SUSTAINABLE LIVELIHOOD

POLICIES AND INSTITUTIONS

(Released on the eve of 39th Foundation Day of NABARD)

BANKERS INSTITUTE OF RURAL DEVELOPMENT (BIRD)
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NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT
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नाबार्ड

दृष्टि

ग्रामीण समृद्धि के लिए राष्ट्रीय विकास बैंक

ध्येय

सहभागिता, संधारणीयता और समानता पर आधारित वित्तीय और गैर-वित्तीय सहयोगों, नवोन्मेषों, प्रौद्योगिकी और संस्थागत विकास के माध्यम से समृद्धि लाने के लिए कृषि और ग्रामीण विकास का संवर्धन.

Vision

Development Bank of the Nation for fostering Rural Prosperity

Mission

Promote sustainable and equitable agriculture and rural development through participative financial and non-financial interventions, innovations technology and institutional development for securing prosperity

Contents

अध्यक्ष महोदय का संदेश

Message From Chairman

नाबार्ड के 39 वें स्थापना दिवस के अवसर पर 12 जुलाई 2020 को बैंकर ग्रामीण विकास संस्थान (बर्ड), कोलकाता ने "संधारणीय आजीविका: संस्थान और नीति" पर एक पुस्तिका का प्रकाशन किया है.इसमें बागबानी परियोजनाओं के लिए ऋण प्रवाह बढ़ाने हेतु नए मॉडल, कोविड 19 कालखंड में कृषि आधारित जीविका, ग्रामीण सहकारिता, संधारणीय जीविका और कोविड 19 द्वारा प्रस्तुत चुनौतीपूर्ण दौर में कृषक उत्पादक संगठनों के स्तर से किए जाने वाले प्रयास जैसे विषयों पर संकाय सदस्यों द्वारा तैयार किए गया आलेख शामिल हैं.

मुझे आशा है कि यह पुस्तिका बैंकरों, नीति निर्माताओं, शोधकर्ताओं और विकास के लिए काम करने वालों को मूल्यवान अंतर्दृष्टि प्रदान करेगी ताकि अधिक समावेशी और न्यायसंगत विकास के लिए आधार स्तर पर आवश्यक सहयोग प्रदान किया जा सके.

जी आर चिन्तला

On the occasion of the 39th Foundation Day of NABARD, on 12 July 2020, Bankers Institute of Rural Development (BIRD), Kolkata has brought out the booklet on "Sustainable Livelihood: Institutions & Policy" covering articles prepared by Faculty Members on topics such as Emerging delivery models for horticulture financing, Agriculture and agricultural livelihoods in times of Covd-19, Rural Cooperatives, Sustainable livelihood in fisheries sector, Resilience initiatives of Farmer Producer Organizations during Covid 19, etc.

I hope that the booklet provides valuable insight to bankers, policy makers and development practitioners to make necessary interventions at the grassroots level for ushering in more inclusive and equitable growth.

G R CHINTALA

Introduction

The ***"Covid-19'*** ' pandemic stalled Indian economy with complete closure imposed on enterprises across all sectors. However, agriculture came out as the bright spot, notwithstanding the fact that impact of the 'Covid-19' pandemic was felt widely putting strains on farmers, particularly small and marginal land holders' livelihood. Structural changes in agriculture over the years, drivers facilitating such changes give new direction to reinvent ourselves with focus on agriculture and agricultural livelihood in times of Covid-19 pandemic for a smooth passage to inclusive growth with agriculture as 'green shoots for fast recovery of the economy. The pandemic made us learn that the future agrigrowth strategy needs to be a livelihood enhancement strategy that aims at greater inclusiveness and equitable transformation, whereby all farmers are able to reap economic benefits with greater thrust on technology, mitigating climate change and fruitfully impacting food and nutritional security. The first paper in this booklet attempts to reinvent agriculture and agricultural livelihood in times of *'Covid 19* pandemic.

Horticulture is expected to generate better momentum in the years to come due to increased investments in infrastructure such as irrigation, warehousing and cold storage, agro-processing, etc. The production of horticulture crops outpaced the production of foodgrains continuously since 2012-13. As a result, there is a compositional shift within agriculture emphasizing more capital and credit intensive. However, necessary support mechanism through development of varied financing models with emphasis on value chain system need to be the overriding priority. The avenues for financing horticulture sector now encompass emerging areas like, contract farming, value chain financing, financing through farmer collectives, organic farming, soil-less farming, etc. Financing horticulture would make future agriculture more inclusive, remunerative and sustainable. The second paper in this booklet dealt with such delivery models.

Rural co-operative credit system, as an institution, is the backbone of rural finance. In terms of structure, clientele and credit delivery, these credit institutions are unique. Despite their inherent weaknesses in terms of capital, governance and management, business acumen, etc., they are the most trusted banking partner for the rural people. As the credit cooperatives work closely with farmers, artisans, shopkeepers and others in rural areas, they may remain strong during the present Covid-19 pandemics. In this context, the third paper intends to assess the current status and growth of the rural co-operative banks and examine the scope for strengthening the co-operatives for effective rural livelihood during present Covid-19 pandemic crisis.

The nationwide lockdown came as a big shock to migrants, farmers, etc. The lockdown created both a shortage of labour and equipment affecting harvesting of crops, like, paddy, wheat, pulses and oilseeds. Govt. of India, while making all out efforts to provide job and self-employment opportunities to migrant workers, it also initiated efforts towards direct marketing and better returns through Cooperatives and FPOs. The resilience of the community based organizations, like FPOs allows rural ecosystem to act a launch pad for much needed "green shots" for recovery of the economy.

Fisheries as a sub-sector of primary sector, in terms of nutritional security, provides livelihood for 1.61 crore population, has been recognised as a powerful income and employment generator. Nabard's natural resource-based sustainable business model, livelihood security of fishers with cimate change, livelihood deepening through FPOs are some such initiatives for strengthening livelihoods among workforce propagating fisheries.

This book is a compilation of papers, written by FMs at BIRD, Kolkata, on aspects as detailed in the foregoing paragraphs. The BIRD Kolkata placed on record its appreciation to all FMs and others, who were intensely involved in printing and bringing out the booklet on this 39th Foundation Day of NABARD.

DR. K C BADATYA

Joint Director

REINVENTING AGRICULTURE AND AGRICULTURAL LIVELIHOOD IN TIMES OF *'COVID 19'*

K C Badatya*

Abstract: *Even though agriculture came out as the bright spot, the impact of the 'Covid-19' pandemic was felt widely putting strains on farmers, particularly small and marginal land holders' livelihood. Structural changes in agriculture over the years, drivers facilitating structural agrigrowth gives new direction to reinvent ourselves with focus on agriculture and agricultural livelihood in times of Covid-19 pandemic for a smooth passage to inclusive growth with agriculture as 'green shoots for fast recovery of the economy.*

Key Words: Covid-19, Livelihood, Gross Domestic Product, Capital Formation, Technology, Credit, Land Lease Markets, etc.

I
Introduction

The world has witnessed a huge economic shock due to the *'Covid-19'* pandemic. Starting with China, a majority of countries has adopted some version of a lockdown of all economic and social activity. In India, the lockdown started across the country on 24 March 2020 and is still ongoing with restrictions in one form or the other. The *"Covid-19' '* pandemic stalled Indian economy with complete closure imposed on enterprises across all sectors. Agriculture, a critical sector of the Indian economy, however, has done well, the only bright spot, is likely to grow at 2.5 per cent during 2020-21 (Crisil Research 2020). Though agriculture employs almost four times the informal workers that construction does, it is likely to be less impacted because of the lockdown, as agriculture being an essential activity and after lockdown 1.0, it was permitted to move on keeping in view the harvesting of *rabi* crops and keeping supply chains of horticultural crops, particularly fruits and vegetables remained functional seamlessly to feed the economy. Further, "the farm economy received support under the PM-Kisan Scheme" (Crisil Research 2020).

Though agriculture's contribution to the overall GDP of the country has fallen substantially, a trend that is expected in the development process of any economy, it continues to be critical for the development

* Dr. K C Badatya is the Joint Director, Bankers Institute of Rural Development (BIRD), National Bank for Agriculture and Rural Development (NABARD), Kolkata. The views expressed are author's own. However, the usual disclaimer applies.

process. Consequently, per capita income from non-agriculture becomes higher as compared to agriculture. Performance of agriculture sector has a strong bearing on the growth of other sectors as suppler of raw materials, provider of wage goods as well as the creator of effective demand for the final products of these sectors. An average Indian still spends almost half of his/her total expenditure on food, while roughly half of the total work force is still engaged in agriculture for its livelihood. More than 70 per cent of the rural households still depend on agriculture for their livelihood. (Eco Survey, 2020). Being a source of livelihood and food security for a vast majority of low income, poor and vulnerable sections of society, its performance assumes greater significance (Badatya, 2017).

Indian agriculture contributes to 8 per cent of global agricultural GDP to support 18 per cent of world population with only 9 per cent of world's arable land and 2.3 per cent of geographical area (ICAR, 2011). Within the economy, the growth of agriculture is considered a necessary condition for 'inclusive growth' and also acts as a resource base for a number of agro-based industries and agro-services.

With '*'Covid-19'* ' pandemic, even though agriculture came out as the bright spot, the impact of the pandemic was felt widely at the micro level putting strain on the harvesting of *Rabi* crops impacting smooth procurement operations, putting stress on local supply chains, marketing of fruits & vegetables, etc. Adequate labour availability and inability to access markets for produce due to issues in transportation as well operation of markets were reported. Agricultural producers are particularly hard hit with returns on produce varying from one-third the usual or a complete loss. In a number of districts, inter-state trade in commercial crops or proximity to urban areas providing market access and better prices received a nudge. Heartbreaking images of Indian farmers standing amidst swathes of rotting vegetables, fruits and grain have also been widely reported from different states during lockdown 1.0. This paper is an attempt to explore structural changes in agriculture, drivers facilitating structural agri-growth and reinventing agriculture and agricultural livelihood in the time of Covid-19 pandemic.

II
Exploring Structural Changes in Agriculture

The agriculture sector in India has undergone significant structural changes in the form of its contribution to GDP, varying growth pattern across states, changes in crop mix and their growth, declining size of holding, etc.

a. Declining share in GDP total:

The sector's share in GDP has decreased from 53.1 percent in 1950-51 to 30 per cent in 1990-91 and further to 16.1 per cent in 2017-18 indicating a shift from the traditional agrarian economy towards a service dominated one (Table 1). This is mainly because of the fact that other sectors are developing fast which is very likely for an economy in its growth process.

Table 1: Importance of Agriculture in Indian Economy: Role in National Income, Employment and Trade

(% share in economy)

Year	GDP at current price	Export	Employment
1950-51	58.2	---	69.4
1960-61	48.0	44.3	69.5
1970-71	47.9	31.7	67.8
1980-81	38.8	27.8	60.5
1990-91	33.2	18.5	59.0
2000-01	25.5	17.6	58.4
2010-11	13.9	12.0	48.9
2017-18	16.1*	12.5	42.5

GVA @ current prices

However, paradoxically, the decrease in share of agriculture to GDP has not been accompanied by a matching reduction in the share of agriculture in employment. About 43 per cent of the total workforce is still employed by the farm sector for sustenance (NSSO 66th Round). However, within the rural economy, it was noticeable that, the share of income from non-farm activities has increased as there is stronger interdependence between agriculture and industry-cotton, jute, textiles, other agro-processing enterprises significant in terms of their contribution to the economy in terms of production and international trade.

b. Regional variations in agri-growth :

The share and growth of the agriculture and allied sector at the state level presents a very different picture from that at the national level. While at the national level, the agriculture and allied sectors contributed about 16 per cent to the GDP, a number of states showed a much larger share of agriculture in GSDP. As shown in Table 2, about 13 states earn over 20 per cent of their GSDP from agriculture, and only seven states earn less than 15 per cent of their GSDP. The structural transformation, in terms of changes in the share agriculture to State GSDP emphasizes the role of agriculture in the livelihoods of population of the State.

Table 2: Share of Agriculture and Allied Activities in State GSDP at constant 2004-05 prices	
Share of agriculture in GSDP	States
30% and above	Arunachal Pradesh
20 – 29 %	AP, Assam, Bihar, Chhattisgarh, J & K, MP, Manipur, Nagaland, Punjab, Rajasthan, Tripura, UP
15-19%	Haryana, HP, Jharkhand, Karnataka, Meghalaya, Mizoram, Odisha, Telangana, WB
Less than 15%	Goa, Gujarat, Kerala, Maharashtra, Sikkim, Uttarakhand, TN
Source: https://niti.gov.in/planningcommission.gov.in	

c. Crop-specific growth :

Growth in the production of agricultural crops depends upon acreage and yield. Given the limitations in the expansion of acreage, the main source of long-term output growth is improvement in yields. A comparative picture in average annual growth rates of area, production, and yield of different crops for two periods from 1990 - 91 to 1999 - 2000 and from 2000 - 01 to 2010 - 11, indicate that in the case of wheat, the growth in area and yield have been marginal during 2000 -01 to 2010-11 suggesting that the yield levels have plateaued for this crop. This suggests the need for renewed efforts to boost production and productivity. However, horticulture has grown at 4.1 per cent during 2007-8 and 2016-17 as compared to growth of food grains at 1.9 per cent during the same period. The production of horticulture crops outpaced the production of food grain since 2012-13 implying compositional shift within agriculture. Therefore, diversification of crops with the strategic role of various crops on food and nutrition security needs to be the focus.

d. Proliferation of no. of land holdings:

The average size of operational holdings has diminished rapidly from 2.28 ha. in 1970-71 to 1.55 ha. in 1990-91 to 1.08 ha. in 2015-16. There have been visible shifts in the distribution of operational holdings among various size classes over the decades. Small and marginal farmers have increased their share, both in the number of operational holdings as well as in the operational area in comparison to the other categories. The proportion of marginal holdings (area less than 1 ha.) has increased from 61.6 per cent in 1995-96 to 68.1 per cent in 2015-16. The proliferation of number of holdings has serious consequences, in terms of their access to resources, credit, inputs, technology, extension and a number of other services which together determine the rate of growth of agriculture. The ever increasing number of farms pushes up the cost of delivery of the services, thereby increasing the cost production, impacting the farm incomes. This transformation of agriculture, with the proliferated land holdings of smaller sizes, is dealt with focused thrust on formation of 'Collectives', in the form of community organizations like FPOs/FPCs emphasizing economics of scale in input collection and output aggregation.

III
Drivers of Agri-growth

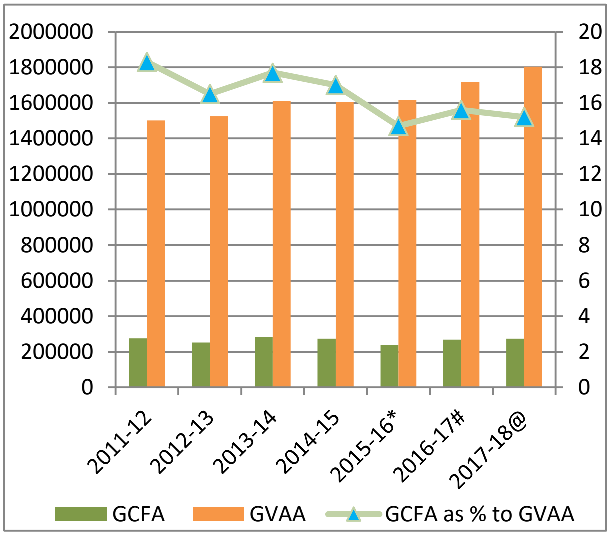
We need to look at drivers of growth in agriculture like, capital formation, efficient use of water, fertiliser, seed, etc. in order to maintain growth n agriculture along with both food security and nutrition security.

a. Capital Formation in Agriculture

The key indicator in drivers of agri-growth is Gross Capital Formation (GCF) in agriculture as a share to agri-GDP. This indicator followed a declining trend till 8th Plan (8.8%). From 9th Plan (1997-2002) onwards, a reversal in trend has been achieved partly due to the efforts of

Table3 / Fig 1 : GCFA as % to GVAA

Year	GCFA	GVAA	GCFA as % to GVAA
2011-12	274432	1501816	18.3
2012-13	251094	1524288	16.5
2013-14	284424	1609198	17.7
2014-15	272663	1605715	17
2015-16*	237648	1616146	14.7
2016-17#	267836	1717467	15.6
2017-18@	273755	1803039	15.2

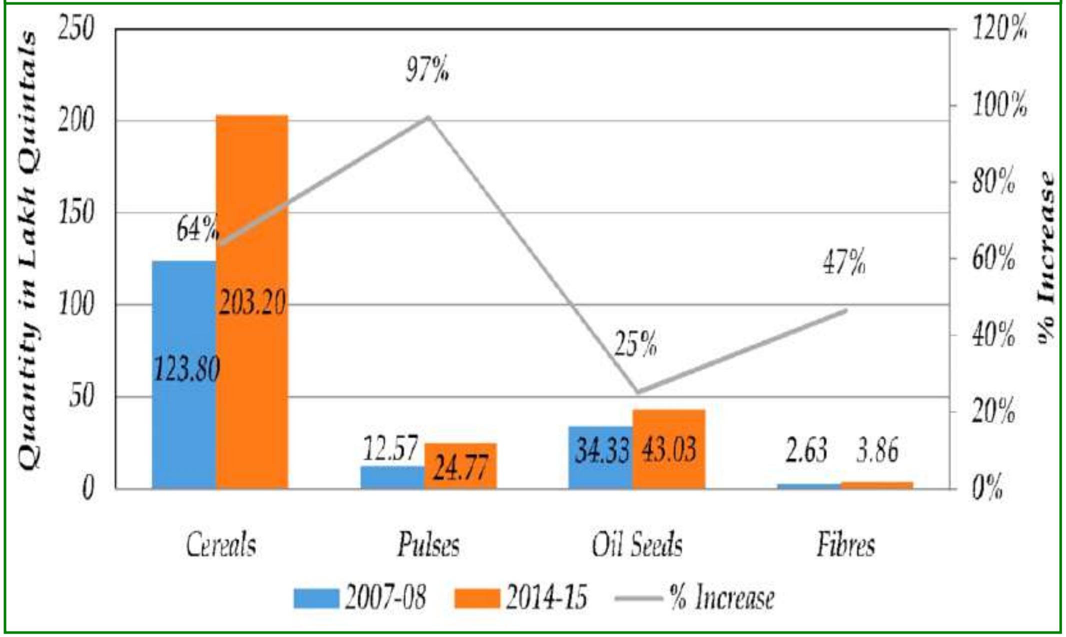


all Government schemes and programmes, resulting in an increase in GCF to 13.9 per cent of GDP (agri.) during the 10th plan (2002-07) to 15.8 per cent of agri-GDP during the 11th Plan. Thus, as a share of agri-GDP, the GCF (agri.) has nearly doubled during the previous decade. Increased GCF has its impact on the growth of GDP in agriculture (3.9% during 11th Plan. However, since 2011-12 the share is volatile and declining (Table3/Fig 1) which is a cause to worry about.

b. Optimum use of Fertilizers and Improved Seeds

Optimum use of inputs, particularly, ferlizers and seeds is a major driver to agrigrowth. However, an indication that works negatively is that the fertilizer subsidy has led to an imbalanced use of N, P and K and has contributed to deteriorating soil conditions. The expenditure on subsidies crowds out public investment in agriculture research, irrigation, rural roads and power. While the overall consumption of fertilizer has increased

Fig. 2: Distribution of Certified/ Quality Seeds for Major Crop Groups

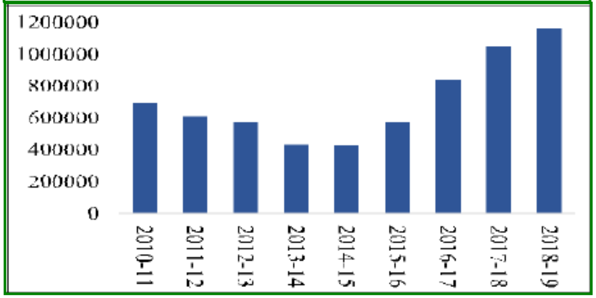


from 70 kg per ha in 1991-92 to 142 kg per ha. by 2015-16, the N, P, K balance particularly, in high fertilizer use areas (e.g. Northwest) is seriously distorted. The integrated nutrient management approach is under implementation to enable a balanced use of fertilizers. Steps like issue of soil testing cards and setting up of soil testing labs are welcome steps to encourage precise use of fertiliser and micro nutrient to enhance productivity of soil. Seed is considered to be a catalyst of change in agriculture (Fig 2). Of late, during the decade of 2000s, *Bt* cotton seeds and hybrid maize seeds have shown spectacular results. The major difference in the two periods is that earlier these high yielding seeds came from public institutions, but lately they are increasingly coming from the private sector in selected crops. Overall, the seed replacement rate has been improving, but much more can be done in this regard to give a boost to productivity through seed improvement.

c. Efficient use of water resources

There is no doubt that the overall size, quality, and efficiency of investment are always the key drivers of growth in any sector. In case of *public* investments in agriculture, as defined in the National Accounts Statistics, more than 80 per cent is accounted for major and medium irrigation schemes. Even in the case of *private* investments in agriculture, almost half is accounted for irrigation, minor, primarily through groundwater, but also now increasingly drip, etc.(Fig.3). So irrigation remains the most dominant component in the overall investment in agriculture. Without proper use of irrigation water, it is difficult to get good returns on better high yielding seeds and higher doses of fertilizers. Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has been contributing in extending the coverage of irrigation and improving water use efficiency with *'per drop More crop'* in a focused manner with end to end solution on source creation, distribution, management, field application and extension activities.

