwhelming dominance of small and marginal landholdings creates its own set of challenges. This fragmented land structure negatively impacts the viability of farming. With lower marketable surplus and holding capacity, small farmers often have limited bargaining power, face higher transaction costs, and struggle with the marketing of their produce. These factors further hinder their ability to invest in new technologies or improve productivity.

Dependence on monsoons/ rainfall

Thirdly, India's heavy reliance on rainfed agriculture is another critical challenge. Approximately 45 per cent of the country's agricultural land remains dependent on rainfall, making farmers highly vulnerable to the unpredictable nature of the monsoon. This over-reliance on rainfed farming leads to inconsistent agricultural output, exposing farmers to significant risks. The challenge lies in optimising the use of existing water resources while expanding irrigation coverage. Ensuring more predictable and stable agricultural output will require a focus on efficient water management, irrigation infrastructure, and climate-resilient farming practices.

Inadequate Agricultural Processing capacity

Fourthly, limited processing infrastructure poses a significant barrier to agricultural growth. Without adequate processing and preservation facilities, a large portion of agricultural produce is lost post-harvest, reducing the overall supply and farmer incomes. Low value addition means farmers often receive lower prices for their raw produce, missing out on the potential earnings from processed goods. Additionally, the lack of processing capabilities hampers access to both domestic and international markets, limiting export opportunities and reducing the competitiveness of Indian agricultural products globally.

Low level of Farm mechanisation

Fifthly, the low level of farm mechanisation poses a significant obstacle to enhancing agricultural productivity in India. Labour shortages during peak farming seasons, combined with demand for higher wages, further aggravate this issue, making it difficult for farmers to maintain optimal output. Additionally, Indian agriculture faces a demographic challenge, with the average age of farmers now at 50.1 years, underscoring the need to attract younger generations to the sector. Modern farming techniques and increased mechanisation will not only boost productivity but also play a pivotal role in empowering women. By alleviating the physical demands of traditional

farming, mechanisation and agro-processing can open up new opportunities for women, enabling them to make a greater impact on agricultural productivity and the broader rural economy.

Agriculture and Climate Change

When we consider the various sectors of the Indian economy, the agricultural sector stands out as one bearing the heaviest burden of climate change. Today, agriculture is at the confluence of three of the greatest challenges of the 21st century – sustaining food and nutrition security, adaptation and mitigation of climate change and sustainable use of critical resources such as water, energy and land.

Climate change is already reshaping traditional agricultural practices and even affecting our food choices today. For instance, South Korea's famous kimchi, traditionally made with napa cabbage grown in cooler mountainous regions, is under threat as rising temperatures spoil the cabbage crop. Similarly, French winemakers are concerned about the future of Merlot due to increasing heat, and lobster populations off the US east coast are shifting to cooler waters, impacting local industries. The impact is far-reaching highlighting the urgency for farming and the food industry to adopt greener practices and contribute to climate mitigation[3].

Financing for Sustainable Agriculture

While sustainable agricultural practices are necessary, they are often more expensive to implement than conventional methods. Sustainable practices like organic farming, climate-smart technologies, and modern irrigation systems may seem costly upfront, but they offer long-term benefits by improving productivity, resilience, and environmental stewardship. Without accessible and affordable financing options, the much-needed shift to sustainable farming practices will remain a distant dream for many.

Many farmers, especially those in rural or underserved regions, struggle with economic, institutional, and social constraints that limit their access. Therefore, sustainable finance should not only promote environmentally friendly practices but also ensure that financial resources are available to the farmers who need them most, providing equitable access to tools, technology, and knowledge.

Institutional credit to agriculture reached an all-time high of 25.10 lakh crore during 2023-24[4], reflecting the importance of financing in driving agricultural growth. Approximately 7.4 crore active Kisan Credit Cards[5] have emerged as vital tools for providing timely and flexible credit, especially for short-term needs. However, addressing regional disparities in access to credit remains critical. If we can ensure that all farmers, irrespective of their location, have access to adequate and timely financing, we will be better positioned to address the challenges of sustainability and resilience in agriculture.

Traditional lending practices have certain limitations in catering to the needs of the agricultural sector. Agriculture is inherently seasonal, and returns are often delayed or reduced. Innovative financial solutions are necessary- ones that are flexible and tailored

to the specific needs of farmers. This coupled with crop insurance products that cover weather-related risks can help mitigate the uncertainties farmers face. Additionally, blended finance models-where public funds are used to leverage private investments-can be instrumental in providing the necessary capital for sustainable transitions. This would not only mobilise resources from multiple sources but also distribute the risks and returns more equitably.

In this context, I would like to highlight five solutions which could go a long way in addressing the issue of financing sustainable agriculture.

Role of Collectives

Farmer Producer Organisations or FPOs have emerged as a crucial mechanism for addressing the specific challenges faced by small and marginal farmers. Their growth has been significant, with over 24,000 Farmer Producer Companies (FPCs) formed by March 31, 2023[6].

These organisations are instrumental in scaling up the adoption of sustainable farming technologies developed by research institutions. By aggregating farmers, FPOs enhance their bargaining power as well as improve their access to technology and increase market opportunities for their output.

To support financing to these organisations, RBI regulations provide that loans to FPOs engaged in agriculture and allied activities, up to an aggregate limit of 2 crore per entity, qualify as priority sector lending. If FPOs engage in farming with assured marketing of their produce at predetermined prices, loans of up to 5 crore qualify as PSL.

