WRITINGS ON RURAL ECONOMY

CHARTING THE WAY TO RURAL PROSPERITY

DEPARTMENT OF ECONOMIC ANALYSIS AND RESEARCH (DEAR)

January 2021
MISSION

“Promote sustainable and equitable agriculture and rural development through participative financial and non-financial interventions, innovations, technology and institutional development for securing prosperity”
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Message from Chairman, NABARD

I am glad that officers of DEAR, especially the younger lot, have taken lead in writing on various aspects of rural economy. The writings have captured various happenings during the most difficult year of our generation. The range of topics is impressive as they included, *inter alia*, impact of Covid-19, credit flow in North East Region, agriculture - reforms, FPOs, regulated farming, and handloom sector.

Given the importance of the issues raised, I feel deeper exploration of the issues raised in these articles is necessary to come out with policy inputs.

My best wishes to the authors and the Department.

Dr. G. R. Chintala

1 January 2021
How can a Department which is supposed to perform an important function get busy with the mundane? I have been talking to colleagues in DEAR on and off on these issues and they sprang out a pleasant surprise on 1 January 2021 with these writings on the contemporary issues.

I congratulate all of them for the good work. We all would soon be seeing a new line of publications from DEAR.

P. V.S Suryakumar
Deputy Managing Director
1 January 2021
Preface

The year 2020 has been a difficult year for the country. Indian Economy which got derailed and went into severe contraction following the lockdown triggered by the Covid-19 Pandemic is now focusing on revival. Atmanirbharata or self-reliance has been the strategy to revive economy through a series of Atmanirbhar packages. It is widely shared that rural economy with positive growth in agriculture due to good rainfall is poised to stimulate the entire economy by leading the revival process.

In this context, a quick look has been taken on a few aspects of rural economy through various articles written by our officers in DEAR. We covered themes that are relevant to rural economy in 2020. This compilation contains wide range of topics covering rural economy in 2020, impact of COVID, UPI as pandemic-proof digital payment tool, agri-reforms, food-smart agriculture, regulated farming, oil palm scenario in India, vocal for local, empowering farmers through FPOs, handloom sector, credit flow in North East India, life on land, among others.

Our intention in bringing out this booklet is to flag a few issues on various aspects of rural economy that can be explored further. These writings are work in progress and give a glimpse of the issues touched therein.

Credit for this compilation goes to Shri P. V. S. Suryakumar, DMD who interacted with officers on several occasions and inspired them to contribute to the contemporary thinking. We added a few more articles by other officers of the Department to compile this booklet. I acknowledge the spirit of our officers of the Department for contributing to this volume at the short notice. M Dileep Chandra’s contribution in coordinating and compiling this booklet has been very valuable.

Suggestions for further work and quality improvement are most welcome.

Wishing a very Happy New Year,

Dr. K. J. Satyasai
Chief General Manager
Department of Economic Analysis and Research (DEAR)
Amid chaos, Agriculture stood tall in 2020

K J S Satyasai*

The year 2020 has been a nightmare, *annus horribilis*, as credit-rating agency Crisil has described it, for the humankind due to the Covid-19 pandemic that hit almost everything and everybody across the globe. Additionally, after the lockdown in March-end, every single sector was adversely impacted. The Indian economy is all set to shrink – something that has never happened before. The economy is on a downward spiral with little/no chance of revival shortly. Meanwhile, the inflation reached higher levels and breached the Reserve Bank of India’s (RBI’s) upper inflation target of 6 per cent in eight successive months since lockdown. Now, it is estimated that during the current fiscal Gross Domestic Product (GDP) growth will be at -7.7 per cent and consumer price index (CPI) would be 6.9 per cent.

The good news

By the next fiscal, the CPI is expected to be tamed. The economy, on the other hand, is expected to reach pre-Covid levels by 2022. The Government of India has announced a series of *Atmanirbhar* packages to revive the economy at the earliest. Since the state governments have been facing ‘scissors effect’ with reduced revenues and increased expenditure, they will see an additional burden on their already-delicate fiscal situation since more resources will be required for fighting this pandemic.

Agriculture has been dubbed the saviour, as it grew at 3.4 per cent in the April-June quarter of FY 2021, even as rest of the economy contracted at 23.9 per cent. Food grains production in *kharif* was 144.52 million tonnes – 0.8 per cent higher than the previous season. Even the *rabi* prospects are promising. However, farmers bore the brunt of the lockdown in several ways, as was revealed by a quick study by the Department of Economic Analysis and Research (DEAR) in April-May 2020. These included fall in market prices, reduction in production, contraction in demand for agricultural commodities, especially animal products in the initial period. Thankfully, a good monsoon and adequate food stocks saved the day and helped in fighting the lockdown marred by a serious dip in jobs and incomes.

* Chief General Manager, DEAR
Pandemic pangs

Unemployment increased sharply during the pandemic period as industries were closed and there was heavy reverse migration back to villages leading to heavy pressures on agricultural land. On the other hand, the demand for rural handicraft/artisan or handloom products has slumped. Micro, small and medium enterprises or MSMEs took a beating during the same period leading to further loss of jobs and incomes.

In May 2020, a rapid survey by the World Bank in six Indian states – Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh, Rajasthan, and Uttar Pradesh – reported a large drop in employment and incomes. At the same time, the access to relief was high, with remote villages reporting a larger transfer of relief. However, perishable produce markets were more vulnerable.

The second round of the survey done in July 2020, reported increased land under cultivation and reduced borrowings in the kharif season. The rural non-farm sector started resuming activity and wages and work availability improved since lockdown but remained sub-optimal. Beneficiary coverage and access to entitlements under the public distribution system (PDS) functioned well.

As the un-lockdown commenced in a phased manner, the economy started recovering. Agriculture and the rural economy are poised to lead this recovery, according to several analysts. The increased spending by the Ministry of Rural Development, Government of India on MGNREGA provided additional income to rural people. Coupled with this, food grains were made freely available or at discounted prices, helping improve effective incomes. This spurred rural spending driving the revival process. Increase in sale of two-wheelers, as an indicator of rural demand, probably is an effect of the higher incomes. However, on the negative side, rural wages have been on the decline, both in real and nominal terms, especially during the initial lockdown months. Reverse migration also added to the pressure on food and other resources. Increased health expenditure in the wake of the spread of Covid-19 across rural areas is another drag on the rural household economy. Overall, the extent to which rural economy can drive overall economic recovery depends on the persistency in the rise of incomes and quantity and quality of investment by the rural population.

Lessons

The pandemic has caused widespread pain to all. But it taught us many lessons and also hastened the growth of certain segments of the economy. It tested the resilience and fighting spirit of all humankind. In India, several organisations have contributed in fighting the pandemic, managing essential services and food
during the protracted lockdown, helping the stranded labour back home, ensuring liquidity to the sectors like agriculture to stay put and the sectors like MSME to restart activity post-lockdown. NABARD has been one of such organisation, which rose to the occasion with new products, relaxed lending norms to ensure credit to the needy geographies and people. Grassroots organisations like Farmer Producer Organisations (FPOs) and Self-Help Groups (SHGs) helped farmers and other rural people in farm supplies, relief works and proved the point that wherever these grassroots-level institutions were stronger, the adverse impact of the lockdown was less intensive. Also, their positive contribution drove home the need for building stronger people’s institutions during peacetimes so that they come in handy during crises periods.

Another blessing of the pandemic is the spurt in digital penetration. For instance, the Google Pay user base has increased with even small roadside shops accepting it. Similarly, the volume of UPI transactions rose to 2.27 billion with the value reaching ₹3.91 trillion by November 2020. This is a strategic shift for digital payment system in the country as the transactions doubled compared to October 2019 when they crossed one billion mark with a value of ₹1.9 trillion. Interestingly, North Eastern states recorded the highest growth of 140 per cent compared to 57 per cent in the country as a whole in the first quarter of the current fiscal. That is, the digital payment ecosystem can be leveraged to bridge regional disparities which are galore in traditional banking facilities.

The pandemic buttressed the importance of the agriculture sector and buffer stocks in the economy while fighting economic crises. It also rather prioritised agricultural reforms and a set of three reform acts was enacted; The Farmers’ Produce Trade and Commerce (Promotion and Facilitation) Act, 2020, Essential Commodity Act (ECA), 1956 (amendment), and Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020.

Without going into the debate over the laws, one quick point here is the fact that the same shirt which we wore at the age of 10 years cannot fit us when we are 40. The same principle applies to these reforms since the conditions in which these Acts were promulgated are one of severe food shortage, poor infrastructure and investment capabilities in the private sector. Therefore, old laws need to be revised and new laws are a must as the context changes.

The Indian economy is resilient to the extent the agriculture sector supports it by supplying wage goods. At the same time, the sector needs to stay resilient while weathering adverse climate, natural resource conditions and global challenges.
Covid-19, which was first declared as a public health emergency, emerged as a pandemic later. The virus spread was so fast across the world that all countries were forced to impose lockdowns for several months, causing severe damage to their economies. The lockdown had a cascading effect on all sections of the society and adversely impacted both life and livelihoods. Historically, there is a divide between rural and urban India with regard to the essential infrastructure such as Water, Sanitation, Health and Hygiene (WASH), supply chains, and other important services. Therefore, the impact of Covid-19 was far more alarming for the rural community.

Rising Pressure on Rural India

India witnessed an unprecedented and massive reverse migration of people to their rural roots during the Covid crisis. Since the system was not geared up for such exodus, this led to further pressure on rural India, as more people needed to be provided with jobs, food security, and healthcare. Researchers from the United Nations University (UNU) have estimated that an additional 104 million people in India could fall below the World Bank determined poverty line category, taking the overall count to 916 million.

In this backdrop, NABARD conducted the online survey in the month of April-May, 2020, to assess the initial impact of Covid-19 induced lockdown beginning March 25, 2020. The survey tried to capture the impact on:

- Marketing of agriculture produce
- Banking activities in terms of access to credit, recovery and digital transaction
- Activities of SHGs, NBFC-MFIs, FPOs, farmer clubs and MSME sector in rural areas

The data and feedback were obtained through purposive sampling method from 560 districts (110 aspirational and 450 non-aspirational districts) of 33 states/union territories manned by 401 DDMs of NABARD. The responses received were analysed suitably using the standard statistical tools. The survey revealed interesting findings which are presented below:

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# Assistant Manager, DEAR
Agriculture production at all-India level, in almost half of sample districts, was adversely affected by the impact of Covid-19.

Magnitude-wise, agriculture production had not been impacted much, mainly because the harvesting of rabi crops was near completion.

Production in allied sectors declined significantly especially in the poultry sector (-19.5 per cent), followed by fisheries sector, dairy and horticulture.

Prices in allied sectors declined in the range of 2 to 18 per cent. This was led by poultry, and followed by horticulture, dairy, fisheries mainly due to supply chain disruption caused by the restriction on the movement of vehicles.

Farm gate prices had not declined significantly in the agriculture sector.

On the whole, 54 per cent of sample districts witnessed the adverse impact on farm gate prices of agricultural produce.

The restrictions imposed on the movement of man and material, availability of agricultural inputs such as seeds, fertilisers, pesticides, fodder etc. declined in the range of 9 to 11 per cent.

On the whole, 58 per cent of sample districts were adversely affected in terms of availability of inputs.

Due to disruption in supply chain owing to restrictions on the movement of vehicles, prices of agricultural-inputs increased in the range of 9 to 12 per cent.

On the whole, 54 per cent of sample districts were adversely affected in terms of increase in prices of agricultural-inputs.

Additionally, while local procurement centres were opened by various state governments under their jurisdiction, yet restrictions on the movement of vehicles, had adversely impacted about 74 per cent of sample districts in the smooth operation of agriculture marketing through mandis. The impact on the operation of rural haat was more severe with 87 per cent of sample districts having adversely affected. This was mainly due to a complete ban on the opening of rural haats by the local authorities.