Fig 3 : Year-wise Area Covered under Micro-irrigation



d. Agriculture Extension

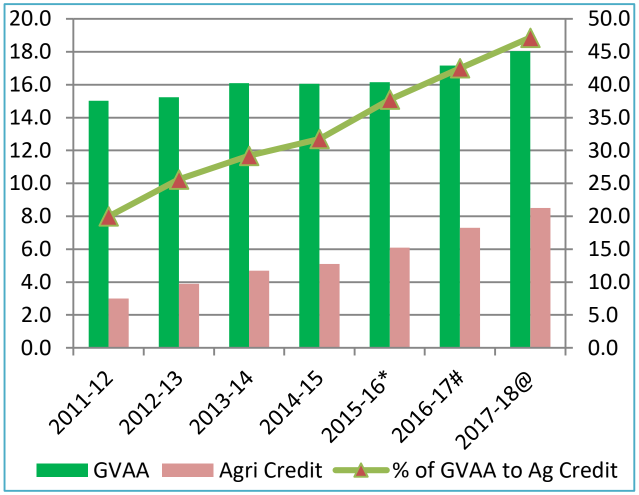
Effective dissemination of technology is also a major driver to growth. However, it is required to reduce the gap between what can be attained at farmers' fields and what is being obtained with the existing practices. There is a need to region specific approach to deliver knowledge to all farmers, especially to involve and motivate the resource-poor farmers (mostly small and marginal). Developing farmer's organizations and federating them, in this regard, assumes special significance. Public extension system, which dwindled since 1990s, needs revival by adequate budgetary support. Along with public sector initiatives, there is a need to promote PPP models, involvement of NGOs, KVKs, Agriculture Universities, etc. for adoption of technology and improvement in productivity in agriculture. Role of FPOs/FPCs in advisory services to farmer members is widely reported, need to get focused attention.

e. Availability of adequate credit

For all the achievement in the agricultural front, credit has played a crucial role for facilitating capital formation and contribute to growth (Choudhary 2002), In view of higher growth responsibility and importance of institutional credit, Government accorded high priority to adequate and timely supply of credit to agriculture. A prominent achievement was the doubling of agriculture credit over a period of 3 years from 2003-04 and 2005-06, the bankers collectively achieved the target within two years period. Since then, the annual agriculture credit disbursement target has been surpassed every year. The share of

Table4/Fig 4 :
Agri Credit as % of GVAA

Year	GVAA	Agri Credit	Ag Credit as % to GVAA
2011-12	15.0	3.0	20.0
2012-13	15.2	3.9	25.6
2013-14	16.1	4.7	29.2
2014-15	16.1	5.1	31.8
2015-16*	16.2	6.1	37.7
2016-17#	17.2	7.3	42.5
2017-18@	18.0	8.5	47.1



agriculture credit, the ratio of credit to Gross Value Added (GVA) in agriculture is increasing steadily over the years (Table 4/Fig. 4). More institutional credit has been purveyed to farmers, more and more farm producers have got linked to formal credit which otherwise would have moved towards informal sources of credit.

However, these achievements are to be translated into extended reach of subsidised credit to the small and marginal as well as landless farmers in regions where flow of credit was comparatively less, particularly, central, eastern & NE region. Hassle-free subsidized credit flow to treatment areas like, Watershed, wadi, need to be explored (Badatya, 2014). A significant welcoming direction is increased investment credit and consequently, increased capital formation in agriculture, facilitated by GoI's Long Term Rural Credit Fund (LTRCF) with NABARD since 2015 to exclusively provide long-term refinance support to cooperative banks and RRBs.

IV
Reinventing Agriculture and Agricultural Livelihood in Times of '*Covid-19*'

A. Short-Term Measures:

a. Behavioural '*Nudges*' for Growth and Development

Behavioural insights approach may work for dealing with Covid-19 pandemic. There needs to be clear messaging about behavioural changes. The lockdown has disproportionately hurt marginalized communities due to loss of livelihood. The casual laborer is the most impacted and is the most vulnerable during the lockdown and thus requires to be looked after. Behaviural insights would come handy in dealing with such cases at this moment. Migrants going back to villages, delayed revival in activity and spread of the pandemic in rural India would give for deeply negative growth rates, particularly agriculture. The impact will be devastating for the economy. So behavioural '*Nudges*' with insights on how to deal with the crisis situation, particularly among rural community would work towards propagating growth and development in agriculture and rural sector.

b. Innovative Supply Chain Models (ISCMs)

Innovative supply chain models for perishables and other commodities may emerge which are competitive, inclusive, scalable and sustainable. Supply chains which are able to connect farmers to consumers during the pandemic may be robust enough for continued use when this crisis passes, though research to support scaling up would be needed. Government must engage civil society organizations, NGOs, farmer collectives, corporate, companies, welfare associations, religious organizations and Panchayat Raj institutions to buy directly from farmers (ICRISAT 2020). In order to facilitate in marketing and procurement, Govt. of India issued an advisory in mid-April 2020 to the States to promote direct marketing without insisting for licensing procedures and facilitate the farmers in timely marketing of farm produce. Based on the advisory, various States undertook different measures towards direct marketing and impact was felt in States like, Tamil Nadu, Rajasthan & UP. (GoI, 2020). In the medium to long term, there will likely be an increase in investments in cold storage facilities primary and secondary food processing firms to support small and marginal farmers and to ease the food supply chain. If these investments continued long term they would strengthen supply chains.

c. Deficiency to Surplus Management (DSM)

With normal monsoon forecast in 2020-21, government has set the foodgrains production target at a record 298.3 million tonnes, comprising 149.9 million tonnes during kharif (summer) season andx 148.4 million tonnes during rabi (winter) season (GoI 2020). The government may ensure that all foodgrains that farmers want to sell in the market is procured. With more production and more workforce, agriculture requires proper food management. This would relieve farmers and facilitate livelihood. "The farm sector will grow by 3 per cent this year despite adverse conditions and it would add at least 0.5 per cent to India's GDP growth in 2020-21." (Chand, Ramesh 2020). With increased production, it would revive private consumption demand, which is very much required for reviving the economy. Government needs to focus on nutrition security as well. With food stocks of 71 million tons, it is better to offer universal coverage ensuring nutrition programmes like Integrated Child Development Services (ICDS), mid-day meals and *Anganwadis* .

d. Policy on Procurement of Perishables (PoPP)

During the lockdown 2.0, Government issued orders to different agencies such as Nafed, FCI and SFAC for procurement of pulses and oilseeds. They were also asked to enhance daily procurement limit per farmer per day from 25 quintal to 40 quintal by relaxing the existing norms under price support scheme (PSS). All the states were also issued advisories for implementation of the market intervention scheme (MIS) for procuring perishable horticultural produce, to protect growers from making distress sale, a welcome step indeed. However, for procurement of perishable horticultural commodities not covered under the PSS, there need to be stringent policy on such MIS, with a view to protect the growers of these commodities from making distress sale during the peak harvesting periods when the prices tend to fall below the economic cost of production with acceptance to all States.

e. Rural Micro infrastructure through MGNREGA

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), has been proved very effective in reducing rural poverty in the country (Ramesh 2012). The Government's first economic relief package of Rs.1.7 lakh crore through various ongoing schemes and programmes such as direct cash transfer through PM Kisan, pension to widows, Jan Dhan Yojana and three-month payment to the cardholders of MGNREGA facilitated farmers and agricultural wage labourers immensely. In another landmark announcement, the government has increased the daily wages of MGNREGA workers in the region that will benefit approximately five crore families across the country. In these pandemic times, State Governments must activate MGNREGA proactively and use it in development of agriculture sector for creating rural and agricultural micro infrastructure. The labour may also be used for agriculture operations. For improving livelihood, there is ample scope for using the labour under the programme for agriculture operation especially in states where labour availability for agricultural operations is limited.

B. Medium to Long Term Measures:

a. Synergy in Agricultural Technology (SAT)

Focus need to be on 'Technology-led Growth'. Technology will drive a third of growth in agriculture (Alagh, 2016). Growth in start ups in agriculture would take agriculture to a different growth path. Start ups in agriculture has the strength to multiply those technologies and to reach millions of farmers in the fastest possible way. There is a need to channelize these sources in an orderly manner, so that the farming community is benefited optimally. This will assist in pushing Indian agriculture to a higher and more sustainable growth which would be the most powerful engine for poverty reduction.

b. Storage and Marketing Infrastructure (SAMI)

Storage infrastructure plays an important role due to imperfect coordination between supplies and demand, seasonality and perishability of horticulture crops. The number of cold storages has gone up from 5,480 in 2009 to 7,913 in 2017, an annual growth rate of 5.5 per cent. However, with improving storage facilities there is a need to redesign the mechanics of procurement and release of foodgrains to the market to ensure that the impact on prices is substantial in the desired direction. With National Agriculture Market (NAM) becoming a reality, improvement in marketing conditions and encouragement to private sector participation is being carried out by reforming APMC Acts. Appropriate changes in the APMC Acts to boost private sector investment in developing regularized markets, logistics and warehouse receipt systems, futures markets, and in related infrastructure are also being carried out. However, wide gaps prevail in the availability of associated infrastructure. This implies that even though almost 90 per cent (32 million tonnes) of cold storage capacity is available for use, only 15 per cent of the required refrigerated transport exists. Further, the gap in the availability of infrastructure necessary for post-harvest handling, like pack-houses and ripening chambers is over 90 per cent, need to be given due attention (Badatya, 2018).

c. Private Sector Initiative (PSI)

The private sector involvement in Indian agriculture is catching up. In these Covid-19 times, involving private sector for mainstreaming agriculture would help agriculture in production, processing and value addition. Initiatives such as infusion of new technologies like *Bt* cotton, hybrid seed technology in maize are examples during early 2010s. These successful examples of *Bt* cotton, hybrid maize, *pusa basmati* rice suggest beneficial outcomes arises from public sector partnership with the private sector farmer groups in mainstreaming fragmented small holders. Firstly, *'focus'* (F) should be on commodity-clusters. The commodity-specific agri-export zones identified earlier may be given adequate 'focus'**.** Secondly, all efforts need to be directed towards productivity enhancement, to *'grow'* (G) more, ensuring quantity and quality for value addition, processing and market penetration both domestic and export. Thirdly, *'partnering'* with private corporate entities is required to make the commodity grow, both in volume and scale. Private sector participation need to be ensured for market tie-ups, processing and exports. Lastly, *'reforms'* are necessary in all spheres, marketing, other private participation, etc. Government has to play a lead role as an enabler, creating all sorts of enabling environments in terms of building incentives and adequate infrastructure. The government has to play a more proactive role as coordinator, facilitator and also as a regulator in times Covid-19.

d. Land and Credit Markets (LCMs)

The linking of small and fragmented farms with large-scale processors and retailers remains a challenge in the high value sector, and restricted land (lease) markets tend to compound the problem. The land and credit markets are intricately linked, and improving the marketability of land will enhance access of farmers to institutional credit that requires the pledging of collaterals. The Model Agricultural Land Leasing (ALL), 2016 seeks to permit and facilitate leasing of agricultural land to improve access to land by the landless and marginal farmers. It also provides for recognition of farmers cultivating on leased land to enable them to access loans through institutional credit ((NITI Aayog, 2016). It has to be taken up earnestly by States for an efficient land lease market.

V
Covid-19 induced Reforms and Way Forward

Irrespective of the challenges, Covid-19 provides an opportunity for policymakers to permanently turn around the lives and livelihoods of rural India. As discussed earlier, agriculture is the only sector that is booted during this lockdown period. Government has looked at all possibilities towards agricultural reforms those had been pending for years. However, it is worthwhile to revisit the role of agriculture in our economic development to throw light into the reform measures / policies the sector will need to adopt to recover fast. The Government recently introduced major agricultural market reforms through three ordinances:

(a) The Essential Commodities (Amendment) Ordinance 2020 amends the Essential Commodities Act, 1955. It empowers the Union Government to control the production, supply, distribution, trade, and commerce in certain commodities, seeks to increase competition in the agriculture sector and enhances farmers' income. It also aims to liberalise the regulatory system while protecting the interests of consumers.

(b) The Farming Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020 seeks to provide for barrier-free trade of farmers' produce outside the markets notified under the various state agricultural produce market laws (State APMC Acts) and

(c) The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020 provides a framework for the protection and empowerment of farmers with reference to the sale and purchase of farm products.

The significance of agriculture sector in India is not restricted to its contribution to GDP, but that on account of its complementarities with other sectors. It has far reaching ability to impact poverty alleviation and rural development. There are several areas of importance for growth of the agriculture sector. These include, among others, enhancing public sector investment in research apart from effective transfer of technology along with institutional reforms, conservation of land, water and biological resources, the development of rain-fed agriculture, timely and adequate availability of inputs, support for marketing infrastructure, etc.Efficient use and avoiding mismanagement of productive resources, especially, land, water, energy and agro-chemicals need to be the priority.

Along with alleviation of poverty and unemployment on a sustainable basis, achievement of food and nutrition security would be the key focus in this Covid-19 times. A strategic vision for agriculture in the post-Covid 19 scenario must factor in three important elements: (a) India's comparative advantage; (b) efficient market reforms at home and managing trade; and (c) environmental sustainability. The agriculture sector must call for further reforms, from marketing to investment and institutional change, especially in water management, new technologies, land markets and creation of efficient value chains.

In the context of taking stock of initiating institutional reforms in agriculture, we need a close look at the 'small holding' character. In an era of decreasing size of holding and its escalating numbers, aggregation at various stages - be it production, processing or marketing – appears to be the only solution. Collective farming, producers organisations, joint liability groups (JLGs), leasing out land, or contract farming are possible ways of aggregation. Government's strategic step for promotion of additional 10,000 Farmer Collectives, in the form of FPOs/FPCs would give a new direction in giving small and marginal farmers a rightful place in agriculture growth. So focus need to shift from Production to Producers (P to P). The future is to see that regulation & reforms (R & R) in agriculture take agriculture in right direction for an inclusive growth path as a 'green shoots for recovering the economy.

Policy needs to be tailored to local needs and one-size-fits-all need to be avoided. Agriculture, being a state subject, states should have flexibility and innovative and out of the box thinking need to be encouraged.

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FINANCING HORTICULTURE FOR SUSTAINABLE LIVELIHOOD IN TIMES OF COVID-19: EMERGING DELIVERY MODELS

K C Badatya*

Abstract: *Horticulture contributes 30 per cent of value added from agriculture. Food processing is fast becoming an indispensable means of value addition to farm produced food and a link between the plough and the plate. The production of horticulture crops outpaced the production of foodgrain continuously since 2012-13. This implies that there is compositional shift within agriculture. The avenues for financing horticulture sector now encompass emerging areas viz., contract farming, value chain financing, financing through FPOs, organic farming, soil-less farming, etc.*

Key Words: Horticulture, Supporting infrastructure, Livelihoods, collectives, Delivery, Processing, contract, Value Chain.

I
Introduction & Background

A significant growth momentum during the past one decade is the growing importance of high value agriculture, particularly horticulture due to increased thrust by Government through National Horticulture Mission (NHM) and National Horticulture Board (NHB), increased government investments in infrastructure such as irrigation facilities, warehousing, cold storage, etc. Gross Domestic Product (GDP) from agriculture is heavily weighted in favour of high value produce, importantly horticulture. As much as 30 per cent of GDP from agriculture is contributed by horticulture (Table 1).

India has been bestowed with wide range of climate and physio-geographical conditions and as such is most suitable for growing various kinds of horticultural crops such as fruits, vegetables, flowers, nuts, spices and plantation crops (coconut, cashew nut and cocoa). Horticulture is increasingly favored by small and marginal farmers as it offers quicker returns and can be utilized significantly for value addition and processing. India has emerged as the second largest producer of fruits and vegetables in the world, contributing 11.8 per cent and 13.4 per cent of the total world production of fruits and vegetables respectively (GoI, 2017). Thus, there appears immense potential to leverage high returns from non-cereal sub sectors, especially horticulture. In all these, flow of finance (farm

* Dr. K C Badatya is the Joint Director, Bankers Institute of Rural Development (BIRD), National Bank for Agriculture and Rural Development (NABARD), Kolkata. The views expressed are author's own. However, the usual disclaimer applies.

credit) plays an active role and need to be adequately emphasized. The avenues for financing this sector now encompass emerging areas viz., contract farming, agri-value chain financing, financing farmer producer organizations, financing organic farming models, including soil-less farming models, like, hydroponics, aquaponics, etc.

Table 1: Value of Output of Horticulture Crops (At 2011-12 Prices)

(Rs.'00 Crore)

No	Particulars	2011-12	2012-13	2016-17
1	All Agricultural Crops	11915 (100)	11986 (100)	12436 (100)
a	Total Fruits and Veg	2662 (22.3)	2796 (23.3)	2863 (23.0)
b	Total Condi .& Spices	385(3.2)	377 (3.1)	406 (3.3)
No	Particulars	2011-12	2012-13	2016-17
c	Total Floriculture	174 (1.5)	173 (1.4)	180 (1.4)
d	Total Plantation	257.0 (2.2)	252.4 (2.2)	256.0 (2.1)
2	Total Horticulture (a+b+c+d)	3478(29.2)	3599 (30.0)	3705 (29.8)

Source: Horticulture Statistics at a Glance 2019

Given this background in this section, the paper is organised into three other sections. The section to follow provides an overview of horticulture in terms of the trends in area, production, yield, trends in supporting infrastructure, growth in agro-processing, etc. The third section highlights emerging areas of financing horticulture, viz., contract farming, agri-value chain financing, financing through farmer producer organizations, organic farming, etc. The last section concludes the paper.

