



Management

FINANCING SMALL FARMERS FOR INDIA'S FOOD SECURITY

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ABSTRACT

According to the Global Hunger Report, India continues to be among nations where hunger is "alarming". It is most disappointing that despite high economic growth, the hunger index in India between 1996 and 2011 has insignificantly improved from 22.9 to 23.7. National Sample Survey Organization data revealed that the average per capita food expenditure per annum during the period from 1993 to 2010 increased only by 0.2 % annually in rural India and declined by 0.1% in the urban areas. At any given point of time, the cereal intake of the bottom 20% people in rural India which is engaged more in manual work continues to be at least 20% less than the cereal intake of the top decile of the population, despite their better access to fruit, vegetables and meat products. Endemic hunger continues to afflict a large proportion of the population. Agricultural Census [2010–11] revealed that out of 138.35 million operational holdings in India as high as 85% (which account for 44.6% of the total cultivated area) are small and marginal farmers [S&MFs] owning less than two hectares. This, therefore, characterises India's agriculture a small-scale-farming. Average size of small-holding is only 0.61 hectare whereas overall average size of holdings declined from 1.33 ha in 2000–01 to 1.15 in 2010–11. The role of S&MFs in boosting food output and reduction of poverty is well recognized. Therefore, the future of sustainable agricultural growth, food security and poverty reduction in India depends on creating environment that enables huge number of S&MFs to easy, hassle-free and reliable access to institutional credit. Against this background, this article analyses the performance of Government-sponsored and Banks programs aimed at financing S&MFs and suggest enabling measures to achieve 8% target of credit to S&MFs within existing 18% credit to agriculture by 2017 as recently prescribed by the Reserve Bank of India [RBI].

Keywords:

Food Security, Financing Farmers, Agricultural, hunger.

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1. INTRODUCTION

The Food and Agriculture Organization [FAO] of the United Nations report, “ The State of Insecurity in the world 2008” revealed that the overwhelming majority of the hungry live in the developing world, 65% of them just in seven countries, namely India, China, the Democratic Republic of Congo, Bangladesh, Indonesia, Pakistan and Ethiopia. The worst affected are landless families. According to the Washington based International Food Policy Research Institute, India is home to the world’s largest food insecure population with more than 200 million people facing hunger and it ranks 66 out of 88 countries. Malnutrition, as measured by underweight children below three years is estimated at 45.9% as per National Family Health Survey [2006]. Diets of about 80% of the rural population contain less than half of the normal requirement of vitamins.

According to the NSSO, at the national level, 1.9% households in India suffer from hunger. Dr. Manmohan Singh then Prime Minister of India announced in his nation’s address on Independence Day in 2005 that “*nobody will be allowed to go hungry*”. It may be recalled that FAO as back as in 1974 had declared that by 1984 “*no child, woman or man should go to bed hungry and no human being’s physical or mental potential should be stunted by malnutrition*” and acknowledging the fact that “*food is a requisite of human survival and well-being and a fundamental human right*” the FAO in October 1979 agreed to designate October 16 [the date of FAO’s Foundation] each year commencing from 1981 as the “*World Food Day*”. This amply points to the need now more than before for focused attention to boost agricultural growth rate in India when already a period of four decades has elapsed since the FAO has committed to wipe out hunger.

2. SIGNIFICANCE OF FOOD SECURITY

Per capita *availability, leave alone actual consumption* of food grains and other essential food products in India is below the world average and significantly lower than in developed countries. Acknowledging the fact that the food is unaffordable for a large number of the poor in India, the Union Government by an Act of Parliament in 2013 enacted the National Food Security [NFS] Act. The NFS Act mandates to provide each person, including the pregnant women, children and the poorest households, per month five kg of coarse cereals or wheat or rice at Rs.one, two and three a kg respectively. The NFS Program is expected to benefit estimated 810 to 840 million beneficiaries, the largest population in the world. Around 62 million tons of food grains are expected to be distributed annually under the NFS Program through country’s massive network of about 500,000 ration shops under the existing Public Distribution System or where possible through Direct Benefit Transfer scheme. The food subsidy under the NFS Program is likely to cost the nation annually about Rs.1310 billion including Rs.80 billion for incidentals like setting up food commissions at the Central and State levels and in setting up grievance redress mechanisms. Under the NFS Act, the Expert Committee has estimated procurement and distribution of food not less than 63.98 million tons in 2013-14, rising to 73.98 million tons by 2016-17 against the envisaged procurement of 57.61 million tons in 2013-14.