Access to credit through term lending and Kisan Credit Cards (KCC) was also impacted in about 89 per cent and 59 per cent of districts, respectively. As regards recovery, 94 per cent of sample districts reported having been affected by the pandemic. However, 63 per cent of sample districts reported an increase in digital transactions by the customers.
Micro-finance activities were also adversely impacted in 95 per cent of the districts and the business activities of NBFC-MFIs was adversely affected in 88 per cent of the sample districts. A similar impact was reported in activities of FPOs and Farmers Clubs promoted by NABARD. However, many SHGs and FPOs seized upon the opportunity of making face mask and sanitisers as also direct selling of vegetables/fruits to the customers thereby helping the local community and administration as also increasing their business.

The MSME sector was the worst hit, in terms of impact on the price level of raw materials, employment, production level, consumer demand and disruptions in supply chains. Decline in production level and employment was reported in 97 per cent and 96 per cent of the sample districts, respectively. Similarly, the adverse impact was reported on consumer demand and cash flow of the MSME sector, thereby increasing hardship of the people at large.

**Actions that need to be taken include**

- Income support to farmers in general and particularly ones engaged in poultry and fisheries sector
- Reactivate micro-finance activities through injection of liquidity to NBFC-MFI
- Banks need to be nudged to enhance credit linkage/second dose to eligible SHGs
- Support for MSME sector through credit support (working capital) and interest subvention
- Opportunities for mask making, sanitisers, direct delivery of food grains, vegetables, fruits to be encashed by SHGs and FPOs
- Awareness programmes on Covid-19 by SHGs, FPOs and FCs in rural areas

Rural economies have the potential to create meaningful economic opportunities in the future. It is important to attract the youth by giving them career and entrepreneurial opportunities in the agricultural value chain. Higher urbanisation rates signal that more people need to be fed, and as the middle class grows globally, populations will demand higher-protein diets as well as more diverse products. Further, services associated with food production—such as storage processing, food safety, packaging, marketing, and advertising—are components of the food value chain that might be more attractive to youth, in terms of available economic opportunities.
In short, rural development needs to go beyond the notion of improving agricultural productivity. It must promote agricultural transformation that modernises and commercialises agriculture, encourages investments on social capital in rural areas, and boosts private enterprise and investment. Therefore, developing and enabling institutions and farmers as entrepreneurs are important steps in addressing some of the inefficiencies of the agriculture sector.

Some of the issues highlighted above need urgent attention since they have medium to long-term implications on India’s food system. Though the threat of the virus for India is far from over, we have to realise the need for the economy to start functioning. Yet, it is now understood that business-as-usual is a thing of the past. As we build the ‘new normal’, we will need to be innovative in our thinking, and ensure that our efforts to rebuild are sensitive to the needs and circumstances of farmers with small holdings. This way we can protect and support the resilience of the local food supply while also taking steps to ensure future systemic shocks can be handled quickly and effectively.
Covid-19 has eroded the fiscal discipline of all states due to increasing debt, expenditure, deficit and interest payments. The Reserve Bank of India’s (RBI) study on state finances reveals that the higher share of capital outlay and developmental expenditure in total government spending has a positive impact on per capita Gross State Domestic Product (GSDP) growth of states while revenue deficit and non-developmental expenditure have negative consequences. The RBI study also reveals that low levels of debt are conducive for growth. Clearly, the performance of state finances plays a pivotal role in the economic growth of the state. Taking cognisance of this issue, this article aims to measure the fiscal performance of 18 major states by developing a composite Fiscal Performance Index (FPI) consisting of 10 fiscal indicators.

A higher proportion of developmental revenue expenditure in revenue receipts and developmental capital expenditure in revenue receipts suggest a better resource allocation by the government in the developmental activity. Telangana, Karnataka, Madhya Pradesh, Odisha and Gujarat states have spent more than 20 per cent and 60 per cent on both developmental capital expenditure to revenue receipts and developmental revenue expenditure to revenue receipts while Uttar Pradesh, Punjab and Kerala states have spent less than 20 per cent and 60 per cent on both the sectors in 2020-21, according to Budget Estimates (BE).

Odisha, Jharkhand, Telangana and Chhattisgarh states have maintained more than 6 per cent of state’s tax revenue to GSDP ratio and more than 2 per cent of state’s non-tax revenue to GSDP ratio in 2020-21 (BE). As a result, the revenue efficiency increases, helping increase the fiscal health of the state.

More than 50 per cent of the states have crossed the Fiscal Rule Legislation (FRL) threshold (of 3 per cent). In 2020-21, about half of the states have budgeted the (Gross Fiscal Deficit) GFD-GSDP ratio at 3 per cent and above (Table 1). The direction of possible revision is evident from the fact that the average for states presenting their budget before the outbreak of the pandemic was 2.4 per cent, while the average for the balance number of states that made post-outbreak presentation is 4.6 per cent of the GSDP. Beyond 3.5 per cent, following the four reform conditions for availing extra borrowing (by states) imposed by the Centre
such as -- Ease of doing business; one nation, one ration card; power distribution; ramping up revenue of urban local bodies. On an average, market borrowings financed slightly more-than-half of the consolidated fiscal deficit of states till 2016-17. Since 2017-18, the share of market borrowings has increased rapidly and is budgeted to reach close to 90 per cent in 2020-21 (BE).

A scatter plot depicts a positive relationship between fiscal deficit and debt. As per the 2020-21 (BE) data, many states remain below the 3 per cent ratio of fiscal deficit to GSDP while the threshold debt to GSDP ratio of 25 per cent as perceived by the Fourteenth Finance Commission (FC-XIV) stands breached by many states. However, if we consider a little strict measure of the implicit FRBM debt ceiling of 20 per cent prescribed by the FRBM Review Panel (as adopted in the Union Budget 2018–19), most states remain above the threshold level (fig. 1).

<table>
<thead>
<tr>
<th>State-wise % of GFD to GSDP in 2020-21 (BE)</th>
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<tbody>
<tr>
<td>Less than 3% of GSDP</td>
</tr>
<tr>
<td>Arunachal Pradesh, Assam, Bihar, Haryana, Maharashtra, Mizoram, Punjab, Sikkim, TN, UP, UK, WB, Puducherry, Delhi</td>
</tr>
</tbody>
</table>

**Source**: State Finance: A study of Budgets 2020 from RBI.

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**Fig. 1: State-wise % of GFD to GSDP and Outstanding Liabilities to GSDP in 2020-21 BE**
State-wise fiscal performance:

There is a large variation in inter-state performance in terms of different sub-indices justifying the use of multiple indicators in assessing the fiscal performance of states. States like Odisha, Uttar Pradesh, Telangana, Karnataka and Chhattisgarh have taken first five ranks in 2018-19, while Punjab, Kerala, West Bengal, Andhra Pradesh and Tamil Nadu states have been first five worst-performing states. In 2019-20, 10 states improved their performance from 2018-19. The fiscal performance index score has declined from 2019-20 to 2020-21 in 8 states. Finally, Punjab, Kerala, West Bengal, Andhra Pradesh states have poor fiscal health.

Conclusion and policy implication:

This article attempts to measure the composite fiscal performance index of 18 major states of India. The FPI is constructed by taking five major sub-indices which are derived from ten fiscal indicators (minor sub-indices). It is observed that there are large inter-state variations in FPI. The fiscal performance of the states is driven by various indicators. The FPI will help the states to negotiate with the lenders while borrowing. The states with higher FPI may be able to negotiate a lower cost of borrowing as their fiscal performance is better. This is mainly applicable for institutional borrowing by the states as well as loan availed from external borrowers. In the case of external borrowers, the states with higher FPI may negotiate for lower spread over the benchmark rate. In the auction market, when the states borrow through the RBI by offering bonds (state development loan) in the open market, the eligible player in the market bid for the bonds in terms of yield. In this open market borrowing, the state development loan with higher FPI may attract lower yield. This will reduce the cost of borrowing for the states with higher FPI.
Post-independence, there have been various initiatives have been taken to improve the life of farmers with appropriate slogans such as ‘Jai Jawan-Jai Kisan’ to ‘Doubling Farmers’ Income’. But ironically, the farmers are caught in the vortex of more serious challenges. Recently, the central government has passed three Farm Acts intending to overhaul the country’s agriculture market. However, many state governments and farmer organisations are protesting against these Acts. The apprehensions: The new Acts will end the Minimum Support Price (MSP) system and the farmers will be left at the mercy of big corporates. As a result, critics are demanding rollback of the recent three Acts and state governments like Punjab, Chhattisgarh, Rajasthan and Kerala have already passed state Acts to nullify the possible impact of the three farm Acts enacted by the central government.

Rich middlemen, poor farmers:

Since the colonial era, the Indian agriculture market has been over-regulated and restrictive. Recent reforms should not be just seen from the restrictive prism of MSP and Agriculture Produce Market Committee (APMC). It has a larger goal of bringing structural changes in the agriculture market. India developed the system of MSP in 1965 mainly to address the serious shortage of staple food in the country. On the recommendation of the Royal Commission of Agriculture 1928, regulated markets had been established. This included regulation of trade and the establishment of mandis in the countryside. Post-independence, in the 1960s and 70s, states-organised agricultural marketing came into existence with the establishment of APMCs. These steps benefitted farmers in the past. But considering the current situation, it’s high time to reform the agriculture market and do away with these archaic laws and culture of Arathiyas (middlemen).

The present mandi system favours middlemen unfairly. They get heavy commission and have undue advantage over farmers, who continue to remain poor. As many as 22.5 per cent of the farmers live below the official poverty line. The NSSO 70th round survey report reveals that the average income of an agricultural household from July 2012 to June 2013 was as low as ₹6,426, as against its average monthly consumption expenditure of ₹6,223. The survey also suggests low awareness about MSP among farmers and even lower level of crop sales to procurement agencies.

* Assistant Manager, DEAR
More than MSP:

The Farmers’ Produce Trade and Commerce (Promotion and Facilitation) Act, 2020, allows the inter-state and intra-state sale of farm produce outside the APMC mandi and creates an ecosystem where farmers and traders enjoy the freedom of choice in sale and purchase of agricultural produce. The purpose of this Act is to end the monopoly of mandi and reduce the interference of middlemen. On the other hand, the Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020, provides the legislative framework needed to boost contract farming. The objective is to provide a direct link between farmers and the food processing industry. However, 86 per cent farmers in India are small and marginal, making it inconvenient for industries to purchase raw material. It also disallows farmers to reap economies of scale, lowers their bargaining power and exposes them to exploitation by big firms. To improve collective bargaining, the formation of more Farmers’ Producer Organisations (FPOs) has been suggested. However, the Rural Report – 2 of Gaon Connection points out that just 34 per cent respondent farmers are aware of FPO and just 19 per cent of respondent farmers reported knowing any farmer who is member of FPO/Farmers’ Club. Strengthening of FPOs will improve the bargaining power of farmers and ensure successful implementation of recent reforms.

Similarly, amendments in the Essential Commodity Act (ECA), 1956 will promote private investment, improve the marketability of crops and improve economies of scale in the agriculture value chain industry. The restrictions on hoarding food commodities by the government through ECA resulted in widespread harassment of traders and rent-seeking behaviour.

Collectively, the recent agriculture-reforms try to address the problems of marketing and agriculture supply chain and promote the philosophy of ‘one nation - one market’. The focus on contract farming and relaxation in ECA will reduce price and production uncertainty and the effect of ‘cobweb phenomenon’. These reforms will also encourage farmers to adopt smart farming techniques. In 2003, about 40 per cent farmer households accessed information on modern agricultural technology from one or more sources. This increased to just 41 per cent of the cultivating households accessing technical help from any of the listed agencies/sources in the period from July 2012- December 2012 (NSSO 70th round).
Farming as a career:

The reforms can lead to a paradigm shift for the agriculture sector. It needs to be backed with public capital investment in agriculture. The reforms have the potential to make agriculture a catalyst of growth of the rural economy since the majority of households in all the major states rely on agricultural activity (cultivation, livestock and other agricultural activities) as the principal source of income (NSSO 70th round survey). It is, thus, imperative to promote farming as a career for the youth and change the perception of farmers from poor to smart, educated and prosperous.