II
Development of Horticulture: Government Policies & Schemes

With the focused attention given to horticulture, there has been spectacular change in terms of adoption of new technologies, production and availability of horticulture produce. After independence, major emphasis was laid on achieving self-sufficiency in foodgrains production to secure reasonable availability of staple food. Further, the Green Revolution technology also favoured wheat and paddy more than any other crop. Diversification towards horticulture got real boost in the early 1990s which coincided with liberalisation of economy Augmenting facilities for processing, marketing and storage, development of rain-fed and irrigated horticulture was one of the objective of new agricultural policy resolution, 1992 (Chand,et al.,2008). It, however, gradually became clear that horticultural crops for which the agro-climates are well suited is an ideal method for achieving sustainability of small holdings, increasing employment, improving environment, providing an enormous export potential and above all achieving nutritional security.

Government of India launched a centrally sponsored scheme as National Horticulture Mission (NHM) in 2005-06. The objectives of the Mission were to enhance horticulture production and improve nutritional security and income support to farm households and others through area based regionally differentiated strategies. All the states and the three Union Territories of Andaman and

Table 2: Area, Production and Productivity of Horticulture
(1991-92 to 2016-17)

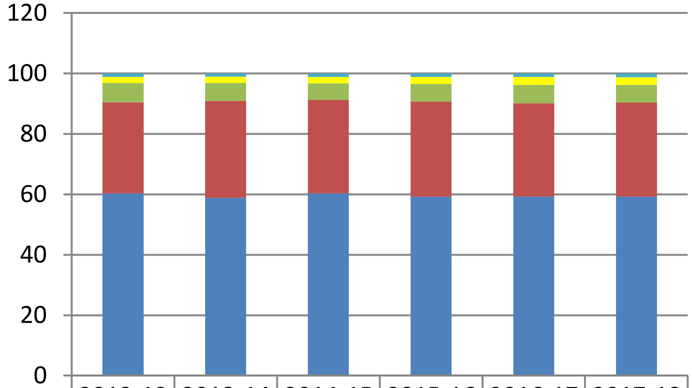
A : Area in ‘million ha.’, P : Production in ‘million MT & Y: Yield in MT/ha.

Year	Fruits			Vegetables			Flowers& Aromatics			Plantation Crops			Spices			Total		
	A	P	Y	A	P	Y	A	P	Y	A	P	Y	A	P	Y	A	P	Y
1991-92	2.9	28.6	10.0	5.6	58.5	10.5	--	--	--	2.3	7.5	3.3	2.0	1.9	1.0	12.8	96.6	7.6
2001-02	4.0	43.0	10.7	6.2	88.6	14.4	0.0	0.5	5.1	5.1	9.7	3.3	3.2	3.8	1.2	16.6	145.8	8.8
2011-12	6.7	76.4	11.4	9.0	156.3	17.4	0.8	2.2	2.9	2.9	16.4	4.6	3.2	6.0	1.9	23.2	257.3	11.1
2016-17	6.5	92.8	14.3	10.3	175.0	17.0	0.9	3.3	3.3	3.5	16.9	4.6	3.5	7.1	2.0	24.9	295.2	11.8
CAGR	3.3	4.8	1.4	2.5	4.5	1.9	2.4	13.4	-2.9	1.7	3.3	1.3	2.3	5.4	2.8	2.7	4.6	1.8

Source: Horticulture Statistics at a Glance 2017, CAGR: Author’s own calculation

Nicobar Islands, Lakshadweep and Puducherry are covered under the mission except eight North Eastern states including Sikkim and the States of Jammu & Kashmir, Himachal Pradesh and Uttarakhand. The latter were covered under the Horticulture Mission for the North East and Himalayan States (HMNEH). However, since 2014-15, both NHM and HMNEH schemes have been subsumed into the Mission for Integrated Development of Horticulture (MIDH), which is being implemented in 384 districts in the country (GoI, 2020).

Fig 1: Production Share of various Horticulture crops



	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Flowers & Aromatics	1.1	1.0	1.1	1.1	1.1	1.2
Spices	2.1	2.2	2.2	2.4	2.7	2.6
Plantation Crops	6.3	5.9	5.5	5.8	6.0	5.8
Fruits	30.2	32.1	30.9	31.5	30.9	31.2
Vegetables	60.3	58.8	60.3	59.2	59.3	59.2

Source: Horticulture Statistics at a Glance 2017

III
Indian Horticulture: Status and Growth

a. Trends in Area, Production and Productivity

The production of horticultural crops increased from 92.8 million MT in 1991-92 to

295.2 million MT in 2016-17 at a compound annual rate of growth (CARG) of 4.6 per cent. The production of vegetables increased from 58.5 million tonnes to 175 million tonnes since

Table 3: India's Position in World Horticulture					
Vegetables			Fruits		
	India share %	Rank		India share %	Rank
Vegetables	10.8	2	Fruits	13	2
Brinjal	27	2	Banana	24.5	1
Cabbage	12.5	2	Orange	10.1	3
Cauliflower	35.2	2	Citrus	11.2	3
Onion	21.5	2	Sapota	1.8	
Peas	2.5	1	Grapes	3.1	16
Tomato	11.1	1	Mango	22.1	1
Potato	12	2	Papaya	44..4	1
Sweet Potato	0.7	9	Pineapple	6.8	7
okra	66.3	1	Guava	17.9	1
Cassava	8	8	Lemon	17.5	1
Source: Horticulture Statistics at a Glance 2017					

The area under horticulture increased from 6.5 million ha. in 1991-92 to 24.9 million ha. in 2016-17, with a CAGR of 2.7 per cent (Table 2). 1991-92 to 2016-17 at a CAGR of 4.5 per cent as against fruits which grew at 4.8 per cent from 28.6 million MT to 92 million MT during the same period. The per capita availability of fruits and vegetables increased from 391 gram/ day in 2004-05 to 578 gram/ day in 2016-17 (NHM, 2017). The CAGR in production was highest in the case of flowers and aromatics (13.4%) during 2001-2017.

The country has a good opportunity of growing medicinal and aromatic plants. It is the largest producer, consumer and exporter of spices. India is also the largest producer of coconut, arecanut and cashew nut in the world. The share of vegetables remains highest (59 - 61%) in horticulture crop productions over the last five years (Fig 1).

b. India's Position in World Horticulture

India is either the world's second or third-largest producer in about 13 crops (Table 3). India was making its presence felt as the second largest producer of vegetables and fruit. During 2016-17, its contribution in the world production of fruits & vegetables was 13 per cent and 11 per cent, respectively (Mohan, Vishwa 2016).

c. Growth in Supporting Infrastructure

Because of imperfect coordination between supplies and demand, seasonality and perishable nature of horticulture crops, storage plays an important role in horticulture crops. The number of cold storages has gone up from 5,480 in 2009 to 7,913 in 2017, an annual growth rate of 5.5 per cent. Total cold storage capacity increased from 24.45 million MT in 2009 to 34.67 million MT in 2017 with an annual growth rate of 5.2 per cent.

Table 4: Distribution of Cold Storages as at end March 2017: Region-wise & Agency wise

Region	Number	Capacity (Mln. MT)
Southern Region	994 (12.6)	2.71 (7.8)
Western Region	1524 (19.3)	4.31 (12.4)
Eastern Region	1046 (13.2)	8.13 (23.5)
Central Region	2677 (33.8)	15.88 (45.8)
Northern Region	1239 (15.7)	3.42 (9.9)
North-east Region	63 (0.8)	0.23 (0.7)
Total	7913 (100.0)	34.67 (100.0)

Source: Horticulture Statistics at a Glance 2017.

The State of UP (2285) is having highest number of cold storages followed by Gujarat (753) and Punjab (655). Region-wise, share of number of cold storages is highest in Central region (33.8%), followed by Western region (19.3%), Northern region (15.7%), Eastern Region (13.2%), Southern region (12.0%) and North-east region (0.8%) (Table 4).In terms of

	Table 5: Pack Houses/Integrated Pack Houses under MIDH as at end Mar 2017- Region-wise				
	Region	Pack House (No.)	Share (%)	Integrated Pack House (No.)	Share (%)
1	Southern Region	5111	(25.0)	55	(51.9)
2	Western Region	5720	(28.0)	35	(33.0)
3	Eastern Region	2629	(12.9)	1	(0.9)
4	Central Region	4113	(20.1)	1	(0.9)
5	Northern Region	1910	(9.3)	7	(6.6)
6	North-east Region	954	(4.7)	7	(6.6)
	Total	20437	100.0	106	100.0

Source: Horticulture Statistics at a Glance 2017

cold storage capacity created, it has gone up from 24.45 million MT in 2009 to 34.67 million MT in 2017, an annual growth rate of 5.2 per cent. Region-wise, share of number of cold storages is highest in Central region (45.8%), followed by Eastern region (23.5%) and Western region (12.4%).

Cold storage infrastructure needs to be coupled with logistical support to facilitate smooth transfer of harvested value from farms to distant locations. This includes: (i) pack-houses for packaging and preparing fresh produce for long distance transport, (ii) refrigerated transport such as reefer vehicles, and (iii) ripening chambers to ripen raw produce before marketing. A total of 20,437 pack houses and 106 integrated pack houses have been created under MIDH as at end March 2017. A region-wise distribution of pack houses and integrated pack houses created under MIDH is presented in Table 5.

While there are sufficient cold storages, wide gaps prevail in the availability of associated infrastructure. This implies that even though almost 90 per cent (32 million tonnes) of cold storage capacity is available for use, only 15 per cent of the required refrigerated transport exists. Further, the gap in the availability of infrastructure necessary for post-harvest handling, like pack-houses and ripening chambers, is over 90 per cent (Table 6).

d. Value Addition through Processing

Food processing is fast becoming an indispensable means of value addition to farm produced food and a link between the plough

Table 6: Gaps in cold chain infrastructure (2014)			
Cold chain infrastructure facility	Required	Available	Gap (%)
Cold storage ((in million MT)	35.1	31.8	3.2 (9.3
Pack-houses (No.)	70,080	249	69,831 (99.6)
Reefer vehicles (No.)	61,826	9,000	52,826 (85.4)
Ripening chambers (No.)	9,131	812	8,319 (91.1)
Source: Standing Committee on Agriculture 2018			

and the plate. The number of registered Food Processing Industries (FPIs) has gone up from 26,219 during 2007-08 to 38,608 as at June 28, 2017, which grew at a CAGR of 5.7 per cent (Table 7). Government of India has regarded fruit processing industry as the sunrise sector and several schemes have been formulated to provide financial support and aid for establishing modern processing infrastructure and other promotional measures to encourage the growth of the industry. GoI has approved a new Central Sector Scheme (CSS), Pradhan Mantri Kisan SAMPADA Yojana (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) with an allocation of Rs.6,000 crore for the period 2016-20. PM Kisan SAMPADA Yojana is a comprehensive package which will result in creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet (GoI, 2018).

III
Financing Horticulture : Emerging Delivery Models in Times of Covid-19

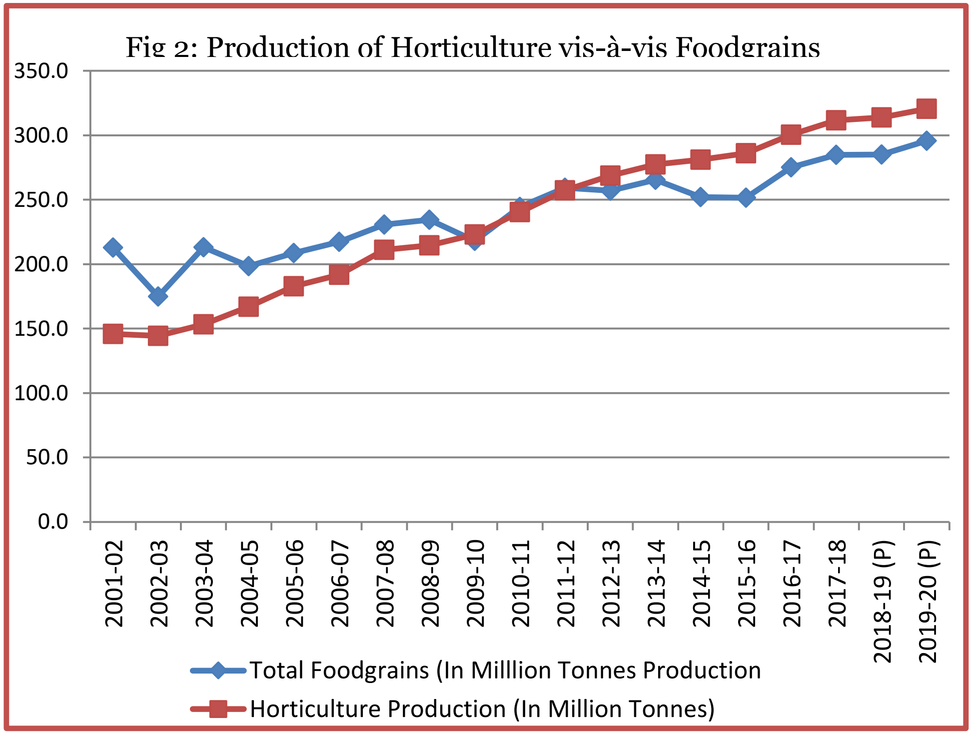
Horticulture has been emphasized both by Government and private sector through bank finance during the last one decade. The NHM created in 2005-06 played a significant role in creating enabling environment for horticulture development through Government subsidies with the involvement of bank finance. The importance of horticulture was felt due to reasons like,

- Generates employment through labour input in production, off farm jobs in processing, packaging, marketing, which is twice per ha. as compared to cereals (World

Table 7 : Estimated Number of Registered Food Processing Industries (As on 28.06.2017)										
No.	Description	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	CAGR (%)
1	Meat	77	90	85	115	146	140	148	170	11.98
2	Fish,Crustaceans	340	352	359	436	390	462	466	427	3.31
3	Fruits	735	709	832	1052	1078	1110	1101	1133	6.38
4	Vegetable Oils and Fats	2515	2429	2421	3307	3394	3312	3300	3240	3.68
5	Dairy Products	1096	1100	1112	1493	1653	1695	1753	1783	7.20
6	Grain Mill Products	12807	13464	13397	17792	18244	18131	18272	18953	5.76
7	Starches & Products	442	589	670	757	766	723	744	699	6.77
No.	Description	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	CAGR (%)
8	Bakery Products	955	993	1056	1450	1399	1519	1498	1613	7.78
9	Sugar	778	733	744	895	906	859	791	763	-0.28
10	Cocoa, Chocolate	404	456	466	509	560	539	505	594	5.66
11	Macaroni, Noodles & Products	73	61	51	83	75	129	105	91	3.20
12	Prepared Meals & Dishes	-	45	139	343	416	352	298	277	35.38
13	Food Products N.E.C.	4091	4290	4225	5114	5101	5251	5546	5765	5.02
14	Animal Feeds	555	547	606	677	755	873	820	881	6.82
15	Distilling, Blending Of Sprits	280	291	296	325	378	365	369	395	5.04
16	Manufacture of Wines	64	79	69	74	77	78	71	74	2.10
17	Manufacture of Liquors, Malt	120	96	117	154	141	154	143	153	3.53
18	Mineral Water & other Soft Drinks	887	896	834	1264	1401	1483	1520	1597	8.76
	Total	26219	27220	27479	35838	36881	37175	37450	38608	5.68
Source: Horticulture Statistics at a Glance 2017, CAGR: Author's own calculation										

- Bank's Rural Investment Climate Surveys, 2003),
- Returns on land increases by ten-fold as compared to cereals (World Development Report-WDR, 2008).
- Best suited for market linkage through contract farming and Farmer Collectives like, FPOs/FPCs.
- Provides both food and nutrition security, facilitates rational use of resources, land, water, energy, etc.,
- Cures "Problem soil" – side effect of cereal production based "Green Revolution".

The investment in horticulture has gone up significantly from Rs.24 crore in 7th Five Year Plan (1985-90) to Rs.16,840 crore during 12th



Sources: For figures up to 2017-18, Horticulture Statistics at a Glance 2018. For 2018-19, 2019-20, Third Advance Estimates of Area & Production of Horticulture Crops, Ministry of Agriculture & Farmers Welfare, Govt. of India

Plan (2012-17). Horticulture has grown at 4.1 per cent during 2007-08 and 2019-20 as compared to growth of food grains at 1.9 per cent during the same period. The production of horticulture crops outpaced the production of food grain since 2012-13 (Fig 2). This implies that there is compositional shift within agriculture and it is now more capital and credit intensive, which warrants prioritizing adequate disbursement of term loans to horticulture (Dave 2018).

Over the recent past, multiple factors have worked together to facilitate growth in the horticulture sector, which include growth in household income and consumption, change in lifestyle and rising demand for processed products, etc. Indian horticulture is expected to generate better momentum in the years to come due to increased investments in infrastructure such as irrigation, warehousing and cold storage, agro-processing, etc. However, necessary support mechanism through development of varied financing models with emphasis on value chain system need to be the overriding priority (Badatya, 2017). This section addresses these emerging models of financing horticulture and to augment income of farmers in times of Covid-19.

a. Contract Farming (CF)

The National Agriculture Policy (NAP) envisages that "private sector participation will be promoted through contract farming and land leasing arrangements to allow accelerated technology transfer, capital inflow and assured market for crop production, especially of horticultural crops, oilseeds and cotton" (GoI, 2000).

The majority of smallholders experience difficulties in obtaining credit for production inputs. In most CF cases, tripartite arrangements are being made between buyers, farmers and banks. Arrangements are made with banks through crop liens that are guaranteed by the buyers/sponsor, i.e. the contract serves as collateral. In such Covid-19 and consequent crisis, banks and farmers need to look for entering into such tie-ups with corporate entities manufacturing farm inputs in order to offer crop finance schemes to farmers who undertake contract for the latter. CF also has its merits in technology application and use of special inputs by farmers. When technologies required for growing certain products, but farmers lack the resources, necessary technical skills, special inputs, access to finance for investments into special farm facilities and equipment,contract farming arrangements compensate through embedded financial and non-financial services.

Box 1

A. Highlights of Model Contract Farming Act, 2018

- Special emphasis on protecting interests of farmers, as weaker of the parties entering into contract.
- In addition to contract farming, services contracts all along the value chain, pre-production, production, post-production.
- Registering and Agreement Recording Committee or an "Officer" for the purpose at district/block/ taluka level for online registration/recording of agreement.
- Contract framing to be outside the ambit of APMC Act. Contracted produce to be covered under crop / livestock insurance in operation.
- No right, title of interest of the land shall vest in the sponsor. No permanent structure can be developed on farmers' land/premises.
- Promotion of FPOs / FPCs to mobilize small and marginal farmers and can be a contracting party if so authorized by the farmers.
- No rights, title ownership or possession to be transferred/ alienated/vested in the CF sponsor, etc.
- Ensuring buying of entire pre-agreed quantity of agricultural produce, livestock or its product of contract producer as per contract.
- Contract Farming Facilitation Group (CFFG) for promoting CF and services at village/panchayat level.
- Accessible/simple dispute settlement mechanism at lowest level possible for quick disposal of disputes.
- The Act is a promotional and facilitative Act and not regulatory in its structure.

Source: http://pib.nic.in/newsite/PrintRelease.aspx?relid=179462

However, CF has many issues to be addressed. The type of contract is an important issue. The retailers are reluctant to enter into a formal contract because of the non-enforceability of the same (Badatya, 2009). The Ministry of Agriculture, Government of India has released the "The State / UT Agricultural Produce Contract Farming (Promotion and Facilitation) Act, 2018", which lays emphasis on protecting the interests of farmers incorporating services contracts all along the value chain, pre-production, production and post-production (Box 1A). However, States are yet adopt it in letter and spirit.