3. NEED FOR AGRICULTURAL DEVELOPMENT

For India, agricultural development at 4% annual growth rate has been a *sine qua non* to provide livelihood to millions of small, marginal and tenant farmers, oral lessees, share croppers and agricultural laborers in particular; generate employment; alleviate poverty; guarantee food and nutritional security to the country's increasing population. According to the World Development Report [2008] "*the GDP growth arising from agriculture is almost four times as effective in reducing poverty as GDP originating outside the sector*". India's ninth Five Year Plan [1997-2002] acknowledged that agricultural growth has the highest potential both for reduction in poverty and regional imbalances. A number of developed countries and developing countries like Australia, New Zealand, Malaysia and Taiwan and the State of Punjab in India have demonstrated that highly productive agriculture can lead to just as high standards of living as high levels of industrialization with more favorable impact on poverty. Growth of agriculture is an important factor in containing inflation and optimizing agricultural wages. Dr. Manmohan Singh, India's former Prime Minister once emphatically said "*Inflation hurts the weakest section of the society the most and there can be no better anti-poverty program than developing agriculture, which has potential to arrest rising food prices and contain inflation*".

4. INVOLVEMENT OF S&MFs

The FAO had declared the year 2014 as the "*International Year of Family Farming*" [IYFF] to create awareness among all stakeholders, review the current status of family farms, evolve policy and programs and strengthen institutional infrastructure, among others, that enable family farms to become food-secure and viable. According to the FAO's Director-General, Graziano da Silva, "*a family farm is managed and operated by a family and predominantly reliant on family labor, including that of both women and men*". In the Indian context, marginal farmers [owning less than one hectare] who share 67% in total number of holdings and 22% of cultivated area aptly fit in the definition of family farms. The small-holder families, who constitute about 50% of the national population, comprise almost 60% of nation's hungry and poor. Notwithstanding S&MFs best efforts to increase crop-productivity and incomes, most families that operate holdings below 1.0 hectare are *net purchasers* of almost all food items. This declaration of IYFF presented opportunities to the rural financial institutions of India to accelerate the flow of credit to S&MFs accompanied by improving the effectiveness of the central and State Government's role to make S& MFs financially viable and enable them to contribute to India's food-security by 2020.

5. INDIA'S AGRICULTURAL SCENARIO

- Agricultural Census [2010–11] revealed that out of 138.35 million operational holdings in India as high as 85% (which account for 44.6% of the total cultivated area) are less than two hectares characterising India's agriculture a small-scale-farming. Average size of small-holding is only 0.61 hectare whereas overall average size of holdings declined from 1.33 ha in 2000–01 to 1.15 in 2010–11.
- The share of agriculture in India's GDP progressively declined from 41% in 1972-73 to 17.60% in 2014-15 but population depending on agriculture as the main source of livelihood declined to 48.9% from 59.9% between 1999-00 and 2011-12.

- Agricultural growth rate was 1.2% in 2012-13 which increased to 3.7% in 2013-14 but again fell to 0.2% as against country's 7.3% economic growth rate in 2014-15.
- Food output in 2014-15 was 252.02 million tons significantly lower than 265.04 million tons in 2013-14 and 257.13 million tons in 2012-13.
- Growth rate of food output declined marginally from 2.19% during 1990-91 to 1999-00 to 2.11% during 2000-01 to 2013-14 whereas growth rate of yield per hectare significantly declined from 2.40% to 1.70% during the said period.
- Though gross cropped area and net sown area increased to 195.25 million hectares [MHA] and 140.80 MHA till 2011-12, area under food grains has remained almost stagnant, at 120.4 MHA over four-and-a-half decades.
- Hunger Index for India was 17.8 in 2014 which in a decade declined from 25.5 in 2000.

In view of the following facts, for India 4% annual agricultural growth rate and sustained development of agriculture acquires focused attention.

- According to the United Nations World Water Assessment Programme [2015], while globally by 2050 the agricultural sector needs to produce 60% more food, the developing countries including India will need to produce 100% more
- Sustainable Development Goals adopted by the United Nations General Assembly in September 2015 stipulates developing countries, that include India, to develop agriculture and eliminate hunger by 2030
- World Bank report 2008 revealed that globally GDP growth originating from agriculture is at least twice as effective in reducing poverty as that which originates outside agriculture
- The role of S&MFs in boosting food output and reduction of poverty is well recognized. Therefore, the future of sustainable agricultural growth, food security and poverty reduction in India depends on creating environment that enables huge number of S&MFs to easy, hassle-free & reliable institutional credit.

6. CREDIT POLICY & PROGRAMS

India has adopted multi-agency approach for dispensation of agricultural/rural credit which comprises cooperative credit institutions [short & long-term], scheduled commercial banks [public & private sector] and regional rural banks. These rural financial institutions have extensive network of banking and credit outlets in rural areas. The credit policy and programs specifically evolved to enable S&MFs to augment country's food output in general and ensure food security in particular are briefly highlighted as under.