As per the NSSO 59th Round survey 2003, 60 per cent farmer households stated that they liked farming as a profession while rest 40 per cent preferred another career, given a choice. But the latest Gaon Connection Rural Report – 2, 2020, states that only 32 per cent farmers want their kids to continue farming. The same report, however, does highlight that 51 per cent of respondent farmers believe agriculture is profitable. This finding can be seen as an opportunity in crisis by following the ‘move out and move up’ approach which means better industry and agriculture linkages will create more employment avenues for people outside agriculture. And those who will remain in agriculture will adopt smart farming techniques, leading to better incomes. By bringing these reforms, the government has taken the right measure in the right direction but it should be seen as the first step towards the transformation of the agriculture sector.
Building sustainable and resilient community food systems from farm to fork – A case for Indian Agriculture
Tiakala Ao*

‘Food systems’ have usually been conceived of as a set of activities that are involved in feeding a population. These systems include food production (growing and harvesting), processing (or transforming or changing), distribution (packaging, transporting & marketing) and consumption. They operate within and are influenced by the social, political, economic and natural environments. Each step in the process is dependent on human resources that provide labour, research and education. Food systems also impact nutrition, food, health, economic development of communities and agriculture. The term ‘food system’ may seem large, abstract, or distant to people not directly involved in food production, processing, or sales. However, people are involved in every stage of the food system. Even people who think the food system does not involve them participate in the food system every day by purchasing and eating food.

Globalised food systems exposed:

In the past three decades, ‘food systems’ have become increasingly globalised. Today, California raisins, Mediterranean olives, and New Zealand kiwi sit next to each other on supermarket shelves from metros to smaller cities and towns. The trade in agricultural goods — food, vegetable and animal products, oils, fats, tobacco and beverages — amounts to $1.6 trillion annually, or approximately 10 per cent of total global trade (UNCTAD, Key statistics and trends in International trade, 2018).

However, globalised trade has also created inherent vulnerabilities. Supply chains have become longer, more complex and more tightly connected. A single break in the chain can cause the whole system to fall apart – the Covid-19 health crisis exposed the underlying risks, fragilities and inequities in the global food systems.

They are highly vulnerable to climate change. There is a need for more resilient food systems. The pandemic is not just a health crisis but also an economic and a food crisis, and that too, coming on top of a climate crisis. Like climate change, its effects will most acutely be felt by the poorest and most vulnerable countries and communities. It has also raised serious concerns on reduced access to

* General Manager, DEAR
nutritious food by vulnerable sections of the society which calls for affirmative actions on making safe and nutritious food available, accessible and affordable. The crisis, therefore, has provided us with an opportunity to re-imagine the supply chain that produces and delivers food to consumers, creating systems that are more diversified, regional, and resilient.

The agro ecology approach:

Agencies around the world such as the World Bank-led global agriculture assessment (IAASTD), the Food and Agriculture Organization (FAO), Intergovernmental Panel on Climate Change (IPCC) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) have been widely endorsing the Agro ecology approach as the alternative to a resilient and sustainable localised food system. The agro ecology approach can be described as a meeting point of two predominant concerns of providing secure, sustainable livelihoods to ordinary farmers and peasants on the one hand and resolving major environmental, nutrition, health and safety issues, on the other hand. In a nutshell, it is a meeting point of equality and environment protection, of justice and safety, of livelihoods and health. These main concerns are closely related to each other and should be pursued together.

The pitch for the agro ecology approach in building resilient and sustainable farming systems has been growing even in India with small pockets across different geographies being practised within the country, and offshoots such as zero budget natural farming (ZBNF) gaining traction in the southern states of Karnataka, Kerala and Andhra Pradesh. However, given the diversity of agro-climatic and agro-geographical situations, there is a need to look in detail at the more specific situation in the Indian context. A few pathways to transform our food systems to make them sustainable and resilient in tackling the twin challenges of climate change and malnutrition are suggested below:

Repurposing of existing agricultural policies to favour crop diversification

Agricultural development in India has been highly uneven on various fronts – regional imbalances and imbalances between main cereals on the one hand and millets, legumes, oilseeds on the other. The existing policy regimes like the Minimum Support Price (MSP) and Public Distribution System (PDS), coupled with subsidies on irrigation, power and farm inputs, are skewed in favour of staple crops like rice and wheat. Although MSP mechanisms exist for climate-
resilient and more nutritious cereals like sorghum and millets, they are largely ineffective because of the policy bias in favour of the ‘big two’ staples. While these policies played an important role in ensuring calorie sufficiency across the country and thereby, led to a substantial reduction in the incidence of hunger, they tended to inhibit diversification of the food systems and hence, the overall supply of micronutrient-rich food. Over time, this has led to nutrient imbalances in the food system that contribute to both obesity/overweight and micronutrient (mineral and vitamin) deficiencies without fully resolving the undernourishment challenge.

These imbalances need to be corrected. This would require clear strategies for diversification of production systems to improve the access and affordability of nutritious food, such as fresh fruit, vegetables, pulses and livestock products. It would also require strategies for promoting individual diet diversity. A decentralised approach, which can look at ‘special-local’, needs to fully utilise the traditional wisdom, particularly in the context of the diversity of seeds and water/moisture conservation is needed against the current highly-centralised approach to farm development. There is a need to achieve self-reliance in all staple foods, legumes and vegetables, including oilseeds and edible oils. However, farmers may be reluctant to switch to a new-crop production system unless their income from alternative crops is stabilised. The shift in farmers’ behaviour can be made possible with suitable financial incentives during the transition (making inputs such as seeds affordable and available), value-chain strengthening and efforts to change consumer behaviour. The concept of food-miles being less (food being consumed nearer to its production) should be respected. Similarly, investments in the animal husbandry sector should be pursued considering the rising demand for meat, dairy products and eggs. The diversification to small ruminants, backyard poultry and aquaculture provide additional income to smallholder farmers and the landless poor.

**Building and strengthening nutrition-sensitive and sustainable value chains:**

Indian agriculture is dominated by farmers with smallholdings. Linking them to markets is essential for commercialisation, to improve household-level incomes and provide the incentive for diversification. However, the fragmented nature of agricultural markets leads to high transaction cost in its access, particularly for small and marginal producers due to low economies of scale, low bargaining
power, poor connectivity to markets and information asymmetry. Hence, aggregating small farms can help reduce transaction costs for accessing value chains. Aggregation models in the form of cooperatives and FPOs and vertical co-ordination mechanisms such as contract farming go hand-in-hand in small farm-based economies as they address various challenges of the value chain. Well-functioning value chains are also critical to improving the efficiency of bringing food from farm to table by minimising food loss and waste, thus improving access and availability of food.

However, for small producers to connect to markets through these value chains requires policy support, interventions like aggregation models, infrastructural development and reform of existing marketing practices that have led to increasing transaction costs in the market. These measures are essential for making value chains sustainable and improving welfare. Agricultural production should focus on high-value agricultural products like fruits, vegetables and dairy products. As far as practicable, primary-processing facilities should be established close to the farm gates. Digital agriculture tools could assist producers to gather market intelligence and provide for better management of the entire value chain. Government policies to incentivise agricultural-tech start-ups and the private sector, and logistics development to strengthen value chains should be given priority.

The inadequacies noticed in the agricultural supply chains, particularly of perishables, during the lockdown period, can be addressed by the use of smart technologies (artificial intelligence; block chain, etc.) and encouraging e-commerce and delivery companies. Operationalising local procurement of cereals, pulses, millets, and other nutritious food items for government programmes like the Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) would not only help achieve nutritional outcomes but also enhance livelihood opportunities for rural people engaged in the production, primary processing/value addition and supply of these items. The Agriculture Infrastructure Funds committed by the Government in its stimulus package under the Atmanirbhar Bharat, the recently enacted laws on agricultural trade and commerce (agricultural marketing), as well as price-assurance and farm-services agreement (contract farming) and promotion of FPOs, would be beneficial for farmers with effective implementation and cooperation by the States.
Minimising GHG emissions related to food production, transport and consumption:

Agriculture in India contributed 16 per cent of total carbon dioxide equivalent emissions, according to the 2018 second biennial update report to the United Nations Framework Convention on Climate Change (UNFCCC). A significant amount of these emissions emanated from methane and nitrogen oxide that came from livestock and application of fertilisers, respectively. The carbon footprint swells further when emissions from storage, transport, packaging, processing, retail, preparation and waste are calculated. The Intergovernmental Panel on Climate Change includes these parameters while calculating food-related emissions.

This calls for building smaller and localised value chains instead of supermarket-driven long-value chains that have larger carbon footprints. Localised chains will ensure fresh-food delivery to improve access to healthy food among disadvantaged groups and reduce diet inequities. Value chains — that thrive on local produce — also keep prices in check and ensure affordability. Emphasis should be placed on investing in technology that reduces emissions through livestock and a gradual weaning away from inorganic chemical-based applications to create healthy food systems.

Further, climate-resilient and less water-intensive crops should be incentivised and popularised among farmers and consumers alike. Steps taken to address climate change should ensure better incomes and nutrition security.

Engagement with women and empowering them:

With the evolving roles that women play in rural India, a major trend that we see emerging for the future is the growing importance of women in the agricultural sector. Hence, there is a need to focus on improving agricultural productivity of women to stimulate rural growth in future. Evidence suggests that women’s asset ownership (agricultural lands, dwelling house, etc.) is critical for their participation in decision making within households. State land policies, therefore, must address this sensitive dimension to achieve positive nutritional outcomes. Education and empowerment of women are also positively correlated with reduced prevalence of anaemia and malnutrition. Therefore, they must be included in policy-level strategies.
Change in consumer behaviour:

By 2027, India is expected to overtake China as the most populous country in the world. With around 1.38 billion people (almost 17 per cent of the world), changing food habits—dietary quality as well as quantity—will have ramifications for future consumption demand and food systems. In the post-Covid period, consumers across the spectrum will want to adopt diets that are healthy and can boost their immune systems. To create consumer interest in a food system with low health risks, the government must create behaviour change campaigns in rural and underserved populations. However, such campaigns may not be sufficient to achieve behavioural changes. Several other factors, like taste, affordability, convenience and knowing how to prepare the desired food items in a palatable way would influence the change process. Government programmes can be great delivery channels to leverage nutritious food products in India and can play a significant role in increasing household diet diversity, as well as reducing obesity. Consumer choices can drive the private sector toward sustainable practices. This trend is likely to increase as consumers place heightened value on sustainability. Hence, labelling for both nutritional content and sustainability practices would allow consumers to choose food that is sustainably produced. Also, labels can help consumers make healthy choices.

Investing in research and innovation:

Priority has to be accorded for upscaling research on emerging areas of climate science to develop technologies that must include pest surveillance and forewarning systems; simulation modelling and big data analytics, etc. Through the use of ICT and emerging technologies, digital agriculture could play an important role in helping adopt various climate-smart interventions. Focus on agricultural research and innovation to ensure efficiency in resources (water; nutrient) use; carbon sequestration; assessment of greenhouse gas (GHG) emissions from the agriculture sector, etc. has to be made with the enhanced allocation of budgetary support and collaborations/partnerships. Enhanced allocation for research exclusively devoted to nutrition-sensitive agriculture, would be a very productive investment. Expanding localised production of diverse and bio-fortified crops should be a priority item for the agricultural extension system. Covid-19 pandemic will expectedly drive major public investments towards health infrastructure and related resources, but this should not in any way preclude investment in agriculture research and agriculture-innovation ecosystems which is equally vital.
Co-ordination between government bodies:

Creating sectoral synergies among various government bodies at all levels is essential to achieve the desired goals of nutrition-sensitive programmes. While the national or state governments address larger policy-level issues, effective co-ordination at district and local levels (blocks or panchayats) should take care of operational issues. The lessons learned from the pandemic indicate that removing the obstacles of a siloed approach in the public delivery system and governance will positively pay off. Multiple dimensions of planning interventions and implementation are crucial for achieving sustainable and nutritious food systems. Agricultural policies must re-orient towards sustainable food production systems that necessarily focus on climate-resilience and nutrition and minimise risks to the farmers, their families and communities.

Conclusion:

Demands on the global food systems are growing exponentially. Over the next 20 years, they will need to feed 10 billion people and at the same time, protect natural resources and ecosystems for future generations. As things stand, the world is dangerously off-track and the Covid-19 pandemic has given it a further devastating setback.