However, Covid-19 pandemic has blessings in disguise for agriculture. The Government has brought out the 'The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020' on 05 June 2020, which would provide a legal basis to the existing practice of contract farming (Box 1B). The ordinance would attempt to provide a national framework for contract farming by bringing uniformity in provisions of contract farming under state regulation enacted under APMC Acts.

b. Value Chain Financing (VCF)

Value chain encompasses the activities from production to distribution that bring *'agri-horti'* produce from the farm to the table

Box 1

B. Highlights of Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020

The Ordinance has three main features:

- A farmers may enter into a written agreement which can specify terms and conditions of quality, grade, time of supply price and the extension services etc.
- The agreement could be for a period of 1 to 5 years.
- The price or any variation of the same has to be part of the agreement. For any additional amount over the agreed price, the prevailing price in APMC/electronic portal etc. will be the benchmark.
- All contracts are to be registered with a state level authority set up by StatesThe price or any variation of the same has to be part of the agreement. For any additional amount over the agreed price, the prevailing price in APMC/electronic portal etc. will be the benchmark.

All contracts are to be registered with a state level authority set up by States.

(Aramyan, et al., 2006). Organization of horticulture along the value-chain framework is one of the ways to realize the full potential of the sector. Value chains in fruits and vegetables provide an alternative for the diversification of agriculture in view of high income, employment, foreign exchange earnings and to combat challenges of food and nutrition security.

In order to develop a value chain in horticulture crops, it is required to identify the set of actors and activities that bring basic horticultural produce from production in the field to final consumption. A horticulture value chain framework is particularly makes a strong case in India where farmers produce horticultural crops in large quantity such as fresh fruits and vegetables that have higher potential for value addition, processing and export as compared to conventional crops.

If adequate access is made to processing, marketing and distribution, which could enhance the value of the final products and contribute significantly to the growth of the sector. However, for an optimum outcome, adequate flow of finance at each stage of the value chain through varied financial products is also required. The various financial instruments often used in AVCF fall into five categories (Table 8). Input suppliers with forward linkage represent the beginning or upstream section of a value chain, while retail distributors to end consumers are at the tail or downstream. It is common, in practice that the same individual/firm is in more than one role, e.g., a trader/ aggregator can be an input supplier; a processor might also be a wholesaler or exporter. Five main players in

Table 8: Financial Instruments used in AVCF-Categories	
Category	Instrument
Product financing	Trader credit, Input-supplier finance, Marketing and wholesale company finance, Lead-firm financing
Receivables financing	Trade-receivables finance, Factoring, Forfeiting
Physical-asset collateralization	Warehouse receipts finance, Repurchase agreements (repos), Financial leasing (lease–purchase)
Risk mitigation products	Insurance, Forward contracts, Futures
Financial enhancements	Securitization instruments, Loan guarantees, Joint-venture finance

the value chain, their features, and typical financial requirements are summarized in Table 9.

It is important to identify the risks inherent in the value chain and understand their implications for the financial institution's value chain business opportunities. Among the more important risk categories that financial institutions should consider are: i) production-level risks; ii) side-selling risk iii) aggregator risks; iv) downstream market-level risks; v) client-level risks; and vi) reputation risks. Another dimension to risk management which plays a significant role in the AVCF, was putting emphasis on social sustainability issues such as health and human risks (Grimm etal, 2014).

c. Financing through 'Collectives'

The FPOs as 'Collectives' of farm producers address many problems and create several benefits for the farmer members. The purpose of collectivization of farmers into a producer organisation is to ensure better income for the farmers. The basic purpose envisioned for the FPOs is to collectivize small farmers for backward linkage for inputs like seeds, fertilizers, credit, insurance, knowledge, extension services, etc. and forward linkages such as collective marketing, processing, and market-led agriculture production, etc. (Mondal,2010). Producer Organizations / Companies are considered to be institutions that have all the significant features of private enterprise while incorporating principles of mutual assistance in their mandate similar to cooperatives (Pustovoitova, 2011). Producer Organizations are supposed to be non-political entities aimed at providing business services to small holder farmer members, founded on the principal of self-reliance (Onumah *et al.*, 2007). These FPOs mostly take over the responsibility of any one or more activities in

Table 9: Value chain participants, main features and typical demand for financial services		
Participant	Main features	Typical demand for financial services
Input suppliers	Provide farmers inputs. They often vary in size, and have different and individualized financial needs.	ST working capital, Mid-term financing (equipment dealers), Payments, transfers
Producers/ farmers	All those engaged in primary production, farmers and seasonal/part-time workers. They face significant risks associated with agricultural production.	ST working capital, MTfinancing (equipment, livestock), Deposit accounts (value storage, commitment savings), Payments, transfers
Aggregators, service roviders, traders	Buy produce from the farmers to create scale.	ST working capital MT financing (storage facilities, vehicles), Payments, transfers
Processors	Add value to raw products. Need working capital to buy products in bulk from a farmer/ trader. Need term credit to invest in equipment.	ST working capital, MT financing (equipment) Payments, transfers
Retailers, wholesalers, exporters	Sell the processed product to local and global retailers, supermarkets, and smaller storefront retailers, which in turn, sell to consumers.	ST working capital, MT financing (equipment) Deposit accounts (checking) Payments, transfers
Source: Carlos Cuevas and Maria Pagura, (2016)		

the value chain of the produce right from procurement of raw material to delivery of the final product at the ultimate consumers' doorstep. Such interventions result in more income to the farmer producers. Banks need to cash on such FPOs in order to diversify/enhance their portfolio. There are about 6,500 FPOs in the country.

The collectivization initiatives taken up through FPOs have been giving significant positive outcomes. Now time has come that some *'design thinking'* process is initiated to take this collectivization initiative forward. FPOs can turn around the agricultural economy provided they promise farmers sustainable and better returns and these institutions (FPOs) would not garner adequate returns without farmers buying to a self-sustained business model (Shah, 2016). Therefore, the FPO initiative has to be taken forward with a well thought out, planned, sustainable vision document containing self-sustained business models. A major opportunity has emerged in times of Covid-19. As announced in the Union Budget 2019-20, Govt of India has issued guidelines for promotion of additional 10,000 FPOs in a cluster model across the country. Under the scheme, commodity-specific FPOs would be promoted with *"One-Product One-District"* model to improve backward and forward linkages and convergence (Box 2).

d. Organic Farming

India is home to 30 per cent of the total organic producers in the world, but accounts for just 2.59 per cent (1.5 million ha.) of the total organic cultivation area of 57.8 million ha. (FiBL, 2018). The CSS as Paramparagat Krishi Vikas Yojana (PKVY) is under implementation under National Mission on Sustainable Agriculture (NMSA). During this crisis arising

Box 2

Brief of the Scheme: Central Sector Scheme (CSS) of "Formation / Promotion of FPOs"

- A CSS titled "Formation/Promotion of Farmer Produce Organizations (FPOs)" to form and promote 10,000 new FPOs with a total budgetary provision of Rs.4496/- cr. for five years (2019-24) with a further committed liability of Rs.2369/- cr. for 2024-28 towards handholding of each FPO for five years from aggregation to formation.
- Three Implementing Agencies (IAs) to form and promote FPOs: (i) SFAC, NCDC and NABARD. States may nominate IAs in consultation with DAC & FW.
- DAC & FW to allocate Cluster/States to IAs to form Cluster Based Business Organization (CBBO) in the States.
- FPOs to be formed/ promoted through CBBOs. The CBBOs to have five specialists, i. Crop husbandry, ii. Agri marketing/ Value addition/processing, iii. Law & Accounts, iv. Social mobilisation and v. IT/MIS. These CBBOs to be platform for end- to-end knowledge for all issues.
- The National Project Management Agency (NPMA) at SFAC for providing overall project guidance, data compilation and maintenance through integrated portal, information management and monitoring, etc.
- Minimum members in FPO to be 300 in plain area and 100 in NE & hilly areas. Ministry may revise based on need/ experience with approval of Union Agriculture Minister.

- FPOs to be under *"One District One Product"* cluster to promote specialization, marketing, branding & export by FPOs. Priority to be given for formation of FPOs in Aspirational Districts with at least one FPO in each block.

- A provision of Equity Grant for strengthening equity base. Credit Guarantee Fund of Rs.1,000/-cr. in NABARD, Rs.500/cr. in NCDC with equal share by DAC & FW.

- States/UTs to avail loan at prescribed concessional rate under Agri-Market Infrastructure Fund (AMIF) in NABARD for developing agriculture marketing and allied infrastructure in GrAMs, by making marketing & allied infrastructure including Common Facilitation Centre / Custom Hiring Centre for FPOs.

- CBBOs to provide initial training. Training of CEO / BoDs / Accountants will be provided in resource planning, organizational, accounting / management, marketing, etc in reputed National / Regional training Institutes.

Source:
https://pib.gov.in/PressReleseDetail.aspx?PRID=1603627

from Covid-19 pandemic, demand for herbal and organic products like, turmeric, ginger, is more in order to maintain immunity. Along with food security, Government also gives thrust on nutritional security which mostly would be derived from organic crops.

'Hydroponics' and *'Aeroponics'*, as soil-less farming technologies for growing plants in nutrient solutions (water containing fertilizers) without any soil as 'growing medium' are best suited for organic farming. Hydroponic plants, free from chemicals and pesticides, makes a safe bet for herbal and organic crops. In this Covid-19 crisis period, with people indoor, would be driven towards raising plants through hydroponics and aeroponics with application of Internet of Things (IoT). Such tool kits may be financed by banks in large numbers.

Farm level pre-processing, sorting, grading, packing and pre-cooling need to be developed to build an effective supply chain for organic produce. These activities need to be encouraged by farmers' collectives. Under organic agriculture, every individual farmers produce would be unique and may have features that would attract consumers to demand produce from a particular farmer. Such farmers can even develop their own signature brands, as has been in HP by enterprising apple farmer and in Maharashtra as Mahagrapes.

IV
Conclusion

Several hurdles need to be overcome to make horticulture more promising. Almost 85 per cent of land holdings are marginal or small which require intervention in terms of a mass movement for collectivizing producers through farmer's institutions, which would achieve scale in production and leverage it to the advantage of all stakeholders, especially primary producers. Secondly, concern for food safety, traceability and assured year-round availability of quality agri-produce at reasonable prices need to emerge as a priority in the supply chain. Third, the fragmented agricultural marketing value chain and the large number of intermediaries is another major constraint, leading to wastage, low returns to producers and volatility in availability and prices at the consumer end. Fourth, estimates of the wastage of perishable such as fruits and vegetables range from 18-40%, which need to be contained on priority with adequate investments on logistics and infrastructure. Finally, the production and price risks are the most vital areas of attention. However, the growing demand for quality agricultural products creates an opportunity to reduce risk in horticulture through the integration of producers on the one hand and retailers and processors on the other.

The major growth segments in Indian FPI are identified to be fruits and vegetables (pulps, juices, ready to serve beverages, jams, squashes, pickles). CF and AVCF models are suitable emerging financing tools would grow further with new agri-reforms announced in terms of ordinances recently and facilitate horticulture grow further in future.

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RURAL CO-OPERATIVES FOR RURAL LIVELIHOODS

B. B. Sahoo*

Abstract: *Co-operative credit system is the backbone of rural India. In terms of structure, clientele and credit delivery, these credit institutions are unique. Despite their inherent weaknesses in terms of capital, business acumen and governance and management, they are the most trusted banking partner for the rural people. As the credit cooperatives work closely with farmers, artisans, shopkeepers and others in rural areas, they need to remain strong during the present covid pandemics. In this context, this paper seeks to study the current status and growth of the rural co-operative banks in India and the scope for their strengthening for effective rural livelihoods during difficult periods like covid-19 pandemics.*

Key Words: Co-operative Credit System, Reserve Bank of India, Amalgamation, Economies of Scale

I
Introduction & Background

Rural credit co-operative structure in India is one of the world's largest rural financial systems. It plays an important role in financial intermediation in agriculture and rural development. Originally, the rural co-operatives were envisaged as a mechanism for pooling the resources of people with small means and providing them access to cheap and cost-effective financial services. These co-operatives have been a key instrument of credit delivery to enable farmers to meet their production needs and so increase crop production and productivity. The co-operatives extend financial services to large sections of low and middle income group people in rural areas. During the past over hundred years, these credit co-operatives have witnessed many successes and failures. Of late, they have been plagued by numerous problems such as poor governance and management, high overdue, increasing accumulated losses and financial indiscipline and growing Non Performing Assets (NPAs).

a. Ground Level Credit (GLC) flow for agriculture

At the ground level, Commercial Banks, Regional Rural Banks and Co-operative Banks are the three major Primary Financial

* Deputy General Manager & Faculty Member, Bankers Institute of Rural Development (BIRD), Kolkata; Views expressed in the article are of the author and not of the institution he belongs to. E-mail: bibhuti.sahoo@nabard.org

Table 1: GLC flow for agriculture in India- 2009-10 to 2018-19 ((% of Total)

Year	CBs	RRBs	Coop. Banks	Total
2009-10	74.3	9.2	16.5	100.0 (384514)
2010-11	73.8	9.5	16.7	100.0 (468291)
2011-12	72.1	10.7	17.2	100.0 (511029)
2012-13	71.2	10.5	18.3	100.0 (607375)
2013-14	72.3	11.3	16.4	100.0 (730122)
2014-15	71.5	12.1	16.4	100.0 (845328)
2015-16	70.2	13.1	16.7	100.0 (915509)
2016-17	75.0	11.6	13.4	100.0 (1065755)
2017-18	74.9	12.2	12.9	100.0 (1162617)
2018-19	75.6	12.1	12.3	100.0 (1254762)

(*Figures in brackets are amount in Rs.Crore*)
Source: Basic Statistical Returns, RBI, Various Issues; NABARD, Various sources

Institutions dealing with financing agriculture and allied activities. The share of the co-operative banks, one of the oldest financial institutions, in the Ground Level Credit (GLC) flow has been declining very fast. As on 31 March 2019, the share of co-operative banks in the GLC flow was only 12.3 percent as against the share of Commercial Banks and Regional Rural Banks at 75.6 percent and 12.1 percent. Table 1 presents the agency-wise ground level credit flow for agriculture and allied activities during the last 10 years.

Although the co-operatives are the oldest institutions and are present in almost all the villages, the share of the co-operative banks has been declining. Annual growth rate of the GLC flow of the co-operative banks from 2009-10 to 2018-19 was 10.2 percent, while the same for Commercial Banks and Regional Rural Banks was 14.6 percent and 18.1 percent respectively. Further, the contribution of co-operative sector in the total GLC flow has been declining over the years. Therefore, it is a matter of concern for the co-operative sectors in purveying credit to farmers.

The co-operatives are considered as an instrument of rural development. But the importance of the co-operative sector in purveying credit to farmers and others in rural areas has been declining. As farmers and other weaker sections of the rural areas depend on rural co-operatives such as Primary Agricultural Credit Societies (PACS) and District Central Co-operative Banks (DCCBs), an attempt has been made in this paper to understand the status and growth of rural co-operative credit institutions in the country and the likely impact of covid pandemics on rural people and rural credit co-operatives.

b. Rural Co-operatives: Financing rural livelihood

Co-operative institutions play an important role in the credit delivery mechanism in rural areas. They, as the key players in providing credit to farmers and others in rural eco-system, exert substantial impact on the lives of millions of rural households. The penetration of Primary Agricultural Credit Societies (PACS), the first tier of the Short Term Co-operative Credit Structure, is of particular relevance to our rural economy. They cover more than 95 percent of the villages in the country. But it is a matter of concern that in spite of their large outreach and enrolment of a large number of farmers, they have a low share in the total ground level credit flow in the country.

The co-operatives as people's institutions have a long legacy and a rich tradition in India. They are considered as an instrument of economic development combining the advantages of private ownership of public good. They were the first formal institutions to be conceived and developed to purvey credit to rural India and have been a key instrument of credit delivery to enable farmers to meet their production needs. In the process, they help increasing farm production and productivity. Therefore, the co-operatives occupy an important position in rural financial system. Due to the growing importance of this sector, particularly in rural areas, many opine that *Cooperation is the best hope of rural India*.

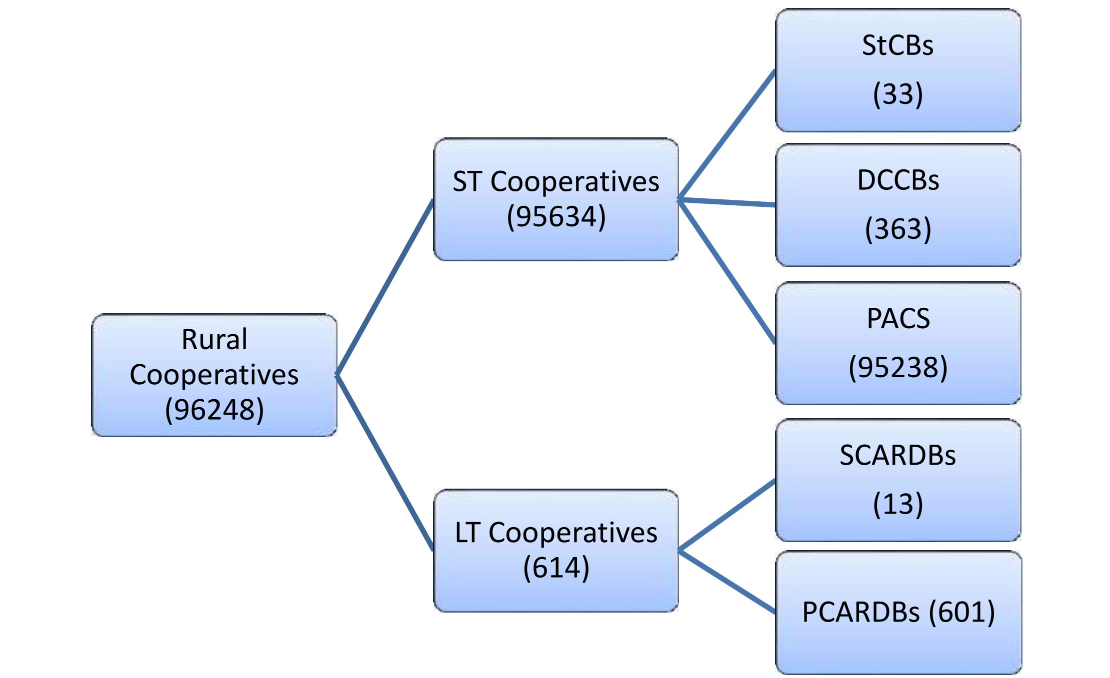
The advantages of the co-operative credit institutions as a source of rural livelihood are as under:-

- Key source of credit for the rural customers such as farmers, artisans and businessmen.
- Reduced hegemony of private moneylenders.
- Protected farmers and other customers in rural areas from high rate of interest and account manipulation by the moneylenders.
- Developed the habit of savings and borrowings for productive purposes.
- Taught rural customers modern production methods, post-harvest management and marketing of the agri-commodities.

II
Overview of Rural Co-operative Credit Institutions

Like other banks, the co-operative banks are founded by collecting funds through shares, accept deposits and grant loans. They have a substantial impact on the lives of millions of farmers, artisans, carpenters and others in rural areas. These institutions are unique in terms of structure, clientele and credit delivery mechanism. They work on the principle of cooperation, self-help and mutual help. They are set up to provide access to credit mainly to the farmers, the poor and others in the low income groups living in rural areas. Unlike the commercial banks, the co-operative banks play an active role in encouraging rural business, increasing the income of farmers and working towards inclusive growth.