Value Chain Financing

The value chain financing model integrates various stakeholders-farmers, aggregators, traders, processors, and financial institutions-into a coordinated system that improves efficiency across the agricultural process. With changing consumer preferences towards branded, well-packed, safe, and healthy food, there is a need for increased focus on structured agriculture value chains and their financing. For financial institutions, access to various participants in the value chain offers additional business opportunities.

Warehouse Financing

Agricultural price volatility is a recurring challenge in India, often forcing farmers to sell their produce at lower prices during peak harvest due to immediate financial needs. Warehouse receipt financing allows farmers to store their produce in warehouses, delaying the sale until market prices become favourable. During this waiting period, farmers can access much-needed funds through commodity financing from banks. This form of financing helps stabilise the prices of agricultural commodities, helps farmers in managing marketing risks, while providing banks with diverse financing opportunities. However, for this form of business to flourish, the country needs more robust third-party warehousing agencies.

Financing Technology Adoption

Technology adoption in agriculture offers immense potential to boost productivity and sustainability. Expanding irrigation infrastructure, promoting micro-irrigation systems, and encouraging farm mechanisation can significantly increase farm income and improve efficiency. Currently, the area under micro-irrigation in India is just 12.54 million hectares, i.e. about 9 per cent of the net sown area[7], indicating a large scope for expansion. Convergence with Centrally Sponsored Schemes such as "Per Drop More Crop" can increase the flow of institutional credit for installing micro-irrigation systems.

Protected cultivation, which can increase crop yields by 5 to 8 times per unit area, also offers substantial benefits such as saving 50 per cent on water and 25 per cent on fertilisers and pesticides. With only about 3 lakh hectares under protected cultivation, there is a significant opportunity to expand this practice using modern techniques which enable year-round cultivation of high-value crops, irrespective of climatic conditions.

Capital formation through convergence with Government Schemes

The Indian government is driving capital formation in agriculture by promoting investments through capital subsidy schemes and interest subventions. The 1 lakh crore Agri-Infrastructure Fund supports institutional credit in alignment with schemes like PM-KUSUM for solar pumps, the Sub-Mission on Agricultural Mechanisation (SMAM), and the Mission for Integrated Development of Horticulture (MIDH). Other initiatives, such as the Agricultural Marketing Infrastructure (AMI) and programs like Pradhan Mantri Formalisation of Micro Food Processing Enterprises Scheme (PMFME), Animal Husbandry Infrastructure Development Fund (AHIDF), and Pradhan Mantri Matsya Sampada Yojana, further enhance agricultural growth. Converging institutional credit with these schemes will help scale up modern technologies and strengthen the agricultural ecosystem.

Leveraging technology

Technology and data-driven insights can enhance financing models. Financial institutions must leverage technology to improve access to credit and mitigate risks. Collaboration with digital platforms that track crop yields, weather patterns, and soil health can provide real-time data that financial institutions can use to assess risk more accurately. These platforms can also help farmers make more informed decisions and boost productivity while reducing their environmental impact.

The RBI has taken several initiatives to facilitate digital public infrastructure and make institutional arrangements apart from policy initiatives aimed at promoting innovation while ensuring safety and stability. Last year, RBI announced the Public Tech Platform initiative through the RBI Innovation Hub, aiming to provide frictionless credit by enabling the seamless flow of digital information to lenders. This open, plug-and-play digital platform, now renamed Unified Lending Interface allows financial sector players to connect effortlessly. Recently, NABARD collaborated with RBI Innovation Hub to integrate the e-KCC loan origination system into the platform, significantly reducing the turnaround time for agricultural loans from weeks to minutes.

Way forward

In conclusion, the challenges are significant, but so are the opportunities. Going forward, two critical issues must be addressed: promoting sustainable agriculture and ensuring adequate funding for it. Institutional credit has grown significantly, but regional disparities persist. Value chain financing and warehouse financing offer potential solutions, while government initiatives like the Agri Infrastructure Fund, PMFME, and AHIDF are helping drive agricultural growth. A concerted focus on addressing regional imbalances, enhancing credit access, and integrating value chain financing is crucial for a more sustainable and resilient future for Indian agriculture.

I hope that this conference will provide a valuable opportunity to the delegates from academia, researchers, and financial institutions to delve deep into the various issues facing the Indian Agricultural Sector, analyse it in the backdrop of emerging climate change challenges and come up with alternate solutions, approaches and policy suggestions.

With this, I would like to convey my best wishes for fruitful exchanges over the next two days to explore solutions that can shape the future of sustainable agriculture and its financing.

Thank you.

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[1] Climate Change 2023, Synthesis Report, Intergovernmental Panel on Climate Change (IPCC)

[2] Seed Replacement Rate is the percentage of area sown out of total area of crop planted in the season by using certified/quality seeds other than the farm saved seed.

[3] Edit, T. (2024, September 6). Kimchi bites. Times of India Blog. https://timesofindia.indiatimes.com/blogs/toi-editorials/kimchi-bites/ (last accessed on September 8, 2024)

[4] NABARD Annual Report – 2023-24; PP80

[5] NABARD Annual Report – 2023-24; PP10

[6] NAFPO. 2023. Farmer producer organisations in India: state of sector report. National Association of Farmer Producer Organisations, New Delhi.

[7] Agricultural Statistics at a Glance, 2022