However, there is hope. With 10 years to go to end hunger, poverty and inequality, food systems underpin all 17 of the UN Sustainable Development Goals for 2030. By leveraging the links between how we produce, buy, sell and eat food, it is possible to support healthier, more prosperous and fulfilling lives.

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“There are people in the world so hungry, that God cannot appear to them except in the form of bread.” – Mahatma Gandhi

In 2015, world leaders under Sustainable Development Goal -2 vowed to end all forms of hunger and malnutrition by 2030, making sure all people – especially children – have sufficient and nutritious food all the year. This involves promoting sustainable agricultural practices, supporting small-scale farmers and equal access to land, technology and markets. The progress in this regard has been quite sluggish. In addition, the unprecedented disruptive force of the Covid-19 pandemic has laid bare the fragility and inequities of our current food systems.

As per the latest Global Hunger Index, India has improved its rank by 8 positions from last year but it still sits behind the majority of its South Asian neighbours – Pakistan, Nepal, Bangladesh, Sri Lanka and Myanmar. Only Afghanistan, ranked 99th, is worse off than India. The situation is perhaps grimmer in rural areas as revealed by a paper, titled ‘Affordability of nutritious diets in rural India’, which estimates three out of four rural Indians cannot afford a nutritious diet.

**Improving effectiveness is key:**

This seems puzzling, given that India implements one of the largest food security measures in the world, the National Food Security Act (NFSA) 2013. Also, the Integrated Child Development Services (ICDS) aims at addressing the nutrition security of children under the age of 6, lactating mothers and pregnant women. The National Programme of Mid-Day Meal in Schools aims to provide nutritious meals to children in primary schools. Under the *Antyodaya Anna Yojana*, families with an income of less than ₹250 per capita per month are entitled to 35kg rice at a subsidised rate. In light of all these developments, improving the effectiveness of these programmes will be central to improving the food and nutrition security situation in the country.

Further, hunger and undernutrition cannot and should not be fixed by mere calorie provision. We should aim at agricultural-food systems which are

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nutritious, sustainable and inclusive. Towards this, the government’s multi-prolonged strategy is re-imagining the ‘Indian Thali’ to include more coarse grains and pulses, both of which India is the largest producer of.

**Falling consumption of millets:**

Traditionally, coarse grains (also known as millets) have always been part of our diet. However, after the Green Revolution, India has witnessed a decrease in the area under millet cultivation. The main reasons behind the decline were subsidised supply of fine cereals through the public distribution system (PDS) and change in consumer preferences. Being rich in micronutrients and fibre, these coarse grains like maize, jowar, bajra and ragi are a cost-effective way to a balanced diet. Recognising their nutritional benefits, these are being re-branded from known as poor man’s food to nutri-cereals. The year 2023 will be observed as the ‘International Year of Millets’, following India’s proposal to the Food and Agriculture Organization. These crops are not water or input-intensive like wheat or rice, can cope with relatively poor-quality soil and are dual-purpose (both food and fodder). Promoting them would help support smallholder farmers’ ability to increase food production and also build climate-resilient agri-food systems. To incentivise their production, the minimum support price (MSP) for marketing season 2020-21 was increased ₹150/quintal for bajra, ₹145/quintal for ragi, ₹90/quintal for maize and ₹70/quintal for jowar.

Similarly, pulses being a major source of protein content in India, play an important role in building health. The per capita net availability of pulses declined from 22.1 grams per day in 1951 to 17.5 grams per day in 2019(P). Inefficient marketing and relatively higher prices of pulses aggravate the problem of poor availability of pulses leading to malnutrition. Pulses contributed to 10.6 per cent of protein intake in rural areas and 12.4 per cent in urban areas in 2011-12 (NSSO, 2014a). The increase in protein intake from pulses over the years has been the slowest among all other foods. It is noteworthy here that pulses benefit the ecosystem and have the lowest carbon and water footprints among the protein-rich foods.

**Incentivise production:**

To increase the net availability of millets and pulses, a localised approach is needed. States and districts, which have natural advantages of growing certain types of pulses and millets, should be incentivised to grow the same. Also, states with higher yields but the relatively lower area under a certain type of millets
and pulses could be incentivised to increase the area under them. Considering farmer aggregation models like FPO to bring about scale in farming as well as post-harvest activities like assaying, storage, value addition and marketing can be beneficial to the farmers. Also, an FPO can interface e-NAM to overcome the challenges faced by the farmers in terms of small marketable surplus and resource constraints in undertaking post-harvest activities. Direct linkage with the millers, particularly in cases where crop variety makes a huge difference in milling efficiency, can be achieved through FPO and cluster-based model.

On the demand side, efforts are needed to raise awareness as ration cardholders still prefer wheat and rice to coarse grains and hence the states are not too keen on procurement of millets. Similarly, there is tremendous scope to popularize pulses as ‘Health Food’ or ‘Nutri-Rich Food’. Something on the lines of the popular 1980s jingle ‘Sunday ho ya Monday, roz khao ande’, which instantly struck a chord with an audience that aspired to eat healthy but was not sufficiently aware of the nutritional qualities of eggs, may be devised.

Further, to boost the consumption of vegetables and fruits, nutrition gardens may be created systematically to offer micro-solution to India’s problem of rural undernourishment and issues like stunting and wasting. They would provide steady incomes and also help in curbing diet-related diseases and undernourishment. Towards this, the vast network of self-help groups can play an enabling role.

The doctrine ‘Let food be thy medicine’ espoused by Hippocrates nearly 2,500 years ago, which is also central to Ayurveda, may be our guiding light. A diversified ‘thali’ encompassing locally-grown cereals, pulses and vegetables will help not only to attain nutritional security but also food security (as a diversified agricultural-system is more sustainable and climate-friendly).
One of the ironies of agriculture and the food situation in India is that while its granaries are filled to capacity, millions of people still go hungry. On the Global Hunger Index rankings for 2020, India has been ranked at 94 among 107 countries. Undernourishment is high, especially among children and women. According to Food and Agriculture Organization’s report ‘The State of Food Security and Nutrition in the world, 2020’, an estimated 189.2 million Indians or 14 per cent of the country’s population were undernourished during 2017-19. This figure was down from 2004-06 when an estimated 21.7 per cent of the population was undernourished and the number of people without access to adequate calories stood at 249.4 million.

Crop planning can solve this paradox in agriculture. In the absence of any formal crop planning, it is the Minimum Support Price (MSP) architecture that drives the current cropping pattern across the country. The price signals that farmers receive in one season influence their crop choices in the next. The absence of crop planning in earlier times can be justified, as the country was focused on achieving self-sufficiency in food production. However, having achieved surplus production, to manage it is the need of the hour.

**The Telangana model:**

The government of Telangana has launched a new agriculture policy under which farmers have to cultivate the crops advised by the government. The state is providing free electricity, investment support, free insurance, crop procurement and other input facilities to the farmers which has substantially increased the irrigation capacity. All these efforts have helped the farmers to produce large quantities of agriculture output for profitable marketing. As traditional monoculture of rice has been leading to marketing problems and ample demand for other crops exist, a way forward towards enhancing farm income is to introduce regulated farming.

This policy promotes the state’s agricultural products in India as well as in the world market. Though the present focus is on cropping pattern, a comprehensive agriculture policy in future should address a number of other related challenges, for example, the issue of reforming India’s domestic support policies,

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safeguarding sustainable agriculture and exploring the export potential for agricultural-products.

The agricultural-food systems are undergoing rapid transformation in the country. There is an increasing concentration in processing, trading, marketing and retailing that is being observed in all regions and all segments of production-distribution chains in India. The traditional way in which food is produced is without any idea of when, to whom and at what price farmers are going to sell their crops. This is being replaced by practices followed by manufacturers, with coordination between farmers, processors, retailers and others in the supply chain. Farmers have to produce what consumers require, rather than depending on markets to absorb whatever they produce.

The government spends a lot on input subsidies. The largest input subsidies are provided for fertilisers, electricity and irrigation, and, to a lesser extent, for seeds, machinery, credit and crop insurance. These subsidies played a key role in increasing production, and their indiscriminate use without considering natural resource management is contributing to both unsustainable agriculture and high fiscal deficit.

In contrast to policies of the US and Europe, where farmers were offered heavy subsidies to export their produce, the policymakers in India use restrictive export policies to keep domestic prices low. To compensate the farmers, the government introduced minimum support price and input subsidies. One consequence of such an approach is that we are far from being secure in the field of edible oils, thereby importing about 65 per cent of its annual requirement. By 2030, this number is expected to go up to 70 per cent. This is also true for other products such as pulses, vegetables, fruits etc.

**Exports push needed:**

India is second in global agricultural production, but its share of world agricultural exports is as low as 2 per cent. Agricultural exports contribute about 2 per cent to India’s gross domestic product, lower than other developing agrarian countries. To improve the scenario, policy reforms as under are required:

- Phase-out the built-in consumer bias (that is anti-farmer) in agricultural-policies
- Create business space for private players (including FPOs) to have integrated markets
• Use an income policy approach (through direct cash/benefit transfer) to protect both consumers and small farmers

• Create a stable agricultural-trade policy and streamline the high customs duties on India’s export-competing products like rice.

In *kharif* 2020, the government of Telangana advised the farmers not to grow maize and instead grow cotton and tur. With tur prices above the MSP of ₹6,000/per quintal, the farmers who heeded the advice stood to gain, while maize prices were 40-50 per cent lower than the MSP of ₹1,850 per quintal. So, the state government got it right. But cotton prices are lower than the MSP of ₹5,515 per quintal.

Governments need to advise the farmers by using market intelligence and data analytics. Collecting market data continues to remain a challenge. The central pool’s stocks of wheat and rice are much higher than the buffer norms. So, the Centre may discuss the cropping patterns with major wheat and rice procuring states to diversify the crops in areas which are less suitable for growing them.

Finally, regulated farming makes agriculture less risky and more engaging which will draw youngsters into the profession. While the farmers in Punjab feel threatened by the new laws on agriculture marketing, it will be interesting to see if the Centre can persuade Telangana to reduce the area under rice in favour of other crops like pulses and oilseeds. Regulated farming is a good way to ensure India’s food security. This sure is a model worth emulating for other states.
World Trade Statistical Review 2019, says that world merchandise exports increased on average by 1.8 percent per annum during 2008 to 2018. Exports of world agricultural products recorded a higher growth and increased by 3.1 percent annually and share of agri-exports in total exports increased from 8 to 10 percent during 2008-18. In 2018, top ten exporters of agricultural products contributed 72 percent of the world exports and the top seven exporters remained same in 2017 and 2018, led by the European Union, United States, Brazil and China. In 2018, India moved up to 8th position and Australia dropped to 9th position among top exporters of agricultural products. World exports of the agricultural products increased by 5 percent in 2018. Among top ten agri-exporters of 2018, China recorded the highest increase (9%) in its agricultural exports, followed by Brazil (6%) and Mexico (6%), while Australia (-10%), and Indonesia (-7%) witnessed a significant decline. An analysis of the share of India’s agri-exports and imports in global scenario showed an increase during 2005 to 2017. Share of agri exports rose from 1.2 percent to 2.2 percent in global exports while share of agri-imports increased from 0.8 percent to 1.7 percent in global imports over the same period.

India as a leading producer, but waste galore:

India is among the world’s leading producers of cereals, milk, sugar, fruits and vegetables, spices and seafood products. Indian agriculture continues to be the backbone of our society and provides livelihood to nearly 58 per cent of our population. India supports 17.84 per cent of the world’s population with merely 2.4 per cent of the world’s land and 4 per cent water resources. Hence, continuous innovation and efforts towards productivity, pre-and post-harvest management, processing and value-addition, use of technology and infrastructure creation are imperative for Indian agriculture. Various studies on fresh fruits and vegetables, fisheries in India have indicated a loss of about 8 per cent to 18 per cent on account of poor post-harvest management, absence of cold chain and processing facilities. Therefore, agro-processing and agricultural exports are a key area for us and it is a matter of satisfaction that India’s role in global export of agricultural products is steadily increasing. India is currently ranked eighth amongst the major exporters globally, according to World Trade Organisation trade data for 2019. India’s share in global exports of agriculture products has increased from 1 per cent a few years ago, to 2.27 per cent in 2018. The exports of agricultural

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commodities increased from ₹6,003 crore during 1990-91 to ₹2,61,900 crore in 2019-20, growing at the compound annual growth rate (CAGR) of 14.26 per cent while total exports grew at the CAGR of 16.33 per cent between 1990-91 and 2019-20.