Figure 1: Structure of Rural Co-operative Credit Institutions in India



Typically, the co-operative institutions are part of two distinct structures, commonly known as

Short Term Co-operative Credit Structure (STCCS) and Long Term Co-operative Credit Structure (LTCCS). The STCCS, comprising primary agricultural credit societies (PACS) at the village level, Central Co-operative Banks (CCBs) at the District level, and the State Co-operative Bank (StCB) at the State level, primarily provides short term crop loans and other working capital loans to farmers, artisans, carpenters, etc. Of late, the ST co-operatives have been also providing long duration loans for investments in the rural sector. The LTCCS, comprising State Co-operative Agriculture and Rural Development Bank (SCARDB) at the State level and Primary Co-operative Agriculture and Rural Development Bank (PCARDBs) at the taluk/village level, has been providing medium and long term loans for making investments in agriculture, rural industries, and housing. The structure of rural co-operative credit institutions in India is presented in Figure 1.

a. Status and performances

1. ST Co-operative Credit Structure (STCCS)

The State Co-operative Bank acts as a link between Reserve Bank of India (RBI) and National Bank for Agriculture and Rural Development (NABARD) and the District Central Co-operative Banks. It obtains funds mainly from share capital, deposits, loans and overdrafts. It lends to Central Co-operative Banks and Primary Agricultural Credit Societies. It gets deposits from individuals and co-operative societies.

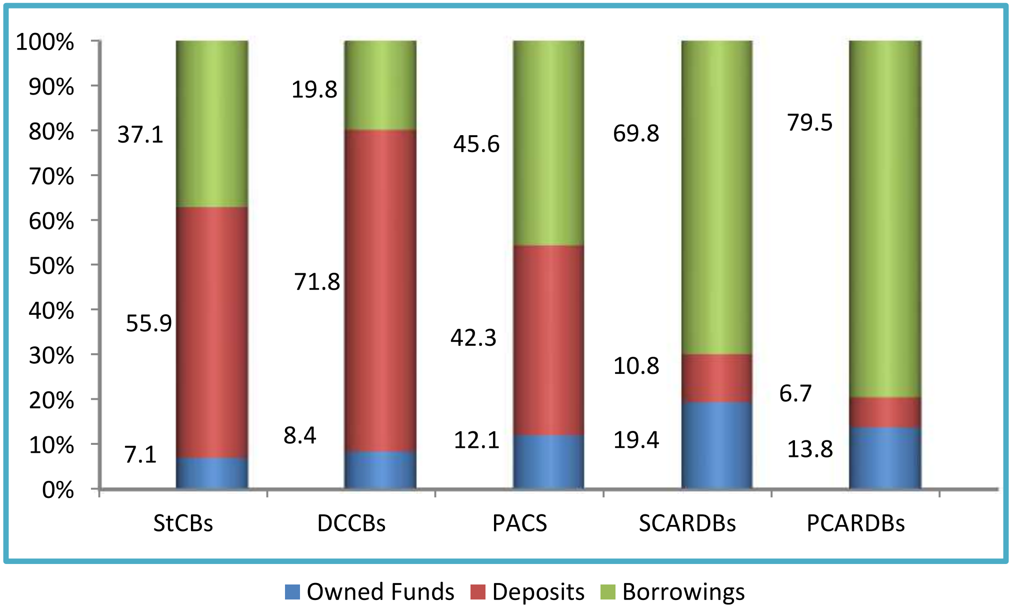
The DCCBs are the federations of PACS in the districts and are of two types, i.e., membership of primary societies only and membership of societies as well as individuals. The funds of the DCCBs consist of share capital, deposits, loans and overdrafts from State Co-operative Banks. They provide finance to member societies within the limits of their borrowing capacity.

The PACS is an association of borrowers and non-borrowers residing in a particular locality. The funds of the society are derived from share capital, members' deposits and loans from DCCBs. Generally, borrowing power of members as well as of the society is fixed. Loans are given to the members for the purchase of cattle, fodder, fertilizers, pesticides, etc. More than 6 lakh villages are covered under PACS.

2. LT Co-operative Credit Structure (LTCCS)

The long term Structure comprised 13 SCARDBs and 601 PCARDBs. The long term co-operative structure works for the overall development of farm and non-farm activities in rural areas. Some such activities include land development, farm mechanisation and plantation & horticulture. Goat/sheep breeding, piggery, dairy development, village industries, credit facilities to artisans etc. While SCARDBs purvey credit from NABARD to PCARDBs or to farmers directly through their branches, PCARDBs provide loans to farmers and others. Both SCARDBs and PCARDBs have small deposit base and they mostly depend on borrowings for on-lending. In comparison with the STCCS, the LTCCS is weak in terms of resource position and asset quality.

Figure 2: Resource composition of rural co-operative institutions as on 31 March 2017



a. Resource composition

Figure 2 presents the details of resource composition of the rural co-operatives as on 31 March 2018. In short-term structure, while StCBs and DCCBs depend more on deposits, PACS depend more on borrowings. In long-term structure, borrowings constitute the maximum share both in SCARDBs and

PCARDBs. Agency-wise analysis shows that while deposits of DCCBs and StCBs constituted 71.8 percent and 55.9 percent of their resources, borrowings constituted 79.5 percent and 69.8 percent of PCARDBs and SCARDBs respectively. On an average, the resource positions of PACS in STCCS and PCARDBs in LTCCS are very small.

b. Balance sheet parameters

Table 2 presents select balance sheet parameters of the rural co-operatives as at the end of March 2018. It is evident from the table that the StCBs play a very important role in almost all the balance sheet parameters. StCBs taken together constituted the maximum share of the total owned funds, deposits, loans & advances and total liabilities of the rural co-operatives as at end of March 2018. It is interesting to observe that the average position of PACS in STCCS and PCARDBs in LTCCS in select balance sheet parameters is very insignificant.

Table 2: Select Balance sheet parameters of rural cooperatives at end-March 2018

(Rs.Crore)

Sl. No.	Particulars	Short-term			Long-term	
		StCBs	DCCBs	PACS	SCARDBs	PCARDBs
1	Owned Funds	16782	40624	30942	4305	3288
2	Deposits	123534	347967	119632	2341	1306
3	Borrowings	72170	90312	128333	15400	16349
4	Loans & Advances	131934	277079	207322	20788	15821
5	Total Liabilities/Assets	226841	525157	243563	28994	30550

Source: Report on Trend and Progress of Banking in India 2018-19, RBI

c. Non-Performing Assets

Rising NPAs has been an area of concern for the banking sector all over the world. Over the years, there has been a change in profit and loss of the co-operative banks. In 2008-09, there were 5 StCBs running on loss. But the loss-making StCBs came down to 1 in 2017-18. As a result, the overall profit of the StCBs increased from Rs.324 crore in 2008-09 to Rs.1037 crore in 2017-18 by more than 220percent. Similarly, the profit of the DCCBs increased by 36.9 percent from Rs.1274 crore in 2008-09 to Rs.1744 crore in 2017-18. The overall profits of StCBs and DCCBs were Rs.1030 crore and Rs.851 crore respectively as at end-March 2018. But at the aggregate level, PACS, SCARDBs and PCARDBs suffered loss of Rs.3182 crore, Rs.9 crore and Rs.511 crore respectively as on 31 March 2018. Table 3 presents select profile of rural co-operatives at All India level at end-March 2018.

Table 3: Select Profile of Rural Co-operatives at end-March 2018

(Rs.Crore)

Sl. No.	Particulars	Short-term			Long-term	
		StCBs	DCCBs	PACS	SCARDBs	PCARDBs
I	In Profit					
	Number	32	311	46405	9	257
	Amount	1037	1744	4134	74	127
II	In Loss					
	Number	1	52	37838	4	344
	Amount	7	893	7316	83	638
III	Overall Profit/Loss	1030	851	(-)3182	(-)9	(-)511

3. Performance of PACS at macro level

The co-operatives in India were introduced in 1904 when the Indian Co-operative Societies Act was promulgated. They work with "*one member, one vote*" and "*no profit, no loss*" principles and are registered under the Co-operative Societies Act, 1912. With the objective of purveying credit to farmers, these co-operatives were formed. They are small financial institutions and are governed by the Banking Regulation Act, 1949 and the Banking Laws Co-operative Societies Act, 1965. They operate both in urban and rural areas under different structural organisations. However, after independence of India on August 15, 1947, the role of co-operative societies grew beyond agricultural credit and it started covering activities such as production, farming, marketing and processing.

The Primary Agricultural Credit Societies are really the grass root credit institutions dealing with farmers and non-farmers in rural areas. more than half of the members of the PACS should avail credit from the societies. It can also be observed that loss of the PACS has increased by 28.1 percent during the last 11 years. Table 5 presents the growth of the PACS at village level. It can be observed from the table that there has been a small increase in the number of PACS in the country.

Table 4: Select parameters of Primary Agricultural Credit Societies at end March 2005/2018

(Amount in Rs.Crore)

Particulars	2008	2018	% Change
No of viable PACS	58472 (61.6)	64382 (67.6)	10.1
Total members (No. in Cr)	13.15	5.52	-58.0
Total borrowers (No in Cr)	7.94	2.01	-74.7
Number of PACS in profit	38307	46405	21.1
Number of PACS in loss	48520	37838	-22.0
Amount of profit (Rs. Cr)	2230	4133.59	85.4
Amount of loss (Rs.Cr)	5711	7315.57	28.1

Figures in brackets are % of total number of PACS)
Source: Annual Report, Various Issues, National Federation of State Co-operative Bank Ltd., (NAFSCOB)

Table 4 presents select parameters of PACS in the country as at end-March 2008 and 2018.As on 31 March 2018, 95238 PACS including branches cater to the credit needs of 2.01 crore borrowers in 6.39 lakh villages. It is evident from the table that only 36.4 percent of the total 5.52 crore members of the PACS avail credit from PACS. For an effective turnover of the PACS to make them viable and sustainable,

Although the number of villages covered under PACS has come down, still, the PACS cover around 6.06 lakh villages. The deposit of rural people with PACS has increased by about 370 percent during the last 11 years. Similarly, loans and advances outstanding of the PACS have increased by more than double during 2008 and 2018. There has been a positive shift in the composition of loan in favour of non-agriculture sector.

a. Non-Performing Assets (NPAs)

Rising NPAs has been an area of concern for the banking sector. According to RBI's Annual Report 2017-18, gross non-performing assets (GNPAs) plus restructured standard advances in the banking system remained elevated at 12.1 per cent of gross advances at the end of March 2018. The problem of NPAs lies with all types of financial institutions. In order to curb NPAs, RBI has put in place revised and harmonized guidelines for resolution of stressed assets, replacing earlier schemes like Scheme for Sustainable Structuring of Stressed Assets (S4A scheme), Strategic Debt Restructuring scheme (SDR), Corporate Debt Restructuring (CDR) scheme and Joint Lenders' Forum (JLF). The guidelines relating to the net stable funding ratio (NSFR) were also issued in May 2018 to prepare ground for banks to build durable buffers against potential liquidity disruptions. Table 6 presents the details of gross NPAs of the co-operative banks as on 31 March 2018.

Table 5 : Select particulars of PACS at end-March 2008 and 2018

(Rs.Crore)

Particulars	2008	2018	% Change
No of PACS	94942	95238	0.31
No of Villages covered	678587	605922	(-) 10.71
Total Deposits	25449	119632	370.09
Loans & Advances O/S	46949	152611	225.06
- Agriculture	37510	83838	123.51
- Non-Agriculture	9439	68773	628.60

Source: Annual Report, Various Issues, National Federation of State Co-operative Bank Ltd., (NAFSCOB)

As on 31 March 2018, the NPAs to loan outstanding of StCBs, DCCBs, SCARDBs and PCARDBs were 4.7 percent, 11.2 percent, 25.0 percent and 38.0 percent respectively. The region-wise analysis shows that NPA levels in percentage terms of the StCBs in the Central, North-Eastern and Western regions were higher than the All India average.

Table 6: Composition of Gross NPA of the co-operative banks as on 31 March 2018 (Rs.Crore)				
Asset classification	StCBs	DCCBs	SCARDBs	PCARDBs
Sub-Standard	2293	15094	1944	3367
Doubtful	2539	13232	3252	2662
Loss assets	1397	2568	9	29
Total NPAs	6223	30894	5206	6058
NPAs to Loan Ratio (%)	4.7	11.2	25.0	38.0
Recovery to Demand Ratio (%)	94.2	71.1	48.4	41.1

Notes: 1. Figures in brackets are proportion to total NPAs in percentage
2. Components may not add up to the total due to rounding off

III
Covid 19 and rural co-operative banks

The rural co-operatives have been working for centuries and they are important vehicles for credit delivery and financial inclusion in unbanked segments of the population, but the progress made by them in terms of coverage of clients and volume of business is not to the level of expectation. The co-operatives are democratically formed institutions and by design, they are member-driven. But only 36.4 percent of the total PACS members were borrower-members as on 31 March 2018. The financial strength of most of the rural co-operatives is weak. The PACS in particular need to raise deposits and provide crop loans and working capital loans to member farmers. But due to low deposit base, they resort to borrowing to meet the demand. Although co-operatives have been working for centuries, they fail to impress the clients due to low or less research, advertisement and lack of promotional activities**.**

The COVID-19 pandemic is causing unprecedented economic hardship and widespread social hysteria across the globe. Since the 3rd week of February 2020, the situation has been worsening causing widespread impacts. Lockdown, social distancing, movement restriction, rising number of corona positive cases have caused panic among all. The banks and financial services including co-operative banks have been hit the most by the covid pandemics. Although the *rabi crops* were ready for harvest by April/May, due to labour shortage and movement restrictions, harvesting was delayed. As a result, the farmers are not able to repay their installments and interest. The business loans, especially to small and medium enterprises are at risk due to shutdown of the banks. Non-Performing Assets (NPAs) are going to become a huge challenge after covid because a lot of businesses are not going to do well.

• Poor infrastructure base	• Poor customer services
• Non-accountability	• Poor accounting and audit standards and practices
• Political interference	• Issues relating to Human Resources
• No balanced growth	• Low business volume and diversification
• Lack of professionalism	• Low outreach and market share
• Traditional agricultural financing	• Poor governance structure
• Inadequate technological intervention	

If COVID 19 continues for long, it will deepen the economic pain and financing conditions may move from bad to worse as investors become more risk averse. This would hit bank credit. Further, the financial institutions may witness a spike in their non-performing assets ratio and credit cost ratio.

One of the positive features of covid pandemics is increasing use of technology in the field of banking. The customers are now encouraged to make use of digital platforms such as UPI, USSD, IMPS, NEFT, mobile banking and debit/credit cards. It is felt that in the coming years, the society may turn into a cashless society and the rural customers even adopt alternative integrated payment features powered by mobile wallets.

The co-operative banks have now granted a moratorium of 3 months on payment of all instalments falling due. The farmers are facing financial problem and are not been able to service their agriculture loans. This may have a negative impact on growth in agriculture and may also increase non-performing assets of banks.

Factors responsible for weakening co-operative institutions

For the poor performance of the co-operative institutions, both internal and external factors are responsible. Some of the internal factors weakening the structure are defective loan policies and procedures, poor quality of lending, ineffective monitoring and supervision over the end-use of credit, over-emphasis on target achievement and faulty selection of beneficiaries. On the external front, some of the factors responsible for weakening the sector are inadequate legal framework, announcement of loan waiver schemes and political environment in which they function. Growing Non Performing Assets, labour resistant, political pressure, competition from other banks and increasing customer awareness on quality, timeliness and adequacy of credit are the stumbling blocks for the sustainability of the co-operatives. Some of the major challenges faced by the co-operative banks are as under:

IV
Scope for strengthening Cooperatives

More than half of the rural population are attached to the co-operatives. The needs and demand-supply pattern of farmers and others in villages are best known by the primary societies. Most of the villagers are the members of the societies. But most of the societies fail to bring improvement in their work culture, resource position and business due to their small means, lack of autonomy, obsolete technology and lack of professionalism. Many of the co-operatives have poor resource base at their disposal for meaningful product diversification. They are also not able to raise capital from stock markets because their equity shares are not transferable. Many a times, the management of the society does not allow for investment in new activities.

Of late, many players have emerged in rural market. In spite of their strong hold in rural areas, they fail to provide the much needed services to their clientele due to insufficient funds, improper management, in-sufficient manpower and obsolete technology. As a result, the outlook for the co-operative banks remains challenging in a number of areas from funding/credit risks to reputation, people and regulatory bodies.

This system presents several problems to the sector. The un-healthy competition between the ST and LT structure and between the tiers in each structure defeats the very purpose of the establishment of the sector. The multi-tier structure increases the transaction costs and reduces efficiency and margins. Expressing concern over the fiscal health of the co-operatives, many State Governments have also been exploring options for merger of DCCBs and State Co-operative Banks. They feel that merger of short-term and long-term structures would be beneficial to the co-operative sector and their clientele. It would ensure financial strength and the working capital of the bank would increase. Thus, more loans can be given to more farmers. It would also provide modern banking services such as Automated Teller Machine (ATM), Mini-ATM and On-line banking facilities to the rural clientele. Experts feel that due to proper accounting, tax planning and utilisation of funds, there is a possibility of increasing bank's profitability.

Suggestions

Credit market is rapidly changing with increasing number of players, competition and leveraging of Information Technology. Recent licensing for small banks/payment banks may also pose a threat to the co-operative banking system. Commercial banks are increasingly becoming aggressive and collaborating with Civil Society Organizations (CSO) to reach the poor. Innovative group mechanisms are also evolving under different group-modes such as Self Help Groups and Joint Liability Groups. In such a scenario, co-operative banks need to introspect to find ways and means to retain their market share, their business, their rural customers and changes in policy for their survival. In view of the above, the following suggestions may be examined:

Merger of Co-operatives : With a view to enhance capital base, strengthen their overhead costs, optimise use of technology and increase area of operation, exposure and business, some of the co-operative banks want to follow the path of merger and consolidation. It is felt that merger and consolidation will bring about better scale efficiency, higher productivity, better financial health and greater credit flow.

Business Diversification: The main sources of funds of PACS are share capital, reserves, deposits and borrowings. More than 60 per cent of the resources of PACS are in the form of borrowings from higher financing agencies and their deposits mobilizations are very small. Poor recovery performance and incidence of high overdues have drastically reduced the eligibility of the new members to borrow and have resulted in low paid-up share capital which in turn directly determine their borrowing capacity. The limited resources have resulted into low business levels, both in ST and LT structure. Therefore, as a first step towards strengthening the co-operatives, merger of ST and LT structure should take place and then capital base of the rural co-operatives need to be strengthened.

Easing documentation procedure: Another important hurdle faced by the co-operative banks is the procedural hassles in sanction and disbursement of loans. The farmer has to visit the Society more than once for sanction of loan and as many times as the secretary requires him for completing the documentation. Further, the loan disbursement procedure is quite cumbersome. For the viability of the co-operative banks through greater business volumes and improved productivity, impediments/ restrictions may be relaxed. Further, in the present competitive market, where terms and conditions change daily, such a time-consuming procedure could be disastrous.

Marketing: The co-operative banks have not been able to compete effectively in marketing some of the new and relatively risk free products also. For example, the SHG bank linkage programme has not made considerable progress in many co-operative banks. There are banks in which the bye–laws do not allow such financing and these banks have not yet taken any step to amend the bye–laws. Some banks require individual members of SHGs to hold shares of the co-operatives banks, even when the loan is given to the SHG group. Even some banks have not given the loan sanctioning powers to their branch managers. As a result, large delays are observed even in sanctioning small loans.

Need of the hour is to broad-base the activities of the co-operative sector and strengthen their credit delivery system. Strong credit delivery system on the part of the co-operatives demands improved infrastructure, introduction of technology such as computer, On-line services and ATM, professionalism, better customer relationship and sound financial health. They should upgrade their services and technology to provide instant, efficient and affordable services in a transparent manner. Effective fund management is important for maximisation of profit. The co-operative sector may come out with newer products having both forward and backward linkages. Customers can be attracted through quality product and pricing. Transparency in sharing information on the product, pricing and utility would create trust among the clientele. If the co-operative banks have to improve their allocation efficiency, bigger banks are needed for which merger of short-term and long-term co-operatives is the solution. Big-sized banks, unlike smaller ones, have the risk-taking ability. With the above changes, co-operatives may become similar to other forms of financial institutions such as Regional Rural Banks.

Conclusion

Co-operatives have may advantages over other institutions in promoting financial inclusion. They are member-driven and democratically formed institutions catering to the credit needs of rural clientele who are not generally touched by commercial banks. They always emphasize three distinct values, i.e., Self-governance, Equality and Voluntarism. As a part of the rural community, they have knowledge regarding borrower quality and business opportunities. They have comparatively lower cost structure than commercial banks. Therefore, during covid or covid-like situations, the rural co-operatives can manage their portfolio satisfactorily.

The co-operatives can address issues of farmers and small entrepreneurs who lack collateral, credit histories and connections. They encourage savings at the grass root level and make credit available to those un-served by commercial banks. Unlike commercial banks that enter a business for the sole purpose of making a profit, co-operative banks look to make profits but also strive to provide additional benefits to the members of the society. They are local in nature. Therefore, the co-operatives are supposed to know the local business environment better. They bring economic resources under democratic control. The co-operatives have the advantage of being able to work effectively on both a very small, and on a very large scale. They create long-term security and they are sustainable, long-lasting and successful. Besides, the co-operatives are the best drivers to support for rural livelihood. The rural co-operatives can turn around if effective policy is put in place for merger, business diversification, group-mode of financing and marketing.

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RESILIENCE OF FARMER PRODUCER ORGANIZATIONS TO '*COVID-19*': SUCCESSFUL INTERVENTIONS

Nabin K Roy*

Abstract: *The nationwide lockdown came as a big shock to migrants, farmers, etc. The lockdown created both a shortage of labour and equipment affecting harvesting of crops, like, paddy, wheat, pulses and oilseeds. Govt. of India, while making all out efforts to provide job and self-employment opportunities to migrant workers, it also initiated efforts towards direct marketing and better returns through Cooperatives and FPOs. FPOs, with resilience strategies through measured approaches for ensuring minimal business continuity on one hand and extending support to the local authorities, ensured aggregation of output, easy availability of farm inputs including farm machinery, etc.*

Key Words : Farmer Producers Organizations, Migrants, Direct marketing, Resilience, Livelihoods

I
Introduction and Background

The Covid-19 induced lockdown led to displacement of millions of migrants, job losses, and many rating agencies, including IMF predicted economy hitting the rock-bottom level. Many instances came up on the plight of thousands of migrant workers walking back to their native places from major cities. However, on the positive front, the lockdown encouraged India to be '*Atmanirbhar*', self-reliant. Government of India, various state governments, NGOs, many corporate houses and individuals rose to the occasion to help the destitute.

a. Migrants' Plight

The plight of migrants was pitiable. While the case of the tragedy of a train running over 16 migrant workers shocked the whole country, in another case, a migrant family consisting of children, was on its way pulling a cart with their two brothers, the wife of the elder one at native place at Pathar Mundla near Indore from Mhow. It reminded the economy of the old hindi-language drama film "Do Bigha Zamin"1953 ('Two bighas of land') in which cruel *'zamindars'* forced landless farmers to pull carts to till the fields.

More than 67.18 lakh migrants returned to 116 districts in six states from urban centers (GoI

* DGM & Faculty Member in Bankers Institute of Rural Development (BIRD), National Bank for Agriculture and Rural Development (NABARD), Kolkata,. The views expressed in the article are of the author and not necessarily of the institution he belongs to.

2020). Of these, about 44 lakh (65.7%), two-thirds returned to 53 districts. Bihar topped the six states with 23.6 lakh (35%) returning to 32 districts, followed by UP with 17.48 (26%) lakh to 31 districts (Table 1).

These are the key pointers from preliminary data compiled by the Union Skill Development Ministry on the return of migrant workers since the Covid-19 lockdown was imposed on March 24. The data, meanwhile, shows a further concentration of returning migrants in 15 districts, including eight from Bihar, of the 53 that recorded over a lakh each. The other 38 districts reported the return of 50,000-100,000 migrants during the lockdown. The total number of returning migrants, even under a preliminary assessment, is significant since the 2011 Census had recorded 2.19 crore people as new inter-state migrants across a decade since 2001.

Ministry of Skill Development and Entrepreneurship (MSDE) is making all out efforts to provide job and self-employment opportunities to migrant workers in their home states. It has chalked out a comprehensive plan to impart skills training and certification to three lakh migrant workers in these 116 districts across six states over the next 125 days under Garib Kalyan Rojgar Abhiyan and has been mapped for reverse migrants in the states of Bihar, UP, MP, Rajasthan, Jharkhand and Odisha for their skill sets. MSDE has advised all districts to provide details of local job opportunities and identify local establishments with employees more than 30 to ensure engagement of at least

Table 1: Status of Migrants returned to six States

No	States	Districts	Nos migrated (lakhs)	Share of States
1	Bihar	32	23.60	35.13
2	UP	31	17.48	26.02
3	Rajasthan	22	12.09	18.00
4	MP	24	10.72	15.96
5	Odisha	4	2.19	3.26
6	Jharkhand	3	1.10	1.64
	Total	116	67.18	100.00

Source : Ministry of Skill Development, Govt of India

2.5% (maximum desirable 15%) of workers as apprentices as per provisions of Apprenticeship Act. The plan is to train 1.5 lakh migrant workers under short term training (STT) and certify another 1.5 lakh under the recognition of prior learning (RPL) programme of the ministry.

b. Farmers' Plight

The nationwide lockdown came as a big shock to farmers, as it was the harvest season for the *rabi* (winter) crop. The lockdown created both a shortage of labour and equipment affecting harvesting of crops, like, paddy, wheat, pulses and oilseeds. Instances of abandonment due to damage to crops due for harvesting have surfaced in several places. Some places, crops were abandoned, while in others the harvest came after late by more than a month, with limited and more expensive labour, thus inflating the cost of cultivation of crops.

Although India had about 71 million tonnes of buffer stock of food grains to meet the eventualities, more than three times the minimum operational buffer in stock, long supply chains were severely affected with markets eventually running out of supplies, while food rotted in transit or never reached the point of sale when transport system came to a complete halt. The availability and access to farm inputs, like seeds, fertilizers, pesticides as important input requirements for the next crop season got disrupted. Post the *rabi* harvest, farmers were to prepare land for the *kharif* season in May. Covid-19 induced disruptions reduced production capacity for farm inputs and have also led to an increase in price, making these resources inaccessible to smallholder and marginal farmers in the country. While large landholding farmers and their farming businesses may be able to weather away these shocks, Covid-19 induced lockdown put enormous pressure on small and marginal land holders who work with limited resources and income. Resuming farming operations is key to ensuring harvest security to the small and marginal farmers.

II
Resilience of FPOs to *'Covid-19'*

Though FPOs were being promoted sporadically, Govt of India ushered in a focused thrust through announcements in the Union budget 2013-14 and assigned the responsibility to NABARD through setting up of "Producers Organization Development and Upliftment Corpus (PRODUCE) Fund of Rs.200 crore for the promotion of 2,000 FPOs. Presently, multiple agencies, along with NABARD,

Box-1

State Level Measures towards Direct Marketing during lockdown

- **Karnataka:** exempted Cooperative Institutions, FPOs for engaging in wholesale trade of agricultural produce outside the market yards;
- **Tamil Nadu:** exempted market fee on all notified agricultural produce;
- **UP:** allowed trading in e-NAM platform from farmgate, promoted issuance of unified license to processors for direct purchase from farmers, allowed FPOs to undertake procurement operations of wheat; relaxed rules for declaring warehouses/ cold storages as market-yards.
- **Rajasthan:** allowed direct marketing by traders, processors, FPO, PACS/ LAMPS declared as deemed markets.
- **MP:** allowed to set up private purchase centres outside the market yard by Individuals, firms, processors to purchase directly from farmers with an application fee of Rs. 500/-.
- **HP, Uttarakhand and Gujarat:** allowed direct marketing without requirement of any licence.
- **Uttarakhand**: declared Warehouse/Cold storage and Processing plants as sub-mandis.

Impact (i) **Rajasthan:** issued more than 1,100 direct marketing licences to processors during lockdown and farmers started selling directly to the processors. Out of more than 550 PACS declared as market-yards, 150 PACS have become functional for direct marketing and village traders are performing trade transactions successfully. (ii) **Tamil Nadu:** Due to market fee waiver, traders preferred to buy the produce from farmers from their farm gate/ villages. (iii) **UP:** direct linkages established by FPOs with farmers and traders thereby supplying produce to consumers in cities, saving wastages and directly benefitted farmers, facilitated linkages with FPOs and Zomato Food Delivery App thereby ensuring smooth distribution of veggies to consumers.

Sour.:https://pib.gov.in/PressReleasePage.aspx?PRID=1618270

Small Farmers Agribusiness Consortium (SFAC), Corporate houses, multinationals have undertaken promotion and nurturing of the FPOs across the country. Currently, there are around 6,500 FPOs functional in the country with 910 of them affiliated to SFAC) while around 4,500 are with NABARD. All these FPOs/FPCs are engaged in varied activities leading to aggregation to bring scale and other means of supporting primary producers.

As announced in the Union Budget 2019-20, Govt of India has issued guidelines for promotion of additional 10,000 FPOs in a cluster model across the country. Commission for Agricultural Costs and Prices (CACP) has approached the Government with a proposal to promote formation of commodity-specific FPOs under *"One-Product One-District"* initiative to improve backward and forward linkages, and convergence of FPOs promoted by various agencies. (Economic Times, 10 June 2020).

a. Direct Marketing: FPOs showed the Way

Measures were suggested to relieve the plight of farmers. FPOs started building resilience strategies through measured approaches for ensuring minimal business continuity on one hand and extending support to the local authorities by organizing campaigns for creating awareness on best practices for checking the community spread of the virus. Along with use of robust network of Farmer Producer Organizations (FPOs) for ensuring aggregation of output, wherever possible, easy availability of farm inputs including farm machinery through FPO-managed custom hiring centers was also strongly recommended (ICRISAT, 2020).

Government of India initiated concerted efforts to facilitate farmers in direct marketing and assure better returns through Cooperatives and FPOs and encouraged all the stakeholders and farmers. It also issued an advisory to the States to promote direct marketing without insisting for licensing procedures and facilitate the farmers in timely marketing of farm produce. In order to decongest wholesale markets & to boost the supply chain, following two modules under National Agriculture Market (e-NAM) have been introduced. (i) FPO Module: FPOs can directly trade with e-NAM portal. They can upload produce details from collection centers with picture/quality parameter and avail the bidding facility without physically reaching to the mandis. (ii) Warehouse Based Trading Module: Farmers can sell their produce from Warehousing Development and Regulatory Authority (WDRA) registered warehouses notified as deemed market, and do not physically bring the produce to the nearest mandis (GoI, 2020). Based on the advisory, various States undertook different measures towards direct marketing and impact was felt in States like, Tamil Nadu, Rajasthan & UP (Box-1).

b. FPOs in UP and Bihar : Turning Crisis into Opportunity

States like, Bihar in Eastern region, along with large population and high population density, but low resource base, have been at the receiving end, as far as the impact of Covid 19 is concerned. FPOs, in these States with grass root level networking have been coming up with resilient and mitigation measures of varied initiatives. FPOs, accounting for over 1,000 in number in Bihar and Uttar Pradesh, depending on the strength as well as outreach, through their mentor agencies, have taken up various initiatives for countering the challenges posed by the pandemic. The initiatives of FPOs in UP and Bihar is clubbed into the following broader heads:

a. *Social: Creating Awareness*

FPOs took upon themselves the task of making the general populace aware about the Covid-19 including the need for using masks and following basic hygiene & social distancing norms. It might sound too trivial, however, the task was enormous given the vast differentiated milieu of the rural population. Awareness campaigns, Village road shows, Nukkad Nataks, etc., were the popular platforms that led to creating a connect with the Covid 19 protocols. FPOs along with other CBOs took upon the task of distribution of masks, sanitizers and soaps to the resource poor target groups. Further, during Covid 19 led migrants' journey back home, FPOs in places like Sonbhadra in UP ensured that not only the migrants arriving in the villages were comforted with food and ration, but they also ensured that the migrants passing through their areas of operations also are extended basic amenities like food and water.

Innovative initiatives were adopted for providing opportunities to the migrants, ensuring that local livelihood eco system embeds aspirations of the returnees and matches their expectation to a certain extent. The availability or the potential additional labour force also leads to a skewing of demand and supply scenario and the same is also being tackled by agencies like REACT & MDSS in NABARD's various flagship project areas viz. *"Wadi"* and *"Watershed"* projects in twin districts of Mirzapur & Sonbhadra by setting up of common service centres for linking to larger markets in order to ensure timely and just returns to these groups.

b. *Economic: Injecting Livelihoods*

Many of the FPOs went ahead and ensured that livelihood options are put to business continuity mode by ushering in skilling on a large scale (Mritika FPC, Renukoot, UP) and making of masks for the district administration (Kamla FPC, Ghanshyampur Bihar). FPOs (Vindhya FPC, Mirzapur and Divyabhumi FPC, Agra, UP) introduced door step delivery of essentials including fresh vegetables aggregated locally from their members as well as other farmers.

c. *Easing operations : Going Digital*

FPOs also looked at streamlining their operations by making efforts towards adopting the slogan *"going digital"* with activities like linking with virtual markets, *e-commerce* websites, launching *app-based* services. These initiatives resulted in enabling and streamlining FPO's operations in a new normal digital ecosystem.

As has been acknowledged at various forum, Government documents and policies, FPOs have been acclaimed as a effective delivery of goods and services model with inbuilt sustainability and viability component. Directing good initiatives through these FPOs other than the scale of networking also adds to developing a faith in the community based, community owned organisations, leading to creation of appreciable "brand wealth" for these first generation community based organisations.

III
Successful Interventions: Case of three FPOs

Amongst the many such initiatives and outreach strategy described above, select FPOs and their members contributions and out of the box acts are being illustrated ahead.

a. Divyabhumi Agricrop Farmers Producers Company, Agra

Divyabhumi Agri FPC, established under NABARD's PRODUCE Fund, operates from Agra in UP. Farmers from potato producing areas of Agra were motivated to join the FPO for ensuring better farmgate prices to the farmers by an organization called Mehraj Global Educational Society (MGES), Agra. The FPO waged a strong battle much before the onset of the pandemic when they took on the district administration and the state machinery in permitting them to set up a parallel mandi for the FPO. The same could not fructify, as citing provisions of APMC Act, the district administration foiled the maiden bid of the Divyabhumi FPO. However, as the country faced the pandemic and efforts from the Government resulted in many new regulations including the deregulation on the necessity of routing farm produce through the mandis and paving the way for management of mandis by entities like FPOs in near future, members of Divyabhumi Agro FPC must have realized that their efforts and struggle have finally been rewarded.

Fresh tray – Direct marketing initiative:

Agra has also experienced the brunt of Covid-19 positive cases and going has been very tough for the farmers and other rural primary producers. One of the resilience initiative of the FPO "Fresh Tray" as direct marketing model has picked up pace. As per the sales figures reported by the CEO of Divyabhumi Agri FPC, Fresh tray is grossing approximately Rs 2.50 lakh to Rs 3.00 lakh per month with marginally low profits. Members say the low margins are adequately compensated by increased Farmers outreach and a valuable urban market connect. Early estimates put the gross profits at Rs 30000.00 at FPO level. The FPO have applied for mandi license and on receipt of the same, the FPO looks forward to setting up of FPO owned sub market along with bulk milk coolers and milk processing (cottage cheese unit).

The Primary Challenge for small farmers today is their inability to earn good profits from their produce owing to the difficult marketing process. FPO (Divyabhoomi) comprising more than 500 farmers from more than 20 villages nearby could aggregate and collectivize it and provide an open platform with the help of its coordinators who village wise formed clubs and streamlined the produce of the farmers to a common point thus making it assessable to the buyer as well as the producer.

b. Mritika Farmers Producers Company, Renukut , Sonbhadra

The Mritika FPC was constituted to provide a much needed platform to the farmers belonging to the "Wadi" project under Tribal Development Fund (TDF) of NABARD located in Renukut Sub division of Sonbhadra district and was extended support under the PRODUCE Fund. Over the formative years the FPC has been able to give voice to the aspirations of tribal farmers in terms of realizing the fact that what they grow is also marketable. Mritika FPC in collaboration with Central Sub Tropical Horticulture (CISH), Lucknow as well as Indian institute of Vegetable Research (IIVR), Varanasi has been quick to adapt various innovative technologies and advisories released by these national level specialized institution for the tribal farmers.

In times of Covid-19, the FPC witnessed huge inflow of migrants. The Board of Directors resolved to work closely with the administrative authorities. As a livelihood initiative, a skill training module was run during the first lock down period to add value to abundantly growing bamboo in the area by converting bamboo into utility items and bamboo furniture. The activity due to familiarity of the raw material became an instant hit amongst the tribal, more so with the returnees (returning migrants) from other states.

The challenge for the FPC was to provide a market for ensuring continuity of the activity. The FPC decided to target local households and advocated replacement of bamboo items (For one plastic chair is available from Rs 500 to Rs 1000 and the bamboo alternative was available in the range of Rs 350-400). The FPC came out with a rough demand of 50,000 pieces in the local vicinity. The FPC along with the promoting institution planning to reduce the wastage by gainfully using the bamboo dust and other left overs for making small decorative & utility items and vermi compost. The FPC has realized the potential of bamboo value chain and is actively working on it. The developers for launching of a suitable app for linking customers with the Wadi Farmers.

Table 2: Turnover and profits earned by Kamla Farmers Producers Company								
Year	Goat		Seed		Cereals		Total	
	Turnover	Profit	Turnover	Profit	Turnover	Profit	Turnover	Profit
2016-17	5.79	0.031	0.00	0.00	0.00	0.00	5.79	0.31
2017-18	13.18	0.14	0.00	0.00	0.94	0.14	14.,12	14.,08
2018-19	13.,59	0.39	3.28	0.10	3.39	0.51	20.,26	0.54
2019-20	27.59	0.82	13.62	60.60	6.,56	0.98	47.77	1.52
	60.25	1.37	16.90	0.70	10.89	0.16	87.94	2.24
Source : Annual report of the Kamla FPC, Ghanshyampur, Darbhanga								

CEO of the Mritika FPC says more than 500 migrant have been approached and skill training of more than 100 interested persons have been arranged. FPC is trying to reach out to the wholesale markets at Varanasi for ensuring sales. The Deendayal Hastshilp Kendra established by Govt of India at Varanasi is also being tapped for design development and product diversification. Alongside the FPC is also focusing on consolidating its business by roping in app

c. *Kamla Farmers Producers Company, Ghanshyampur, Darbhanga , Bihar*

Lalo Devi a resident of village “ Pauni” in Ghanshyampur block of Darbhanga, Bihar is known as “Bakri wali Didi” as she has now established a Goat farm with 50 goats. At the first instance, this seems very routine, however, when we come to know that Lalo Didi belongs to landless “ Mushaar (rat eating) community coming under Mahadalit classification of Bihar Government started the journey with just two goats, it gains importance. Lalo Devi is now one of the proud board members of Kamla Farmers Producers Company. Her livelihood model has ensured return of her husband from Delhi who worked as a migrant labourer. Kamla Farmers Producers Company with 2,534 women shareholders engages in goat farming for livelihood. The vast experience in goat rearing has allowed the FPO to earn modest profits over the years (Table 2).

In the Covid-19 pandemic, the FPC has arranged developing 500 women JLGs for establishing goat rearing as a livelihood model. NABARD has been approached for support as well as coordinating with the banks for provision of adequate bank loans to the JLG members.

IV
Conclusion

Covid-19 pandemic has thrown up stiff challenges across board and hit every sector hard. However, the pandemic opened vistas for agriculture and made FPOs resilient to Covid-19 bringing opportunities on board ranging from sustainable livelihood options, innovative business processes, application of digital platform, etc. The resilience of the community based organizations, like FPOs brings impetus to efforts by all stakeholders and allows rural ecosystem to act a launch pad for much needed “green shots” for recovery of the economy.