The commodity-wise exports of principal agricultural commodities show that from 2013-14 to 2019-20, spices exports were increasing at the CAGR of 9.98 per cent, followed by marine products (9.11 per cent), cereals preparation (7.75 per cent) and tea (4.98 per cent). The share of agriculture export in India’s total exports decreased from 13.79 per cent in 2013-14 to 11.81 per cent in 2019-20.

During 2019-20, India’s overall exports declined but the fall in agricultural exports was much steeper compared with overall exports. The total merchandise exports decreased by 3.9 per cent vis a vis agricultural exports that declined by 7.6 per cent. The ranking of products in India’s export basket also underwent inter-se changes in 2019-20. For example, marine products (18.18 per cent) have replaced rice (17.33 per cent) as the leading agricultural export product, followed by spices (9.8 per cent), meat and processed meat (8.9 per cent) and sugar (5.5 per cent). The top 10 products accounted for more than 73 per cent of total agricultural exports in 2019-20. In the case of imports, the main commodities that India imports include vegetable oils (40.4 per cent), wood & wood products (9.6 per cent), fresh fruits (8.3 per cent), pulses (6 per cent) and spices (6 per cent). The top five products accounted for more than 70 per cent of total agricultural imports in 2019-20. The details of agricultural trade by main commodity groups is presented in Chart 1 and Chart 2.
**Constraints**

The common issues faced by the exporters of agricultural commodities related to availability and movement of labour, inter-state transport bottlenecks, shortage of raw materials due to closure of mandis, phytosanitary certification, closure of courier services, thereby hampering movement of shipping documents, availability of freight services, access to ports/yards and clearance of goods for imports/exports during the Covid-19 pandemic.

**Strategies for enhancing agriculture exports:**

(1) Self-reliant agriculture is critical for the goal of an *Atma Nirbhar Bharat*. For this, agricultural export is extremely important, as besides earning precious foreign exchange for the country, it helps farmers/ producers/ exporters to take advantage of the wider international market and increase their incomes. Exports have also resulted in increased production in the agriculture sector by increasing area coverage and productivity.

(2) ‘One District, One Product’ scheme is to convert each district of the country into an export hub by identifying products with export potential in the district, addressing bottlenecks for exporting these products, supporting local exporters, manufacturers to scale up manufacturing and find potential buyers outside India to promote exports in the district.
(3) There is a need for preparation of a comprehensive action plan/strategy towards the promotion of agricultural trade. An analysis of product groups and then specific commodities needs to be done about the present status of production & exports, strengths and challenges.

**Conclusion:**

The export of agricultural commodities can be increased by focusing on the export promotion of fast-evolving niche markets of wellness food/health-conscious food/nutraceuticals; development of “Brand India” in campaign mode to help penetration into new foreign markets and of new products which automatically translates into higher value realisation; Gulf countries have been identified as focus destination to increase the market share which is a strong market for India, though presently India caters to only 10-12 per cent of their total imports. A product-market matrix has been made containing a list of products of strength, which could be expanded in new geographies and a list of known markets where new products can be introduced.

The existing agricultural clusters should be strengthened and more product clusters need to be developed to fulfil the gap of bulk quantity and quality of supplies. A time-bound action plan has also been prepared for import substitution with particular focus on edible oils, cashew, fruits and spices, thereby making India self-reliant.
Farmers in the Indian subcontinent are exposed to a wide range of risks – erratic rainfall, rising input costs, pests, crop diseases and shocks, both from domestic and international markets. Credit, be it from formal or informal sources, plays an indispensable role in the lives of agricultural households. Unfortunately, due to low productivity in agriculture and multiple inherent risks, farmers are often caught in a debt-trap situation, taking fresh loans to repay the older ones. Against this backdrop, farm loan waivers (FLW) have increasingly been seen somewhat as a panacea for rural distress.

The genesis of farm loan waivers:

The first notable and noteworthy FLW farm loan waiver – as we know it today – was announced in Haryana in September 1987 when the Chaudhary Devi Lalled Lok Dal announced it before the state elections. He promised to waive off loans of every farmer in the state up to ₹10,000, taken from co-operative credit institutions. Although this promise did win him the election, it came with strong disapproval of the Reserve Bank of India (RBI).

The then Governor R N Malhotra opposed the policy by saying that the chief minister could not give instructions to the nationalised banks who were only obliged to obey the guidelines issued by the RBI. The debt relief cost the exchequer about ₹227.51 crore, though the state government had originally budgeted for about ₹59.68 crore. It benefitted approximately 11.7 lakh farmers. Even though there was no evidence correlating the announcement of FLW with Lok Dal’s success in state elections, anecdotal corroborations led most other parties at the state and central government levels to declare intentions towards FLW. This article explores whether the FLWs extended over the years have benefitted the small farmers and does it justify the heavy cost incurred by the exchequer.

Moral hazard and long-run costs:

Debt reliefs become extremely important where the risk of default is high due to ‘catastrophic systemic risks’ faced by a large number of borrowers (Narayan and Mehrotra, 2019). Mukherjee, (2017) also shows that debt waivers generate
substantial benefits for distressed borrowers and can smoothen their consumption expenditures too. However, quite often, the cost of implementing a loan waiver exceeds the benefit disbursed by it. There is ample literature suggesting that a farmer who is eligible for loan waivers faces the inducement of strategic default. This moral hazard emerges because the farmer expects that the loan will be waived in the future, and therefore, may prefer to default rather than work towards repayment. Kanz, (2016) in his study on the impact of debt relief on the economic decisions of households affirmed that debt relief programmes do not increase productivity and investment. Instead, it impacts borrowers’ expectations. While this may not be bad for the farmer in the short run, it has multiple negative consequences in the medium to long term.

For one, the farmer may continue taking risky loans from the informal or formal sectors even when they know that these are harmful. For example, they could be biased towards present-day consumption or investment and, therefore, put off more productive investments in technology (e.g., farm equipment) in favour of paying off the interest on other loans. This makes them less cautious because the punishment for such a thing is low. They may also be falsely optimistic about their chances of paying off a loan without having to take another loan due to the expectation of a waiver in the future.

Two, loan waivers result in fiscal policy shocks that impact market borrowings and crowd out corporate borrowings. Figure 1 depicts the fiscal impact of the

![Figure 1: Fiscal Impact of States' Farm Loan Waiver Programmes (2014-15 to 2020-21)](image-url)
State’s FLW Programme since 2014-15. A rise in fiscal deficit increases inflation, which in turn, raises input prices and reduces farmers’ incomes.

Third, as found by the RBI Report on State Finances (2018), the probability of obtaining credit after loan waiver is lower for beneficiaries. Hence, it impacts credit discipline and vitiates credit culture. This phenomenon has been also linked to election-bound states as they witness a significant increase in bad loan portfolios due to write-offs. Banks, fearing the adverse impact of their profitability due to such reliefs, prefer to provision for them in advance, as prescribed under the Provision Coverage Ratio (PCR) guidelines. The delay in doing so would lower their capital base due to the write-offs. The other challenges for banks include taking the tough call of imposing restrictions on credit disbursement or restricting branch expansion.

Further, there is the issue of dispersion of benefit. Shylendra, (1995) found the entire FLW disbursements to be regressive, as the benefit increased with the landholding sizes, implying that bigger farmers received greater share of benefits.

The way forward:

Debt waiver is perceived to be a risk-coping mechanism for small and marginal farmers in the short term. In reality, it leads to adverse economic outcomes and the problem of moral hazard and adverse selection. The Kisan Credit Card (KCC) scheme must be revamped. A combination of revolving credit and term loan in the 40:60 ratio with the flexibility of repayment could be introduced instead of the current KCC scheme. Further, we must build competitive and inclusive value chains for food products. Evidence-based research has shown that it is prudent to raise investments in agricultural and allied activities and also in the research and development that farming becomes a viable enterprise. And our farmer truly becomes Atmanirbhar.
Trend of Institutional Credit Flow in North Eastern Region (NER): Issues and Way Forward
Talung Taloh*

The journey of institutional credit in agriculture started with the enactment of the Co-operative Societies Act in 1904. The establishment of the Reserve Bank of India (RBI) in 1935 reinforced the process of institutional development for agricultural credit, then followed nationalisation of banks and establishment of Regional Rural Banks (1969-1975) and setting up of National Bank for Agriculture & Rural Development (1982), which carried forward the institutionalisation of agriculture credit, in India. Commercial Banks, Regional Rural Banks and Co-operative Banks are the three major financial institutions providing credit for agriculture.

The structure of credit outlets and trend of credit flow have witnessed a significant change and commercial banks have emerged as the major source of institutional credit in recent years. In 1951-52, non-institutional accounted for 93 per cent of the total credit requirements and institutional sources including the government accounted for only 7 per cent. The all-India debt and investment survey (1981) estimated that the share of non-institutional sources had slumped to about 37 per cent in 1981. The share of institutional sources rose to 66.3 per cent in 1991 that slightly fell to 64.3 per cent in 2003-04 and further reduced to 56 per cent in 2013. As per the latest data available in NABARD All India Financial Inclusion Survey (NAFIS) 2016-17 report, 59 per cent of rural households had availed loan from Institutional sources, 32 per cent from non-institutional sources and 9 per cent households had availed loan from both institutional as well as non-institutional sources.

The North-East region (NER) has been absorbing the lowest institutional credit flow in the country. The farmers in this region are mostly following the traditional agricultural practices, which are characterised by “low-input, low-output” situation. The demand for an agricultural loan is expected to be induced by the availability and adaptability of suitable modern agricultural technologies. But the advancement of modern technologies in this region is very slow and is severely constrained by topographical features.

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The trend of Institutional Agricultural Credit Flow in the NER:

Institutional credit flow from 2013-14 to 2019-20 has been taken for analysis (Source: IBA, SLBC, NABARD & NABARD Ensure Portal). The accessibility to institutional credit is the highest in the Southern Region where the level of agricultural development is also higher and the least in NER. The less developed states are kind of trapped in a vicious cycle. Low-credit flow or availability obstructs the modernisation of technology and adversely impacts the private capital investment, which in turn, lowers the productive capacity of the agricultural sector and results in lower productivity and production, and also pushes the farmers to borrow from non-institutional sources. Consequently, the absorptive capacity for agricultural credit is dampened.

Among NE states, Mizoram has the highest growth in term loan (43.05 per cent) corresponding with the highest fall in crop loan (-16.65 per cent) during 2013-14 to 2019-20. In fact, only Sikkim, Nagaland and Meghalaya, though less than the national average, have seen growth in crop loan while all, except Meghalaya, have seen much higher term loan growth than the country’s average of 8.20 per cent. For Mizoram, its Urban Cooperative Bank has witnessed a decline in its credit-deposit ratio in recent years and the bank is unable to lend to its affiliated Primary Agricultural Credit Society (PACS) since most of the PACS are unviable, which has adversely impacted short-term credit flow. In Meghalaya, the achievement under total agricultural advances was just 5 per cent of the target in 2019-20. This indicates that banks are not able to lend due to risk factors and other factors that are reducing absorptive capacity. In terms of percentage share to total credit flow in NER, credit distribution is highly skewed in favour of Assam (65.31 per cent) and Tripura (24.14 per cent) demonstrating 89.45 per cent of credit flow to these two states only in 2019-20. In the previous year (2013-14), 81.82 per cent of total credit in NER went to these two states with Assam taking the lion’s share at 68.85 per cent. Tripura has seen a large expansion in its credit share among NER states during this period.