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GROUP MODE FOR SUSTAINABLE LIVELIHOOD OF SMALL FARMERS

B. B. Sahoo*

Abstract: *Agriculture forms the backbone of development of our country. Nearly half of the total work force in the country is engaged in agriculture for their livelihood. But it is a matter of concern that 86.2 percent of the total agricultural households own only 47.4 percent of the available land resources. Further, most of the farmers are exposed to a variety of constraints such as small size land, high risk, low/no credit, high transaction costs, small surplus and inadequate extension mechanism. As agriculture is a source of food security and livelihood for a vast majority of low income people, its performance assumes greater significance. In this context, the paper examines the experiences of Self Help Group Bank Linkage Programme (S-BLP) and Farmer Producer Organisations (FPOs) as the rays of hope for the economic wellbeing of the small farmers.*

Key Words: Risk, Transaction costs, Extension mechanism, S-BLP, FPOs

I
Introduction and Background

Smallholder cultivation is the hallmark of Indian agriculture. Revitalizing agriculture in general and the smallholding farming in particular is a pre-condition for achieving sustainable growth, food security and poverty reduction. As more than half of the work force in the country is engaged in agriculture, the GDP growth originating from agriculture is more effective than that originating from industry and services in reducing poverty and inequality. But it is a matter of concern that in spite of enormous potential, the performance of agriculture has remained disappointing.

Generally, small farmers in contrast to big farmers are exposed to a variety of constraints such as small size land, high risk, high transaction costs, small surplus and inadequate extension mechanism. Most of them practice either subsistence farming or operate in local markets due to the problem of connectivity and linkage with lucrative markets. As a result, investments in agriculture, level of technology adoption and crop yields remain low and so, the incentives to smallholders remain weak. Every year, the small farmers face risks such as low rainfall, price volatility and rising debts. During the

* Deputy General Manager & Faculty Member, Bankers Institute of Rural Development (BIRD), Kolkata; Views expressed in the article are of the author and not of the institution he belongs to. E-mail: bibhuti.sahoo@nabard.org

current year, the farmers in general and small farmers in particular have been facing new challenges due to COVID-19 pandemic.

As banks have relatively more control over supply of money in circulation, they influence the distribution of financial resources and play an important role in maintaining equity and growth. Access to financial services is one of the key elements for improving crop yield and farm income of small farmers. But the banks face difficulties in financing the smallholder cultivators due to small ticket size transactions and high maintenance/operating cost. Further, growing Non Performing Assets (NPA) of the banking sector and stringent regulatory norms come on the way of credit delivery in favour of small farmers. Against this background, an attempt has been made in this paper to understand risks and economic stress faced by small farmers, identify the constraints to their occupation and explore the possibility of collectivization or aggregation of their produce as an option for enhancing income and welfare, which would work as an effective coping mechanism during covid-19 like pandemics.

a. Rising economic stress and risks for small farmers

i. Trend in operational holdings/ area

While land supply is inelastic, population size is rising over time. As a result, the number of agricultural households has been increasing and per capita land holding is decreasing. Table-1 presents the growth trends of operational holdings and operated area in select years from 1970-71 to 2015-16. It can be observed from the table that the number of operational holdings increased from 71 million in 1970-71 to 157.1 million in 2015-16, but during the same period, operated area decreased from 162.3 million hectares to 157.1 million hectares. As a result, the per capita landholding reduced from 2.29 hectares in 1970-71 to 1.08 hectares in 2015-16. Category-wise distribution shows that per capita land size of smallholder cultivators decreased from 0.68 hectares in 1970-71 to 0.59 hectares in 2015-16, but during the same period, their share in total number of agricultural households increased from 69.9 percent to 86.2 percent. With a small land size, the smallholder cultivators have been operating at a sub-optimal level. This marginalization of agriculture also indicates increasing vulnerability of smallholders' access to critical production resources and un-favourable economies of scale for them. They struggle hard to get access to inputs, extension facilities and market.

Table 1: Select year-wise growth trend of operational holdings and operated area at All India level

Year	Unit	Marginal Farmers	Small Farmers	Other Farmers	Total Farmers
1970-71	*Number*	36200 (51.0)	13432 (18.9)	21379 (30.1)	71011 (100.0)
	Area	14599 (9.0)	19282 (11.9)	128437 (79.1)	162318 (100.0)
1980-81	*Number*	50122 (56.4)	16072 (18.1)	22689 (25.5)	88883 (100.0)
	Area	19735 (12.0)	23169 (14.2)	120893 (73.8)	163797 (100.0)
1990-91	*Number*	63389 (59.4)	20092 (18.8)	23156 (21.8)	106637(100.0)
	Area	24894 (15.0)	28827 (17.4)	111786 (67.6)	165507(100.0)
2000-01	*Number*	75408 (62.9)	22695 (18.9)	21828 (18.2)	119931 (100.0)
	Area	29814 (18.7)	32139 (20.2)	97483 (61.1)	159436(100.0)
2010-11	*Number*	92826 (67.1)	24779 (17.9)	20743 (15.0)	138348(100.0)
	Area	35908 (22.5)	35244 (22.1)	88440 (55.4)	159592(100.0)
2015-16	*Number*	99858(68.5)	25777 (17.7)	20092 (13.8)	145727 (100.0)
	Area	37960 (24.2)	36435 (23.2)	82747 (52.6)	157142 (100.0)

(*Figures in brackets are percentages of Total-Row-wise*)
Source: Agriculture Census 2015-16, Provisional Results, Ministry of Agriculture and Farmers Welfare, GoI, 2018

ii
Economic stress and risks forsmall farmers

Risk is an integral part of agriculture. Each day farmer confronts with different types of risks. The major covariate shocks that affect the welfare of small farmers are droughts, flood and water logging, frost and hailstorm, technology failure, diseases and pest attack, price instability, lack of financial services and accidental death of the main bread winner. These risks in agriculture can be classified into production risk, price risk, financial risk and personal risk. The Government policy and regulation also play an important role in either increasing or reducing farmers' risk**.**

According to the 10th Agriculture Census 2015-16, smallholders with less than 2 hectares of land account for 86.2 percent of the total 145.7 million agricultural households in our country, but own just 47.3 percent of the total 157.1 million hectares sown area. But agricultural households with more than 2 hectares land account for 13.8 percent of the households and they own 52.7 percent of the crop land. As a result, the per capital land of small and marginal farmers taken together comes to only 0.61 hectares in contrast to 4.12 hectares for other farmers.

b. Covid 19 & smallholder farmers

Plagues and pandemics[1] have remained existential threat to humanity. Our past experiences lend a hand on taking adequate measures to either end or reduce the impact of these infectious diseases. Some such examples which had taken life of many people world over are Spanish flu, HIV/AIDS, Swine flu, Ebola and Corona. The impact of a pandemic differs from another in terms of Clinical Attack Rate (CAR), Case Fatality Rate (CFR) and Mortality Rate. It also varies in terms of coverage of regions and attack on age groups and gender. The recent infectious disease is caused by a newly discovered Corona-virus, *SARS-CoV-2*. This virus has resulted in increasing the number of infected cases at a fast pace all over the world. More than 200 countries have been affected by this virus. The virus has adversely affected the entire economic system. It appears from its spread that the world would suffer a lot and bear a huge loss. Like other sectors, agriculture sector also suffers due to Covid-19. Some of the economic stress that small farmers and their households have been facing as a result of Covid – 19 are as under:-

[1] Epidemic is a disease that affects a large number of people within a community, population, or region. But pandemic is an epidemic that's spread over multiple countries. Endemic is something that belongs to a particular people or country.

- Limited access to crop inputs needed to maintain farming operation.
- No/less workers available for crop planting/harvesting, livestock and other such activities.
- Difficulties in selling the produce directly to consumers (forced to sale to intermediaries at a reduced price).
- Distress sale leading to loss of income that leads to increasing financial stress.
- Market fluctuation due to demand-supply mismatch.
- Difficulties in making payment to workers.
- Supply chain limitations.

Thus, the major challenges before small farmers are the following:

1. Small size landholding leading to dis-economies of scale.
2. Increasing risks such as price risk and production risk leading to price and yield instability.
3. Rising cost of cultivation and reducing farmers' share in market price of the crop produce.
4. Low capital formation, poor extension facilities and inadequate post-harvest services.

c. Lessons learnt from previous experiences

During farm operation, the farmers face economic stress and risks from multiple sources such as weather, disease, technology and price. In the absence of any back up, they assess risk, determine strategy to manage and adopt coping mechanism for their survival. According to Richard[2], the important short term strategies adopted by the farmers during unwelcome time include choice of cropping patterns to spread risks involving mixed cropping, cultivation of secondary crops, particularly root crops, off-farm income earning, selling productive assets, constricting food intake and migration. In a study in Southern Ethiopia, Regassa[3] suggested both short term and long term interventions to reduce the precarious situation resulted from human and climatic impacts. To give entitlement of food to the farmer, he suggested expanding safety net programmes and supplying cheap fertilizers for crop production in short-term actions. In long-term actions, his

[2]Richard, Longhurst: "Household food strategies in response to seasonality and famine", IDS Bulletin: Vol.17, No.3, pp27-35, July 1986

[3]Regassa, Nigatu: "Small holder farmers coping strategies to household food insecurity and hunger in Southern Ethiopia", Journal of Environmental Studies & Management, Vol.4, No.1, 2011

suggestions were to provide compulsory education, training on skill upgradation and enhancing the micro-financing efficiencies for taking up income generating activities.

Eriksen[4] et al (2005) in their study described coping strategies practiced by drought victims as principal and complementary strategies. According to them, households generally cope by engaging in a few activities. One is principal activity or the most favoured activity, followed by a multitude of less favoured activities that often complement each other. At the time of disaster, the principal activity substitutes the farm activities, which are otherwise the main sources of food or income. The subsidiary activities complement when the principal activity fails. When natural disaster occurs, the livelihood of farmers comes under severe pressure. Farmers with bigger assets such as bigger land size, income and education can probably cope with the unwelcome situation, which may not be possible for the farmers with lesser assets. According to Hung[5], there are three sources of risk. The first source entails unexpected emergencies or crises, such as the death of a family member or fire and the second risk involves events that have high costs, like funerals or marriage. The last source deals with structural aspects such as variation in weather and seasonality. In the event of shock or disaster, the household increases its assets and opportunities and thus, reduces vulnerability. According to Churchill[6], farmers, with low incomes, are often more vulnerable to risks. They often live in environments that create more risk towards personal well-being, such as bad sanitation and bad hygiene. There are three types of strategies to smooth income: risk avoidance, risk transfer and risk reduction. An example of avoiding risk is moving out of a disaster-prone area. Further, transferring risk to a third party can be done through insurance. Examples of risk reduction are the diversification of income and economic activities, and saving money or food. Micro insurance is a risk management strategy and it entails that the poor pay regular small amounts of premium as a compensation for the uncertainty of a high exceptional loss.

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The study of NABARD[7] shows that asset poor households find it difficult to cope with during sudden shock. In general, the small farmers adopt both precautionary and fostering strategies to cope with economic stress. The strategies, small farmers grow a variety of crops (multi-cropping), advance contract and stick to old market (price stability) and take up additional jobs such as dairy keeping and sheep/goat rearing (additional work) and

Table 2: Year-wise Progress of Self Help Groups – Savings linked & Loan outstanding along with NPA level

(Number in Lakh, Amount in Rs.Cr and NPA in %)

Year (End-March)	Savings linked		Loan outstanding against SHGs		
	Number	Amount	Number	Loans o/s	NPA level
2013-14	74.30	9897	41.97	42928	6.8
2014-15	76.97	11060	44.68	51545	7.4
2015-16	79.03	13691	46.73	57119	6.4
2016-17	85.77	16114	48.48	61581	6.5
2017-18	87.44	19592	50.20	75598	6.1
2018-19	100.14	23325	50.77	87098	5.2

Source: NABARD Annual Report, Various Issues

precautionary strategies are taken in anticipation of future risk and the fostering strategies are undertaken after the incidence occurs. While precautionary strategies are income smoothing, fostering strategies are consumption smoothing. Under precautionary under fostering strategies, they reduce family expenditure (cost cutting measures), migrate to towns/cities for work (migration) and work as daily labourers (wage earning). Those households who had diversified their activities were better able to spread their risks. To

7 Risks, Vulnerability & Coping mechanism by Agricultural Households in Dryland areas in Karnataka, 2013" published by National Bank for Agriculture and Rural Development (NABARD), Karnataka Regional Office, Bangalore

recoup the loss in income due to agricultural shocks, smallholder farmers were relying on additional activities such as dairy keeping, sheep/goat rearing, reducing family expenditure and borrowings from Self Help Groups, relatives & friends and moneylenders.

II
Collectivization for the survival of small farmers

Banking and financial inclusion go *hand in hand* in fostering economic growth and equitable distribution of financial resources in a more inclusive manner. The banking sector is widely recognised as one of the important drivers for livelihood support for the smallholder farmers. By reducing poverty and building prosperity, the banks help accelerate economic progress. The Government of India, State Governments and other institutions have been undertaking various initiatives for giving bank loan to small farmers. In this connection, the experience of NABARD in linking Self Help Groups to banks is an effective tool for financing rural women and men for various farm and non-farm activities. This S-BLP is a group-mode approach where bank loan is given to the group, which then offers credit facility to the members for their farm and non-farm activities without any collateral.

a. Self-Help Group Bank Linkage Programme (S-BLP)

The SHG programme helps in bringing disadvantaged and other weaker sections of the society into mainstream banking channel for their farm and non-farm activities. As a corporate strategy, it came in 1992. It has been built around the basic aspect of human nature – '*the feeling of self-worth*'. Over the last one and half decade, the Micro-Finance initiative of NABARD has passed through various stages and has assumed the shape of a micro finance movement in the country. As on 31 March 2018, 87.44 lakh Self Help Groups have been linked with banks with savings aggregating Rs.19,592 crore. Further, 50.2 lakh SHGs had loans outstanding aggregating Rs. 75,598 crore as on March 2018. This programme is cost effective and an effective tool for providing collateral free bank loan to farmers and others.

The SHGs manage their business in terms of bank linkage, savings collection, internal loaning, availing bank loan, timely repayment of bank debt and maintaining audited books of account. They work as micro-business units. As enabling poor households to take up income generating activities for livelihood involves capacity building, entrepreneurial ability, understanding market and potential mapping, NABARD introduced Micro Enterprise

Development Programmes (MEDPs) in the year 2006. The other objective of MEDP was to upgrade skill of the matured SHGs and transform them into micro entrepreneurs. But it was understood from the experience of MEDP that skill training will be successful when it is combined with other necessary ingredients such as right selection of trainees, hand-holding and motivation, marketing support and mentoring. Therefore, Livelihood Enterprise Development Programme (LEDP), a holistic approach form livelihoods and enterprise development for creating sustainable livelihoods among SHG members was introduced on a pilot basis in December 2015.

Table 3 – Major functions of the FPOs

Sl.No.	Type of services	Particulars of services provided by the FPOs/FPCs
1	Organizational services	Organizing farmers, catalyzing collective action, building Capacities, establishing internal monitoring systems
2	Production services	Input supply, facilitation of (collective) production activities
3	Marketing services	Transport and storage, output marketing, processing, market information and analysis, branding, certification
4	Financial services	Savings, loans, and other forms of credit, financial management
5	Technology services	Education, extension, research
6	Education services	Business skills, health, production
7	Welfare services	Health, safety nets
8	Management of resources	Water, pasture, fisheries, forests, soil conservation

Source: Hellin et al, 2009; Markelova et al,2009; Narrod et al, 2009; Rondot and Collion, 2007

Over the last two and half decades, the microfinance initiative of NABARD has enabled formation of more than 100 lakh SHGs with savings of Rs.23,325 crore and credit outstanding of Rs.87,098 crore. Major activities covered under the microfinance programme are awareness and innovation, formation and linkage of SHGs, digitization of SHGs, training and capacity building of the stakeholders, livelihood promotion and documentation. Up to 31 March 2019, Rs.68.9 crore from Financial Inclusion Fund and Rs.22.9 crore from Women SHG Fund were released as grant for different activities under the programme. Table 2 presents the year-wise status of SBLP for the last five years. Nearly 27 lakh SHGs availed credit support at an average of Rs.2.16 lakh per SHG from various banks during the year 2018-19. As a result of this savings-led, women-centric, door-step and self-managed microfinance programme, nearly 12.5 crore poor households have gained access to microfinance from the formal banking system. Studies conducted by experts show that the programme has helped achieving social and economic empowerment of the rural poor, especially women, causing significant up-scaling of social capital.

Studies have shown a very significant relationship between S-BLP and rural livelihood through social and economic empowerment of men and women in rural areas causing significant up-scaling of social capital and delivering financial services. Today, it has expanded to become the largest micro finance programme in the world in terms of its outreach and extending banking services to people hitherto un-served by the banking system. Most of the members of the SHGs are small and marginal farmers. As on 31 March 2019, more than 100 lakh SHGs are savings linked and more than 50 lakh SHGs are credit linked. Therefore, if the active members of these SHGs are nurtured in the field of production, processing and marketing, their employment, income and welfare will improve.

b. Farmer Producer Organisation (FPO)

The farmers in general and small and marginal farmers in particular face several constraints related to the small size of the operation. These include the inability to create a scale of economies, low bargaining power because of low quantities of marketable surplus, scarcity of capital, lack of market access, lack of knowledge and information, market imperfections, and poor infra-structure and communications. Against this background, a renewed interest in the farmer, producer organization and their company has developed in recent years. Much emphasis has been placed on its potential role in poverty alleviation. Most of the collective action literature emphasizes increasing economies of scale as well as the lowering of transaction and coordination costs as the main benefits of organizing farmers. The creation of countervailing power, access to capital markets on favourable terms, risk management, and income improvements are other major reasons for establishing farmers' organizations.

The Government of India has been taking up various initiatives to offset the bottlenecks faced by small farmers. One such initiative is Farmer Producer Organisation, which enables smallholders to organize themselves as collectives. The Government of India through an amendment enacted the Producer Companies Act in 2002 by incorporating a new Para IX A in the Indian Companies Act 1956. In the Union Budget 2014-15, the Hon'ble Finance Minister announced a sum of Rs.200 crore for creation of a Producers Development and Upliftment Corpus (PRODUCE) Fund in NABARD for building 2,000 Producers Organizations over the next two years. Further, the Ministry of Agriculture, Govt. of India through "Policy and Procedural Guidelines 2013" has considered Producer Companies under Part IX A of the Company Act as the most appropriate and legal form of FPO. In order to leverage the collective bargaining power of the producers organizations, it is required not only to work directly with the small and marginal farmers and their institutions but also FPOs and their promoting organizations for creating and enabling environment for smooth functioning of the producer organizations and help in overcoming impediments that they face on day to day basis.

Farmer Producer Organisation (FPO) is an entity formed by the primary producers, viz. farmers, milk producers, fishermen, weavers, rural artisans and craftsmen with the aim to improve the standard of their living and ensure a good status of their available support, incomes and profitability. It consists of collectivization of producers, especially smallholders so as to form an effective alliance to collectively address many challenges of agriculture such as improved access to investment, technology, inputs and markets. With advancement of science and technology, the mode of cultivation has also been changing. But the smallholders with tiny land and no/little knowledge on modern crop husbandry remain dependent on other farmers, input dealers, money lenders and intermediaries to manage their crop husbandry. Lower crop yield, increasing risk, weak bargaining power and reduced margin are found to be the major obstacles in the path of their progress.

The main aim of the FPO/C is to ensure better income for the producers through an organization of their own. Small producers do not have the large marketable surplus individually to get the benefit of economies of scale. Besides, in agricultural marketing, there is a long chain of intermediaries who very often work non-transparently leading to the situation where the producer receives only a small part of the value that the ultimate consumer pays.

Farmer groups are important institutions for the transformation of smallholder farming, increase productivity and income, thereby reducing poverty. the role of farmer organizations is to help smallholder farmers specifically, improve their position in the emerging value chains. The FPOs help farmers in production, harvesting, processing, procurement, grading, pooling, handling, marketing, selling and export of their primary produce. They render technical services, consultancy services, training, education, research and development for the promotion of the interests of their members also.

a. Status & Spread of FPO/C

Many organisations are involved in promotion of FPOs in India. Presently, there are about 6000 FPOs in the country and these FPOs are formed under the initiatives of Government of India including SFAC, State Governments, NABARD and other organizations. More than half of these 6000 FPOs are registered as Producer Companies and the remaining FPOs are registered under Cooperatives/ Societies, etc. The Small Farmers Agri Consortium (SFAC) and National Bank for Agriculture and Rural Development (NABARD) are two prominent organizations actively engaged in promotion of FPOs. While NABARD is an apex level developmental financial institution dealing with agriculture and rural development, SFAC, a society under Department of Agriculture, Cooperation and Farmers Welfare, Ministry of. Agriculture and Farmers Welfare, Govt. of India" acts as a single-window for technical support, training needs, research and knowledge management and to create linkages to investments, technology and markets.

b. FPOs: Fundamental to the wellbeing of the members

The FPO remains fundamental to the wellbeing of the members by lowering transaction costs of accessing inputs and output markets, adopting new technologies and obtaining agricultural information. It can be a Producer Company, a Cooperative Society, trust or any other legal form which provides for sharing of profits/benefits among the members. Under Companies Act 1956, a Producer Company can be formed by 10 individuals (or more) or 2 institutions (or more) or by a combination of both (10 individuals and 2 institutions) having their business objectives such as procurement, production, harvesting, grading, pooling, handling, marketing, selling or export for the benefit of the members. It enhances collective bargaining power of farmers and gives the members a bigger voice. In order to improve the situation of farmers, since independence of the country, the Government, both Central and State Governments, has been taking a series of initiatives. But the achievements fall short of the expectation and also the potential. Understanding the importance of FPO, the Government has been promoting the establishment of FPOs to improving social wellbeing through enhanced household incomes when farmers participate in collective action. The farmer organization can increase economies of scale, improve access to markets as well as aid access to new technological technologies. They can undertake other remunerative activities such as dairy keeping, sheep/goat/piggery units, vegetable cultivation, fishery etc. the FPO is thus the mechanism for achieving economies of scale and reducing cost of cultivation.

The FPO can become a medium for the empowerment, and advancement of farmers. Such organisations can help farmers gain skills, access inputs, form enterprises, process and market their products more effectively to generate higher incomes. Through capacity building, the farmers can access information needed to produce, add value, market their commodities and develop effective linkages with input agencies such as financial service providers, as well as markets. These organisations can achieve economies of scale, thereby lowering costs and facilitating the processing and marketing of agricultural commodities for individual farmers. It can also assist the members purchase inputs and equipment, meet quality standards and manage the drying, storage, grading, cleaning, processing, packing, branding, collection and transportation of produce. Organized farmers have greater bargaining power than individuals and are able to negotiate better with other more powerful market players to ultimately increase the profits that accrue to farmers rather than intermediaries and buyers.

To offset the bottlenecks, they need a level playing field so that they can compete and fight back. Therefore, there is a gradual recognition that collectivization of farmers into FPO can be one of the solutions for the smallholders. If they are organized into groups, crop production, pest and disease management, post-harvest handling, processing and marketing in group approach will lead to their empowerment. Collective purchase of inputs, farm implements and aggregation of produce and value addition would increase their bargaining power, employment and income. This may induce the members to go for growing crops for market. In short, farmer organisation offers the following benefits:

- brings farmers together and gives them strength and confidence.
- provides a platform to collectively voice their opinions and concerns.
- helps the members in negotiating for a better position.
- supplies crop inputs to members at a reduced rate.
- offers financial, technical and extension support.
- improves farmers' capability by demonstration, training and exposure visit.
- aggregates the crop produce and improves the bargaining power.
- helps in reducing distress sale by providing pledge loan facility.
- provides additional employment by adding value to the produce through cleaning, grading, processing and packing.
- links with processors, wholesaler and consumer for direct sale.

c. Challenges and Issues faced by the FPOs

Although FPOs play a very positive role in increasing net income of farmers through informed decision making, improved access to inputs and agro-services, institutional credit, marketing facilities and enhanced efficiency in the farming operations, they face many challenges. Some of the important challenges confronted by the FPOs are as under:

- Lack of technical Skills/ Awareness.
- Lack of/ Inadequate Professional Management.
- Weak Financials.
- Inadequate Access to credit.
- Lack of Risk Mitigation Mechanism.
- Inadequate Access to Market.
- Inadequate Access to Infrastructure.

d. Strengthening the FPOs

Farmers in general and small farmers in particular are leading a very difficult time due to a variety of factors including the present Covid 19 pandemics. To offset the situation and revitalize Indian agriculture, the Government policy must focus on such activities which would enhance farmers' income by improving production, processing and marketing of agricultural commodities. The performance of FPOs shows signs of hope for improving the livelihood of small farmers. They are now considered to be the way forward for boosting agricultural growth. Some of the measures suggested for improving the situation are as under:

- **Necessary** amendment of APMC Act to treat the country as a single market for agri-produce without any restriction on commodity movement and enable FPOs to sell their produce to consumers and others directly without payment of mandi fee.
- **Convergence** of resources for creation of agri-Infrastructure at FPO level for value addition such as cleaning, grading, sorting, processing, branding and transportation of agri-commodities and also Custom Hiring Centers.
- **Provision** for procurement of agricultural commodities through FPOs under MSP Scheme.
- **Encourage** FPOs for private equity participation for their viability and sustainability.

III
Conclusion

Agriculture has changed so also banking. To adapt to the changes, farmers in general and small farmers in particular need education, skill, capital and market. With time, per capita land size has been decreasing and consumers' preferences/tastes and market signals have been changing. Rising NPA of the financial institutions dissuades bankers to finance individual farmers and entrepreneurs. Under the above epithet, the recent Self Help Group Bank Linkage Programme and Farmer Producer Organisations are found to be very useful for improving the knowledge, skill, credit availability, processing and value addition, marketing and above all, empowering the small and marginal farmers. The findings of many studies have shown very positive result of different group-modes on additional employment, income and empowerment of the small farmers. It is therefore suggested to focus more on group-mode of activities in farm and non-farm sector for the millions of small and marginal farmers.

Sustainable Livelihood Initiatives in Fisheries Sector: Role of NABARD

Jayanta Kumar Samal *

Abstract: *Fisheries as a sub-sector of primary sector, in terms of nutritional security, provides livelihood for 1.61crore population, has been recognized as a powerful income and employment generator. Nabard's Natural Resource Based Sustainable Business Model, Livelihood Security of Fishers with Climate Chang, Livelihood deepening through FPOs are some of such initiatives for strengthening livelihoods among workforce propagating fisheries.*

Key Words: Fisheries, Business Model, Climate Change, Sustainability, FPO.

I
Introduction & Background

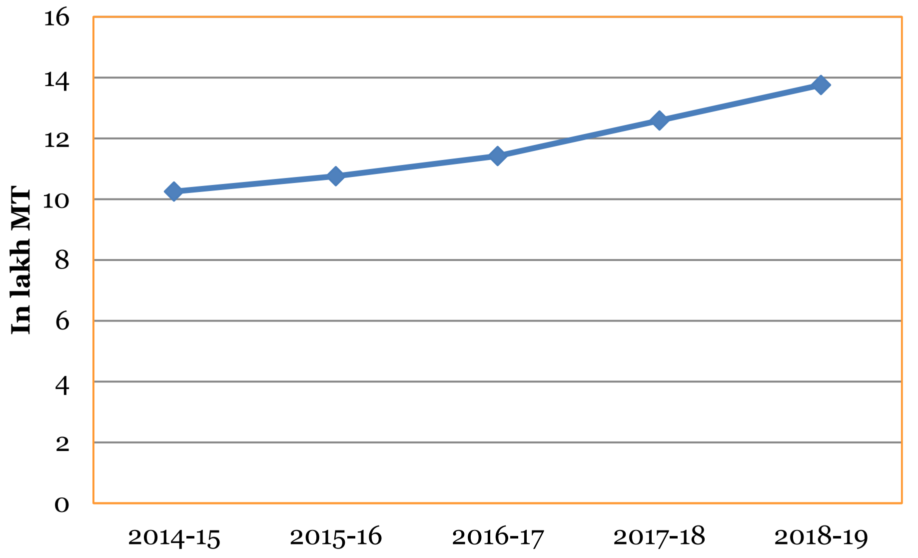
National bank for Agriculture and Rural Development (NABARD) with its mission of ensuring sustainable and equitable Agriculture and Rural development has been striving to achieve inclusive growth through credit and non-credit interventions. In this direction, judicious utilization of natural resources for sustainable livelihood of the mass has been at the core of its various initiatives, in the form of policy, planning, institution building, promotional and supervision. In the agrarian economy of India, contribution of allied sectors in the livelihood of the rural masses is significant. Among them, Fisheries sector has been recognized as a powerful income and employment generator for the large section of economically backward people.

II
Status of Indian Fisheries Sector

India, with a total fish production of 13.7 million metric tons (2018-19) is the second largest fish producer in the world. Of this, 65 per cent comes from inland sector. In terms of production and share in agricultural GDP (5.23% in 2018-19), the sector has seen a steady growth. Year-wise production for last 5 in the country is given in Fig-1.

*Deputy General Manager in NABARD and presently working in Bankers Institute of Rural Development (BIRD), Kolkata as a Faculty Member. The views expressed in the article are of the author and not necessarily of the institution he belongs to.

Fig - 1 Year-wise fish production



In terms of its contribution to nutritional security and livelihood support for 1.61crore population, Fisheries as a sub-sector of primary sector, need a special mention. In recent years, the sector has experienced a growth of 10.9 per cent (2014-15 to 2018-19) which more than that of agriculture. However, considering its immense potential and possibility in enhancing the present production level of 13.76 MMT to 22.0 MMT by 2024-25 (target under Pradhana Mantri Mastya Sampada Yojana), Government of India contemplates to bring a Blue Revolution in the country. In order to ensure inclusive growth of the sector, among others, this revolution has to maintain sustainability and to address climate change induced issues. Farther, the present state level production in the country does not commensurate with their respective potential (Fig-2).

As a Development Financial Institution, NABARD initiated various sector specific measures for sustainable and inclusive development in fisheries sector. A few such initiatives are furnished below:

III

NABARD Initiatives ensuring Sustainable Livelihood in Fisheries

a. Natural Resource Based Sustainable Business Model:

In joint collaboration with Kfw and GIZ, NABARD piloted cluster based, community managed integrated fisheries models under Umbrella Programme of Natural Resource Management (UPNRM). With a shift from project to programme approach and follow up of five guiding principles (pro-poor, environmentally sustainable, Community Participation, Good Governance and Integrated Need based approach), these business pilots linking natural resources management with livelihood improvements were implemented in various states. A holistic approach in capacity building, effective technology transfer and above all optimum utilization of the natural resources proved business proposition as well as sustainability of this model in a few clusters of various states. Horizontal and vertical expansion of the activity in programme area, assured income

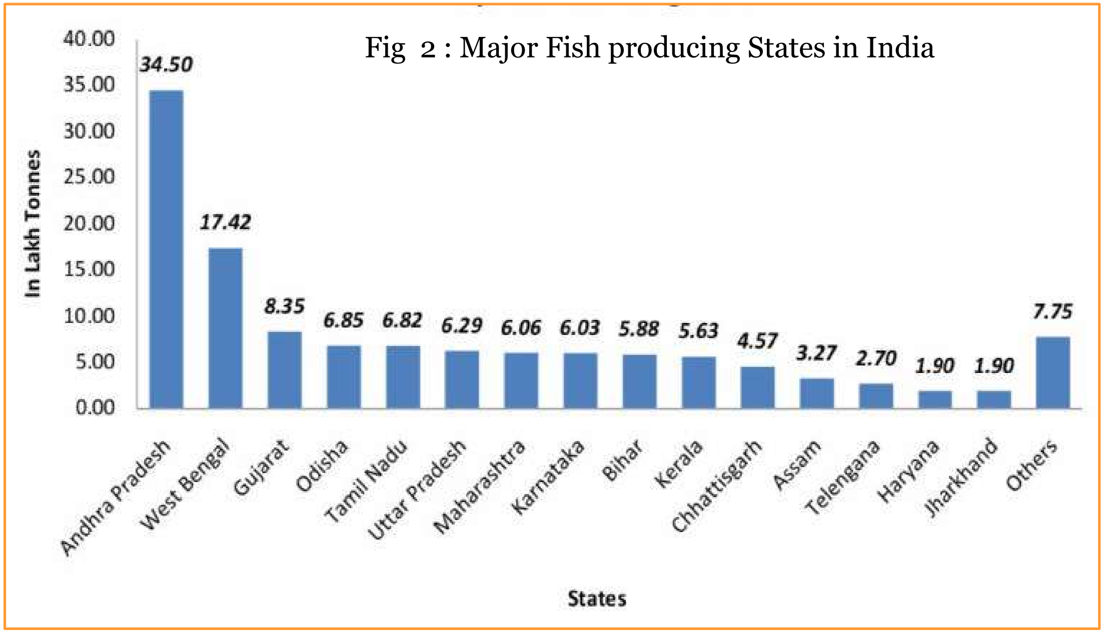


Fig 2 : Major Fish producing States in India generation and above all self-sustenance speaks about its sustainability. Expansion in area under farming, better price realization, empowerment of community in furthering the activity etc in the post-exit period of Channel Partners (CP), speaks volume of this model.(Exhibit-A)

b. Promoting Adaptation to Climate Change for Livelihood Security of Fishers:

NABARD initiated measures to address climate change induced challenges in agriculture and allied sectors. As National Implementing Entity (NIE) for three funding mechanisms, arrangements were made to channelize national and international funds for promoting adaptation and mitigation measures through implementation of projects prioritized by State Action Plan on Climate Change (SAPCC). Fisheries Sector is no exception to the vulnerability of climate change risk. As the livelihood of 1.61 crore socio-economically backward population in fisheries sector is vulnerable to climate risk, measures were initiated to develop adaptation level of the community. Here is an account of a few such initiatives of NABARD to address climate issues in fisheries sector.

Climate Change induced rise in Sea level poses threat to the life and livelihood of coastal fishers. In order to develop adaptation to such threat, a climate change project with 0.69million US$ support of Adaptation Fund, was implemented in Krishna district of Andhra Pradesh. Under the project, restoration of mangroves and establishment of Integrated Mangrove based Fish Farming System were taken up. The project aimed at providing

Exhibit A

Sustainable livelihood

***Initiative**: Converting marshy waste land into income generating asset, technology dissemination.*
Chanel Partner: Kalong Kapili

***Location**: Dimoria, Kamrup, Assam*

***Funding**: Rs.23.50lakh under UPNRM to 30 farmers*

***Outcome:**25 acre marshy land reclaimed to fish ponds.*
Production level increased from 675kg to 3750 kg per ha.
Increase in farm gate price from Rs.100 to Rs.150 a kg.
Post exit of CP, area e expanded to 64acre.
Become a centre for technology dissemination

Physical security against rise in Sea level as well as livelihood security. Similar intervention for building adaptation capacity of small Inland Fishermen community for climate Resilience and Livelihood Security was implemented in drought prone areas of Madhya Pradesh.

The fishers around the Gulf of Mannar are adapted to marine based livelihood. The climate induced negative impact on marine ecosystem/ marine biodiversity had a bearing on the sustainability of their livelihood. With an aim to ensure sustainability of this livelihood, NABARD channelized fund for a climate change project on rehabilitate of coastal habitats and biodiversity in this climate sensitive coast of Tamil Nadu. The rehabilitation of coral and sea grass, artificial deployment of reef etc. led to restoration of destroyed habitat. The effort supported climate resilient livelihood of 6900 fishermen.

In Kerala, a project to scale up climate resilient farming practice to ensure food security and livelihood was implemented. Under the project, rehabilitation of cultivation area to grow Pokkali and rejuvenating the Kaipad method of growing rice alternate with aquaculture in brackish water, were promoted. Implementation of this project supported climate resilient livelihood for 250 coastal households through traditional rotational farming of paddy and shrimp in 600 ha.

In Assam, human animal conflict is an issue in Kaziranga National Park and Tiger Reserve. In order to address this issue, NAFCC assisted (Rs.24.567 crore) project on Management of Ecosystem in Kaziranga National Park by creation of climate resilient livelihood for vulnerable communities through organic farming and pond based Pisciculture is under implementation. Under the project, marshy lands in the fringe areas of the national park are to be disilted to promote pond based fish production and organic farming. The intervention will lead to not only creation of sustainable livelihood for 2365 people but to reduce the man-animal conflict in this eco-sensitive area.

c. Need-based Technology Dissemination for Sustainable Production System:

Optimum and cost effective resource utilization by resource poor people requires (among others) effective transfer of need based technology. Application of these technologies align to the local condition to a great extent promote sustainable production. In this direction, NABARD has been supporting effort of Channel Partners in transfer of technology under a programme called *Capacity for Adaptation of Technology (CAT).* Financial support is provided to bridge the gap in need based technology through linkage of Agriculture Universities, KVKs, Training establishments, commercial Farms etc. (both within and outside the state) with potential producers. With the transfer of technology on soil water quality management of ponds, training on rearing of quality fish seed; expenses towards supplementary feed is reduced on account of optimum utilization of primary production of the water bodies, Further improvement in productivity due to availability of quality seed at doorstep is noticed . These need based technology of local importance may lead to development of a sustainable livelihood for small fishers in remote areas.

d. Deepening the Livelihood FPO Way:

Aggregation, both at input and output level, proved effective in transforming small producers to a business proposition. This effort of NABARD (since 2014-15) was up scaled through establishment of a dedicated PRODUCE fund by Government of India for promotion and nurturing of Producers Organisations. Under this intervention, a few POs with major activities/produce linked to fisheries sector were promoted. These groups have taken up aggregation of produce of small fresh water fish farms in various States. The collectivization resulted in better price realization (from Rs.100 to Rs.125 per Kg), creation of own marketing channel, reduction in input cost, saving of manpower and empowerment for bargain. The result, there is an increase in net income of small producers.

Exibit: B

Fingua Anchalik Fish farmers PO
Location*: Barpetta Assam*
Member*: 137*
Major produce*- Fresh water Fish*
Outcome:
Out of clutches of middleman
Input aggregation
Produce aggregation
Own marketing outlet
Technology dissemination

Conclusion

Livelihood improvement through capacity building, asset creation, establishing income channel and above all socio-economic empowerment of the mass has been the thrust of NABARD. In shouldering this challenging, various developmental models were developed. These models have proved their efficacy in addressing issues linked to the life of the rural masses. Upscalling of these models on the line of SHG-BLP would realize the true potential of the sector. With the synergy in effort of stakeholders, this sector have the potential to play a leading role in generating employment at local level for Covid-19 induced reverse migrated workers. The task is gigantic, but we are committed to strive still the last man in social ladder has a sustainable livelihood.

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Ph.: 040-23241155

Corporate Office
Ground Floor, D Wing, NABARD HO
C-24, G Block, Bandra-Kurla Complex
Mumbai - 400051, Maharashtra
Ph. : 022-26539486

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Registered Office
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Phone- 044-28270138, 044-28304658
E-mail- finance@nabkisan.org

Website
www.nabkisan.org
Web-Portal
krishimanch.nabkisan.org