Agriculture credit/NSA Ha.: The agricultural credit per hectare (Ha) of net sown area (NSA) has shown an increasing trend with a tremendous rise in recent years. It has increased from ₹0.69 lakh in 2013-14 to ₹1 lakh in 2019-20, that is, an 11.94 per cent compound annual growth rate at all-India level (Source: RBI, 2020 and NABARD Annual Report data). In 2013-14, the credit flow per ha in NE states ranged from ₹0.48 lakh (Tripura) to ₹0.06 lakh (Arunachal Pradesh) which were around 69% and 9% of the national average respectively. Among the NER states in 2019-20, Tripura (₹1.12 lakh) has about 12% average credit flow.
per ha, higher than the country’s average while the remaining states have lower credit per ha than the national average.

The performance of banks against the norms set by the RBI to fulfil national goals in respect of priority sector, agriculture and weaker sections during the last four years has been encouraging in Tripura. Thus, the low share of the credit of NER is corresponded by low average credit flow per NSA ha in all states of the region except Tripura.

**Performance of Agricultural Credit:**

A way to evaluate the performance of agricultural credit is to look at the ratio of ‘agricultural credit to state agricultural value-added’. For this, we can look at agricultural credit as a proportion of Agriculture Net State Domestic Product (Agri-NSDP). In 2013-14, the Southern states stood out with a substantially higher share of agricultural credit, followed by the Northern and Western regions. The ratio for the Western and Southern regions increased tremendously from 2013-14 to 2019-20, but it continued to remain low and slow for the Eastern and NER. It is notable that the Southern States have a much more active co-operative movement, and hence their share of agricultural credit is likely to be higher. A look at the region-wise credit intensity in 2013-14 and 2019-20 tells us that agriculture credit distribution is highly skewed where some regions/states see substantial credit inflow which may indicate outflow of credit from the agriculture sector that is, used for other than the intended purpose. In the Internal Working Group to review agricultural credit, the RBI found that in some states, credit disbursal to the farm sector was higher than their agricultural gross domestic product (GDP). This indicates the possibility of diversion of credit for non-agricultural purposes. Credit-Agri. NSDP ratio in all NER has a significantly low-credit intensity, which indicates the lowest credit absorption capacity in the region. This demonstrates that the credit potential of the agriculture sector has not been utilised effectively.

**Credit-deposit ratio:** It is well known that NER has been deficient in the use of banking capital. One way to reveal the extent of deployment of credit out of deposits is the credit-deposit ratio (CD) i.e., the ratio of credit extended by the banks to the deposits generated in any region. A low CD ratio indicates the lack of off take of credit, either because of lack of demand (due to low level of commercial activity) or low creditworthiness of borrowers. The RBI data clearly depicts that the Southern region has the highest CD ratio of 80.2 per cent and 99.7 per cent ratio in 2014 and 2019 respectively for RRBs. This shows high
credit absorptive capacity in the region. NER reported the lowest CD ratio of 37.3 per cent and 39.80 per cent in both the years. The examination of the CD ratios bank-wise, revealed that the performance of Co-operative Banks was better as compared to Commercial Banks and Regional Rural Banks. Overall, the CD ratios of co-operatives have been highest in all NE states except for Sikkim in 2019 and Tripura in 2018. Noticeably, Co-operative banks which had the highest CD ratio, corresponded with the lowest recovery rate in most of NER states.

**Performance of Kisan Credit Cards:** As per the latest report of Internal Working Group (IWG), the RBI stated the conventional credit product of the KCC seems to have outlived its utility. It has no doubt served the purpose of improving credit penetration but the time has come to overhaul/redesign it completely. We can have observed that ratio of KCC average outstanding debt to operative debt of NER (₹6.94 crore) is much lower than the national average (₹19.27 crore) for Co-operative Banks, while the average ratio of outstanding disbursement to operative for total (all) agencies was ₹5.2 crore for NER against the national average of ₹10.7 crore. The figure clearly demonstrates the dismal performance of KCC in NE states and explains the low and falling crop loan scenario in the region.

**Conclusion:**

The hill agriculture in NER of India is severely constrained by high risk and uncertainty arising out of various factors. Under the prevailing conditions, the expectation of steady and assured income from agriculture has been found quite limited. Therefore, it failed to attract considerable private investment. The data clearly demonstrates that the region is receiving as well as absorbing the lowest credit in the country. This also indicates low-capital formation in agriculture in the region, along with low credit flow, low investment-capacity as well as the low risk-bearing ability of farmers. Land reforms, developing better banking culture by improving recovery rate, streamlining credit delivery system by devising bankable, viable schemes and promotion of agriculture diversification, duly supported by good governance are some of the major ways to increase the credit-absorptive capacity in the region.
The evolution of the digital payment ecosystem has been a remarkable story indeed. Back in 2015, if one would have said that in 5-year time our retail payment systems would evolve so rapidly that digital payments would be readily accepted in every kirana store, vegetable shop and street vendor, most of us would have dismissed the thought as an impossible dream. This dream has indeed turned into a reality at least in all major Indian cities and this phenomenon is exponentially expanding in the semi-urban and rural areas. India, during the past 5 years has indeed hopped onto the digital payments crusade.

The rise of digital payments:

Digital payments are classified as payment methods such as card-based payments, Immediate Payment Service (IMPS), digital wallets, Unified Payment Interface (UPI), National Automated Clearing House (NACH) and Aadhaar-enabled payment system (AePS). Out of these, UPI is the one which has shown a lot of promise and growth in the retail payment segment. UPI is a digital platform system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, fund transfers and merchant payments under one head. UPI can be integrated by banks or financial service providers into their mobile applications.

Recently, UPI has just completed its fourth fiscal year. While the first fiscal year (FY17) was the testing period, UPI payments came into limelight and picked up pace in the post-demonetisation (November 2016) era. UPI payments displayed substantial growth on the back of the government-promoted BHIM and third-party apps like PhonePe and Paytm. By FY18, UPI cornered sizeable pie of overall Person-2-Person, recharge and bill payments market. In the latter half of FY18, Google Pay became the first overseas player to join the UPI ecosystem, which fostered a positive competitive environment in the UPI payment interface and propelled its rapid rise as a retail payment system. The trends in the rapid rise of UPI transactions (both value and volume) over the past four years has been depicted in Fig 1.
The rise in popularity of UPI lies in the fact that it's an interoperable platform built on mobile-first principles. This provides the user with the ability to send/receive/pay money instantly across the network, thus, offering an easy and convenient payment experience to the users. The usage and popularity of UPI as a retail payment tool has significantly picked up pace due to the Covid-19 pandemic and the subsequent lockdown.

While, demonetisation helped the nation leapfrog three years ahead in digitisation by amplified digital payment transactions especially in new-fangled modes of digital payments like NACH, IMPS, AePS, BBPS. The current pandemic is expected to be beneficial for the mobile payment systems with the UPI expected to be the major gainer. There has been a visible surge in the value of UPI transactions in the May-October period. The surge in transactions on UPI since May can be attributed to a shift from conventional modes of paper-based or branch-based peer-to-peer (P2P) transfers to the more convenient smartphone-based UPI transactions. Experts also suggested that the record volumes on UPI could also be an indication of reviving consumer sentiment leading up to the festive season month of September to December in India.
New players make the game bigger:

The digital payment architecture in the country is constantly evolving and thereby opening new avenues and opportunities. The recent entry of the social media giant – WhatsApp – in the retail payment segment is further expected to enhance both consumer base and competitiveness in the segment. The regulatory framework for digital payment is also evolving with the maturing digital payments architecture. Experts in the sector also opine that the recent policy announcement by RBI allowing interoperable QR codes for UPI payments will further boost UPI usage in the retail payment segment. Further, it is imperative to work towards enabling offline UPI payments through the QR-code, which would lead to further penetration. This, in turn, will help the rural market as it can be tapped further as smartphones are now readily available to a large part of the Indian population.
Human life depends on resources derived from land and ocean for sustenance and livelihood. Land is a source and a sink of greenhouse gases (GHGs) and has an equally essential role in combating climate change. Life on Land (SDG-15) seeks to bring to attention the value of ecosystem services of land, in particular, forests, wetlands, mountains, drylands, protection of endangered species and attempts to enhance global support in its preservation and sustainable use. Currently, an estimated 23 per cent of total anthropogenic GHG emissions (2007-2016) is from Agriculture, Forestry and Other Land Use (AFOLU).

Despite being one of the 17 mega-biodiverse countries in the world, India is witnessing an unprecedented degradation of land and desertification to the extent of 29.32 per cent of land. India has lost 31 per cent of grassland between 2005 and 2015. The economic losses from land degradation and change of land use in 2014-15 are estimated at 2.54 per cent of India’s GDP (TERI). India has become part of the “Bonn Challenge”, and pledged to bring into restoration 13 million hectares of degraded and deforested land by 2020, and an additional 8 million hectares by 2030.

In this context, NABARD’s integrated watershed management approach has supported interventions like soil and water conservation, afforestation, agroforestry, micro-irrigation (drip/sprinkler irrigation), livelihood generation, and improved land use pattern, etc. This approach has been instrumental in reversing the land degradation by covering 23.05 lakh ha area and helped create a sustainable livelihood for the poorer farm communities across the country.

India is the first nation in the world to adopt an agroforestry policy, which is dealing with the practice of integrating trees, crops and livestock, on the same plot of land. This approach will be instrumental in augmenting efforts of achieving the target of increasing forest/tree cover to promote ecological stability, especially in the vulnerable regions. NABARD’s wadi approach under its Tribal Development Fund has been a pioneer in providing sustainable livelihood to the tribal families along with promoting environmental sustainability. This fund has benefitted 5.53 lakh, tribal families, spreading across 4.54 lakh acre of land till March 2020.

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NABARD is a National Implementing Agency for Adaptation Fund and has financed projects to further ecological and livelihood security. One such project to promote ecological security in Kanha-Pench Corridor by an advocacy of organic agricultural practices has led to augmenting the capacity, access to inputs and mechanisms to implement sustainable and adaptive livelihood techniques of 78 per cent of the households in the project area. Such projects have demonstrated the efficacy of sustainable agriculture practices in augmenting incomes and reducing the adverse impact on climate.

Disruptions in economic activities due to Covid-19 and the subsequent lockdown has impacted the progress in achieving SDG-15. While the disruptions have positively impacted the biodiversity in the short run, the impact in long run will largely depend on the pattern of consumption and production that emerges after the pandemic is over. It presents with an opportunity to leverage on the short-term gains and take on the path of sustainable economic processes. It is imperative to take benefit of the immediate relief and resist pressure to reduce ecosystem regulations and derail the progress made till date.

NABARD, being the National Implementing Entity and Direct Access Entity for three funding mechanisms, has the added responsibility to provide direction to the adaptation and mitigation measures for climate change and land degradation. NABARD will continue to rise to the occasion and provide requisite financial and technical support in the long journey for environmental sustainability and ecological security.
The year 2020 witnessed a continued thrust on agricultural reforms, with the Government of India (GoI) introducing major reforms related to agricultural marketing. The role of various institutions such as Farmer Producer Organisations (FPOs) is critical for the success of these reforms. Notably, these reforms also contain features, which are expected to facilitate the functioning of FPOs, such as provisions permitting FPOs to trade in scheduled farmers’ produce and to establish & operate electronic trading platforms. The GoI has also set a target to form 10,000 FPOs between 2019-20 and 2023-24. Against this backdrop, it may be interesting to highlight the evidence from the field regarding the impact of FPOs on the lives of their members.

**FPOs in brief**

A Producer Organisation (PO) is a legal entity formed by primary producers, such as farmers, milk producers, fishermen, weavers, rural artisans, craftsmen. A PO can be a producer company, a cooperative society or have any other legal form which provides for sharing of profits/benefits among its members. FPO is one type of PO where the members are farmers. FPOs are envisioned to allow farmers to reap the benefits of economies of scale through collectivisation (in both inputs and produce) and tackle the adverse consequences stemming from small landholdings.

**Status of FPOs**

As of January 2021, there were around 8,590 FPOs existing in the country, which were promoted by GoI, NABARD, State Government Departments and Civil Society Organizations over the last 10 to 12 years. Out of these FPOs, NABARD alone has promoted the bulk with nearly 4868 FPOs (56.67 per cent), while the remaining have been promoted by other institutions. Out of the 4868 FPOs promoted by NABARD, 3,586 FPOs are registered (73 per cent) under different legal formats. Of these, 2,857 (nearly 79 per cent) are registered as Producers’ Companies and remaining as Co-operative Societies, Trusts, etc.

*Assistant Manager, DEAR*
While the time is opportune for the formation and nurturing of new FPOs, there must also be a concurrent evaluation of whether some course correction is required. With this objective in mind, NABARD conducted an internal study on FPOs.

**NABARD Study on FPOs**

NABARD conducted a multi-state study internally. This article is based on data reported from 1,386 farmers having a membership to 30 FPOs and 721 farmers without FPO-membership from the 3 states of Kerala, Madhya Pradesh (MP) and Odisha. The study also included interaction with FPO executives to gain greater insights into the functioning of FPOs. The objective of the study included obtaining an estimate of the economic and social impact of FPO-membership on farmers. While our study is not based on ideal strategies of impact evaluation such as Randomised Control Trials (RCTs) or Difference-in-Differences technique, we believe that our study reveals findings that may useful for drawing the future action plan related to FPOs.

**Economic impact**

The study corroborates many theories regarding the impact of FPO-membership on farmers. It is heartening to note that the farmers reported a receiving a higher average price for their produce after obtaining membership to FPOs. For instance, farmers in Madhya Pradesh reported an increase in average per quintal price of nearly 7.5 per cent in Kharif (2019) season and 12.5 per cent in the Rabi (2018) season. The farmers also reported a reduction in dependence on informal sources of credit. For instance, farmers’ sample in Kerala were heavily dependent on informal sources in the pre-FPO period, with farmers in 9 out of the 10 sample FPOs reporting loans from moneylenders. This changed drastically after obtaining membership to FPOs, with farmers from none of the FPOs reporting any loan from moneylenders.

In terms of other benefits, 78 per cent farmers with FPO membership in MP viewed that they were able to open savings bank accounts after joining FPO and 73 per cent of the members had accessed loan through Kisan Credit Card (KCC) after joining FPOs. Farmers also reported achieving higher yield, saving on input cost and reduced cost of cultivation.

**Social Impact**

Farmers with FPO membership have also reported improvement in their social conditions after being associated with FPO. For instance, nearly 72 per cent of
the sample FPO-members in MP reported having started their participation in village-level meetings and other similar local-government initiatives. Nearly 74.2 per cent of sample FPO farmers in Kerala reported increased awareness about issues like health, hygiene, education, etc.

Bottlenecks

The study also points towards a few bottlenecks in the expansion of FPOs. For example, they often reported facing difficulties in obtaining institutional credit, which was also visible in the exposure of FPOs to formal credit. For instance, out of the 10 FPOs surveyed in Odisha, only four FPOs had accessed any type of credit from formal institutions. Also, many FPOs lacked basic storage infrastructure. For instance, out of the 10 FPOs surveyed in Kerala, warehouse/cold storage facilities were available only to four FPOs.

Future implications

The positive impact of FPO membership reported on various parameters in the study is encouraging. The future strategy regarding FPOs needs to be based on the twin pillars of forming new FPOs and nurturing the existing ones. Since a large proportion (for instance, nearly 66 per cent in Odisha) of sample farmers without FPO membership cited ‘non-availability of FPOs in their village’ as the reason for not joining FPO, the target set by GoI of forming 10,000 FPOs as by 2024 is expected to be well-received at the ground level. The formation of new FPOs needs to be supplemented with the removal of the existing bottlenecks in the transition of FPOs from the nascent stage to a mature one. Concerted efforts are needed to make provisions for institutional credit at a reasonable interest rate to FPOs, assisting in the diversification of activities from the present over-reliance on input aggregation to other aspects such as value addition, etc.

In the future, NABARD will remain committed to providing an appropriate ecosystem for the formation and nurturing of FPOs. We look forward to partnering with suitable institutions to provide the necessary handholding support to FPOs in their nascent stages. It is only through our concerted efforts that we can create a prosperous and inclusive rural India.
Skill development has been a major policy agenda of the Indian government in the past few years. Creating alternate employment opportunities for the majority of the vulnerable section of the society requires capacity building for existing jobs and also for jobs that are to be created. Skill development and upgradation thus seem to be the sine qua non to enable the disadvantaged rural population to participate in the growth process and to contribute to nation-building.

Towards this end, NABARD has been implementing various promotional and developmental programmes to facilitate the unreached to acquire new skills for augmenting their income from various livelihood activities. Particularly, the savings-led microfinance model of self-help group (SHG) championed by NABARD has made great strides in creating, and more importantly, engendering employment opportunities in rural areas. This has been achieved by enabling the SHG members to take up income-generating micro-enterprises.

Since 2006, NABARD has been supporting need-based skill-development programmes like Micro Enterprise Development Programme (MEDP) for matured SHGs with access to finance from banks.

MEDPs are on-location skill-development training programmes, which attempt to bridge skill deficits and facilitates optimisation of production activities, pursued by the SHG members.

On availing credit on two or three occasions, it seems imperative for SHG members that they acquire ‘skill-based training’ for setting up of micro-enterprises to augment their income.

In addition to micro-finance, the rural micro-enterprises require access to markets, information on raw materials & technology, skill upgradation, design inputs and a range of business development inputs to earn their livelihoods in rural areas. NABARD’s skill-building training programme named as Micro Enterprise Development Programme entails all these aspects for the SHG members to engage in income-generating livelihood activities.

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Financial assistance is provided to eligible training institutions and SHG-promoting institutions to provide skill development training leading to the establishment of micro-enterprises on individual or group basis. Over the years, more than five lakh SHG have been covered under training and 18,000 (approx.) MEDPs conducted in rural areas across the country.

In a study conducted by NABARD during 2019-20 in five districts of Maharashtra (viz. Nagpur, Nanded, Satara, Pune and Washim), it was observed that around 55 per cent of the SHG members could start their own business after undergoing training under MEDP. They were also in a position to supplement their family income either through job/self-employment or by utilising the learnings for home consumption (cake/biscuit making, stitching, etc), thereby reducing family expenditure on such products and saving cost.

The study undertaken in 20 blocks of the five districts with extensive interaction with the trainees, collated information, inter alia, on:

(i) Whether SHG members started employment activity after undergoing the training programme;

(ii) Whether SHG members received bank finance for establishing enterprise/issues related to bank finance; and

(iii) Overall impact of the MEDP on the matured groups such as change, if any, in the income level of SHG members pre-and post-MEDP.

It concluded that the training programmes conducted mainly comprised activities that had local demand and market such as bakery and dairy products, food processing, masala making, bag making, fashion designing, tailoring, and beauty parlour units, etc.

The study also highlighted that MEDP of NABARD has gained wide recognition in the rural community, especially among women, having brought about a conspicuous change in their livelihood pattern as they engaged themselves in remunerative activities with minimum investment. Investment to start an activity mostly ranged from ₹10,000 for masala/chilli and turmeric making to ₹40,000 for Mango pickle making.

It was observed that MEDPs are more popular than other Skill Development Programmes running in the villages. Major reasons:

• MEDP was conducted in villages or places easily accessible to the trainees;
• Availability of raw material around the villages, since generally, the activities taken are based on local demand and the activities proved easily manageable for the SHG women due to low investment and assured employment;
• Low-cost activities like goatery, dairy, pickle making, tailoring, masala/chilli/turmeric powder making, food processing etc. are the local-based popular activities in MEDPs;
• Post completion of training, the participants availed a small-ticket credit from their respective SHG for capital and operating expenditure. Proactive NGOs have facilitated bank-finance by mobilising the SHGs into joint liability groups (JLGs), in several cases.

It was heartening to note that around 50-60 per cent of the women had actually taken up the activity after the conduct of the training. However, it was felt, there is room for improving the settlement rate with better follow-up and further hand-holding of the trainees. With a view to create sustainable livelihoods among SHG members and to obtain optimum benefit from skill upgradation, NABARD has further initiated Livelihood and Enterprise Development Programme (LEDP) as a holistic intervention mechanism to take care of the entire ecosystem required for livelihood promotion. This also encompasses the complete value chain and offers end-to-end solutions to the SHG members.

Truly, NABARD’s Enterprise Development Programme (MEDP) is a big stride towards creating an Atmanirbhar rural India.
The term ‘Vocal for Local’ coined while presenting the *Atmanirbhar Bharat* Package has become a tagline for each and every Indian household. In an attempt to reduce after effects of pandemic Covid -19 on the economy and to give a fillip to indigenous products and help poor people, for the first time on 12 May 2020, the government announced ₹20 lakh crore package under *Atmanirbhar Bharat*. In this context, the term ‘Vocal for Local’ not only means buying local products but also being vocal about promoting them proudly. Further, on 27 December 2020, the Hon’ble Prime Minister Shri Narendra Modi in his ‘Mann Ki Baat’, urged the nation to go for ‘Vocal for Local’ to achieve the goal of *Atmanirbhar Bharat*. He said: “The mindset of free India should be ‘Vocal for Local’. We should appreciate our local products.” He further said that Covid-19 crisis had taught India the importance of being local. All our demands during the crisis were met locally. Now, it is time to be ‘Vocal about Local’ about Indian products and help them become global.

**Why Vocal for Local?**

India’s over-dependence on China and other nations for finished goods and other components has resulted in a huge trade deficit. As per the Ministry of Commerce, it was US$(-) 160,770.90 million in 2019-20. And therefore, especially after pandemic Covid-19, India refused to join Regional Comprehensive Economic Partnership (RCEP) to avoid Indian markets get flooded with imported goods and putting its domestic industry and agriculture at risk. Unless we recognise the importance of local manufacturing, local markets and local supply chain, it will be very difficult to change India’s status from ‘net-importer’ to ‘net-exporter’. It’s a leap towards making India self-reliant.

The pandemic has slowed down economic growth and the gross domestic product (GDP) went down by -23.9 per cent in Q1 of 2020-21. Both the industry and services sectors were hit very badly. Many people lost their jobs and there was less demand for consumable commodities in the market. The situation was further aggravated when the jobless poor migrant workers started shifting back to their states. In such a situation, the boost to domestic industries will definitely create a win-win situation for both manufacturers and labourers. It will address the problem of unemployment and migrant workers as well.

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1 Manager, DEAR
What is meant by Vocal for Local?

- Substituting foreign-made products by indigenous products to reduce dependence on imports by raising our capacity, creativity and skills
- To meet global standards and make the products that have “zero effect and zero defect”
- To manufacture the global best in India
- To convert ‘Make in India’ into ‘Make for World’
- Encourage entrepreneurs and start-ups with ease of doing business
- Special packages for MSMEs
- Skill development through Pradhan Mantri Kaushal Vikas Yojana (PMKVY).
- Geographical Identification (GI) tag for agricultural products.

The role of NABARD:

NABARD, since its inception and as its mission, has always encouraged village and small-scale industries, rural artisans and their products. The various interventions and programmes of NABARD leave an indelible impression on the lives and livelihood of the rural people. It has an important role to play in promoting local brands, especially of rural India.

NABARD has so far extended support for training of 9.04 lakh rural youths by engaging them in both wage and self-employment. Our skill development programmes like Livelihood and Enterprise Development Programmes (LEDP) and Micro Enterprise Development Programmes (MEDP) for Self-Help Group (SHG) members have supported 5.89 lakh members for intensive training for skill-building and to set up their own enterprises. NABARD has launched a dedicated portal called NABSKILL in 2019 for online processing of applications.

NABARD, through its Agri-Business Incubation Centres, has created the right ecosystem and conducive atmosphere for encouraging new generation entrepreneurs and start-ups in the agriculture sector with innovative and affordable solutions. These start-ups face challenges with funding in the initial stage and they may enter a stage called “Death Valley”. To support them at this crucial stage, NABARD has set up Catalytic Capital Fund with the corpus of ₹100 crore.

The most visible and appreciated efforts of NABARD in promoting and marketing products of SHGs/rural artisans/FPOs/OFPOs, etc. are setting up of rural haats/
rural marts. NABARD also organises and participates in various exhibitions/melas in various states to promote products of SHGs. The popular ones are Mahalaxmi SARAS, Deccan Haat, Surajkund International Mela, etc.

NABARD provides end to end support for Geographical Indications (GI) registration of products. As of now, NABARD has supported registration of 51 products. The GI registration of Mattu Gulla Brinjal has increased demand for it and its turnover. NABARD has supported a marketing outlet for GI products at Deendayal Hastakala Sankul, Varanasi. NABARD’s long-term refinance assistance for MSMEs also plays a vital role in meeting the credit requirements of these enterprises and making them financially viable.

**Way Forward**

*Atmanirbhar Bharat* package has kick-started a process of making India self-reliant. India has a huge local market and also the potential to take its products global. Indians should make local the mantra of life. It’s a responsibility of every citizen to buy local products and promote them. The GI registration of Indian products will create demand for them globally. Indian industrial and agriculture sector has a bright future if we follow the mantra of ‘Vocal for Local’.
Handloom sector holds the key to improving incomes in rural India
Benjamin Thomas Ipe*

India’s tryst with the Handloom sector dates a long way back with the earliest pieces of evidence being traced to the Indus Valley Civilisation. The sector also played a very important role in India’s freedom struggle. In fact, since 2015, the Government of India has been celebrating August 7 as National Handloom Day to create awareness about the industry. The date holds special significance as the Swadeshi movement was launched in 1905 on the same day to protest against the British government. The importance of the sector can be gauged from the fact that it is the second-largest employment provider in the country after agriculture. For an agrarian society such as India, the relevance of the handloom sector is massive because it uses agricultural products as raw materials and thus, provides a sure market for agriculture produce.

Current scenario of handloom sector:

As per the Fourth All India Handloom Census, the total number of households engaged in handloom activities is 31.45 lakh of which 87.39 per cent of households are in rural areas.

The total number of handloom workers in the country is 35.22 lakh and this number has steadily come down from 65 lakh in 1995-96. Of the total number of handloom workers, 75.9 per cent are weavers while the remaining are involved in allied pre-loom and post-loom activities of the sector. Four states of India account for 18 lakh of all weaver households in the country. These states are Assam, West Bengal, Manipur and Tamil Nadu. Of the total number of handloom workers, an overwhelming 72 per cent are female. The corresponding figure in the rural areas is 74.5 per cent, which reflects the importance of the sector for improving the participating rate of women, in the workforce.

Among weavers enumerated in the country, the average number of person-days of engagement in weaving activity is 208 days. With regard to handloom workers by employment typology, 73.2 per cent are independent while 19.4 per cent are under master weavers.

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The remaining are organised under cooperative societies, Khadi and Village Industries Commission and State Handloom Development Corporations. However, handloom is a full-time engagement only for 50.8 per cent of the handloom workers with the remaining engaging in it as a part-time activity. This is corroborated by the incomes earned by households engaged in handloom activity. About 93.3 per cent of households earned less than ₹10,000 in a month while only a meagre one per cent of households earned more than ₹15,000 per month.

With regard to financial inclusion of handloom workers, 22.45 per cent have bank accounts and 61.64 per cent possess Aadhaar cards. About three per cent of handloom households reported being in debt. Of those in debt, 38.26 per cent had taken loan for handloom purpose, 58.13 per cent took loan for other purposes with the remaining households having taken loan for both purposes. As to the source of debt, 81.85 per cent is from formal sources at the all-India level and almost the same (80.29 per cent) in rural areas as well. A key determinant of income of handloom workers in the market for their produce. A majority (64 per cent) of the handloom households reported selling to the local market followed by selling to the master weaver (17.58 per cent). Exports and e-commerce had minuscule shares of 0.37 per cent and 0.17 per cent, respectively.

**Challenges and prospects:**

A position paper on the Indian Handloom Industry by the FICCI Ladies Organization (FLO) identified the following challenges that were stifling the growth of the sector and impacting its sustainability. These included: Shortage of inputs, the problem of working capital, lack of credit, marketing issues such as lack of awareness on customer preferences, inability to distinguish between handloom and power loom products, lack of promotional campaigns, inconsistencies in the quality of product and inefficiencies in the supply chain, greater competition from power looms and mills, technological backwardness, paucity in new designs, reduction in the number of weavers, poor policy dissemination and database crunch. Covid-19 has impacted the sector adversely due to disruption of raw material and finished product delivery, loss of markets, loss of employment and lack of access to low-interest credit for short-and medium-term capital from banks.

States all across the country have unique handloom products to offer which have great export potential. The export of handloom items during 2018-19 was ₹2,392.39 crore and during the year 2019-20 (up to October 2019) is ₹1,405.41
crore. This export potential can be exploited further to enhance incomes and also earn valuable foreign exchange for the country. A majority (58.36 per cent) of the handloom households are located in the North East Region, with Assam leading the list. Handlooms can be a means of developing the states of the north-east. The sector is employment intensive and has good potential to create jobs which would go a long way to reduce our excessive dependence on the farm sector.

**Way forward:**

The non-farm sector development would be a vital cog in improving the standard of living of people living in rural areas. The handloom sector will play a crucial role in this regard, as it is a skill handed down over generations. The focus, however, must be on increasing incomes to keep people attracted to the sector as well as take it up as a full-time engagement. Collectivisation will have a very important role given the fact that an overwhelming majority of handloom workers are independent. NABARD has been promoting Off-Farm Producer Organisations (OFPOs) to meet this very end. NABARD also supports the setting up of rural haats and rural marts as well as the promotion of GI products which would help in marketing the products of the sector. The government of India also has a number of initiatives for the development of the handloom sector such as Weavers Mudra Scheme, National Handloom Development Programme, Comprehensive Handloom Cluster Development Scheme, Handloom Mark, but the focus should also be on improving the education levels of handloom workers and financial inclusion by increasing the penetration of bank accounts. Given the environment created by Covid-19, the focus must now be on the online marketing of the produce. Synergistic development of the farm and non-farm sectors would be essential for fostering rural prosperity going forward.
Oil Palm: Important for Atmanirbhar India
Deblina Patra

Oil palm (*Elaeis guineensis*), popularly known as African Oil Palm or Red Oil Palm, was originally found in the wild form in the forests of Guinea Coast and used as vegetable oil by the natives all over Africa. It is grown extensively in South-East Asian countries, (Malaysia, Indonesia and Papua New Guinea), African countries, (Nigeria, Ivory Coast, Ghana, Liberia, Sierra Leone, Cameroon, Republic of Congo and Zaire) and South American countries (Costa Rica, Panama, Columbia, British Guyana, Peru, Ecuador, Venezuela and Brazil). Malaysia, Indonesia and Nigeria are the leading producers of oil palm.

Oil palm is the crop of the present and future vegetable oil economy of the world as well as India. Palm oil is one of the nine major oils traded in the global edible oil and fat market. Palm oil has good consumer acceptance as a cooking medium. It is a good raw material for manufacturing oleo chemicals used in making soaps, candles, plasticisers, cosmetic products, pharmaceutical products, etc.

**Oil Palm Cultivation in India:**

Oil palm was introduced to India at the National Royal Botanical Gardens, Kolkata in 1886. The Maharashtra Association for Cultivation of Sciences (MACS), Pune later introduced African dura palms from 1947 to 1959. A large-scale planting of oil palm was launched from 1971 to 1984 in Kerala by Plantation Corporation of Kerala (subsequently taken over by Oil Palm India) and Andaman Forest and Plantation Development Corporation during 1976 to 1985. Oil palm has been established as a successful crop in a number of states in the country.

Among the vegetable oil-yielding crops, oil palm is the highest oil-yielding plant in the world and has a critical role to play in meeting the vegetable oil requirements. With good planting material, irrigation, and proper management, oil palm has the potential to produce 20-25 Million Tonnes (MT) Fresh Fruit Bunches (FFB) per hectare after attaining the age of five years. This, in turn, is capable of yielding 4-5 MT of palm oil and 0.4-0.5 MT Palm Kernel Oil (PKO), which is about 4.5 times the yield of other traditional oilseeds, on an average. This perennial crop has an economic life span of 30 years, comprising three distinct phases viz. juvenile period (1-3 years), stabilising period (4-8 years), and stabilised period (9-30 years).

*Manager, DEAR*
National Food Security Mission (Oilseeds and Oil Palm) – NFSM (OS&OP): Govt of India Initiatives

India is heavily dependent on imports to meet its edible oil requirements and is the largest importer of vegetable oils in the world, followed by China and the USA. Of all the imported edible oils, the share of palm oil is about 60 per cent. With effect from 2018-19, the National Mission on Oilseeds and Oil Palm (NMOOP) scheme has been merged with the National Food Security Mission (NFSM) and is being implemented as NFSM (OS&OP) whose main purpose is to augment the availability of vegetable oils and to reduce the import of edible oils by increasing the production and productivity. During 2019-20, NFSM-OP is being implemented in 10 states.

The major interventions of NFSM-OP have resulted in area expansion under oil palm from 8,585 ha in 1991-92 to 3.45 lakh ha by the end of March 2019. An area of 17,110 ha has been targeted under oil palm cultivation during 2019-20. Between 1992-92 and 2018-19, FFBs production and Crude Palm Oil (CPO) have increased from 21,233 MT and 1,134 MT to 16.25 lakh MT and 2.70 lakh MT.

SWOT Analysis of Oil Palm in Indian Context

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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</thead>
<tbody>
<tr>
<td>• Oil palm gives highest oil yield per unit area (4-5 tns oils /ha)</td>
<td>• Oil palm has a long gestation period and restricts income flow to farmers for at least 4-5 years</td>
</tr>
<tr>
<td>• Could reduce dependence on import of edible oil</td>
<td>• A second limitation is the weather. Palm requires humid weather throughout the year</td>
</tr>
<tr>
<td>• Provides regular and assured income to farmers</td>
<td>• Lack of large land tracts is a major constraint</td>
</tr>
<tr>
<td>• Less vulnerable to pests and diseases</td>
<td>• Lack of infrastructure. FFBs need to be crushed within 24 hours of harvest, hence processing facility is required in a close proximity to the cultivation</td>
</tr>
<tr>
<td>• Potential for several by-products</td>
<td>• Fluctuation in prices of CPO in the international market and price of FFBs</td>
</tr>
<tr>
<td>• Sufficient R &amp; D Support &amp; network of ICAR</td>
<td>• Lack of trained and experienced farmers</td>
</tr>
</tbody>
</table>
## Opportunities

- To reduce its import bill on edible oils, government of India is building capacity for local production
- Ban on import of refined palm oil from Malaysia, Nepal and Bangladesh have given an opportunity for better price realisation of local farmers

## Threats

- Oil palm is a long-term monoculture crop, replacing shifting cultivation landscapes in north-east region with oil palm will be detrimental to biodiversity
- Oil palm leads to deforestation affecting climate change, and is also likely to alter social structure and dynamics on tribal communities enhancing socio-economic inequalities

### The way forward:

Taking up palm oil cultivation is a step to support the Atmanirbhar Bharat initiative and will reduce its imports and make India self-sufficient in edible oils too. The domestic consumption of edible oils in India has been outstripping the production and the gap between the two is quite significant which is being met by imports.

Even though each vegetable oil has unique characteristics, the choice between various oils largely boils down to the relative price difference among oils. Palm oil is preferred over other edible oils for food purposes especially by price-sensitive consumers while palm kernel oil is preferred by manufacturing industries due to price differential, in relation to other oils.

Low prices of palm oil in relation to other edible oil prices have been driven mainly by productivity gains attained by major oil palm producing countries like Indonesia and Malaysia, and also because of preference function of high-income consumers of the US and Europe who prefer other oils (like olive oils, canola, or soy oil, etc.).

As rightly mentioned by Dr. Ashok Gulati, ‘There is the need to create Aatmanirbhart, not by putting high import duties, but by creating competitive advantage through augmenting productivity and recovery ratio of oil from oilseeds, and in case of palm oil, from fresh fruit bunches.’