Government of India appointed the All-India Rural Credit Survey Committee which made far reaching recommendations in 1954 to strengthen agricultural credit cooperatives and expand the role of the State Bank of India & its seven Associate Banks to finance agriculture. Government policy in early 1950s till mid-1960s was to increase food output in order to avoid substantial import of food. In this process, Government developed seed-fertilizer-irrigation technology which did usher in Green Revolution. Of course, this increased food output but did not benefit S&MFs. Government, therefore, conceptualized and implemented as pilot projects by establishing two development agencies, viz. Small Farmers' Development Agency [SFDA] and Marginal Farmers & Agricultural Laborers' Development Agency [MFALDA] in late 1960s

aimed at improving their farm productivity substantially when technology was already available and 14 private commercial banks were nationalized with a mandate to provide credit to agriculture on priority basis in 1969.

Government, also, directed nationalized banks to finance Primary Agricultural Credit Societies in rural areas where cooperative credit institutions [which were financing agriculture assigning priority to S&MFs] were financially, managerially and administratively weak.

In 1973-74, Government initiated policy to establish Farmers' Service Societies [FSS] for S&MFs in SFDA areas to facilitate and provide linkage between credit and services through single institution, viz. FSS so that S&MFs need not to run from pillar to post to secure various services for developing agriculture. Services included purchase/supply of production inputs [seeds, fertilizers, pesticides etc.], bank credit for investment in land development, sinking irrigation wells, installation of diesel/electric pump-sets, purchase of modern farm equipment, creating storage facilities and marketing of produce.

On 2nd October 1975, the Government by an Act of Parliament established the Regional Rural Banks [in addition to existing cooperatives and commercial banks] to provide banking & credit facilities to S&MFs in particular, among other rural households, to improve agriculture and rural economy and since mid-2000s RRBs have been amalgamated as a part of reform process.

Till October 1980, SFDA was the premiere organization to improve the productivity of small farms. The policy was to support them to exploit their production potential and improve income by adopting yield-enhancing technologies through Government and institutional intervention. The program was to make small farms financially viable by adopting modern technology, easy access to credit & production inputs and using irrigation facilities wherever feasible. The SFDA provided capital subsidy for investment in agriculture and animal husbandry activities to the extent of 25% to small farmers and 33.33% to marginal farmers of the total cost of the asset acquired/created as a motivating factor to the beneficiary and margin required for institutional credit. While out of 1818 SFDA in the country many made appreciable progress, the limiting factors inhibiting the targeted achievements included [i] ineffective inter-institutional coordination and lack of involvement/participation of beneficiaries for planning and implementing the program. [ii] inadequate appreciation of the need for training of implementing personnel for capacity building [iii] beneficiaries were more interested in availing subsidy [misusing subsidy] rather than actually creating and maintaining assets to generate employment and income. Consequent upon this, well-off farmers got the subsidy and non-repayment of bank credit by beneficiaries resulted in larger defaults. [iv] Government measured progress in terms of number of beneficiaries assisted [irrespective of their eligibility] and amount of subsidy released rather than number of assets created, employment and income generated. [v] absence of systematic & comprehensive monitoring, review and mid-term appraisal & correction mechanism did not give the correct picture of ground realities [vi] lack of field studies, detailed planning and integration with other on-going supporting programs resulted in low level of achievements [vii] planning without seeking participation of beneficiaries and devoid of backward and forward linkages [viz. absence of linking credit and subsidy with supply of quality assets, production inputs, technology and marketing, among others] did not yield expected results. Subsequently, from 2nd October, 1980 these SFDA and MFALDA were merged in the

newly created District Rural Development Agency [DRDA] to plan and implement Integrated Rural Development Program [IRDP] aimed at removing the rural poverty and unemployment of the identified households below poverty line [BPL] . Thus, the focus of assisting S&MFs was considerably diluted as the IRDP targeted a wide range of beneficiaries and activities. From April 1989, RBI introduced the concept of Service Area Approach & formulation of Potential Link Credit Plans district-wise to substantially enhance quality & productivity of lending in the assigned Service Area comprising five to 15 villages. Thus, for rural financial institutions focus was shifted to integrated economic development of service area where low priority has been accorded to financing S&MFs.

7. CREDIT DISPENSATION

Institutional credit: Credit is a *sine qua non* to augment working capital required for seasonal agricultural operations and more importantly for long-term investment on farms. According to the All India Rural Debt & Investment Surveys of the RBI, with the progressive institutionalization of rural credit delivery system, the share of outstanding agricultural credit from institutional sources increased modestly from 10.2% in 1950, to 20.9% in 1960, 32.0% in 1970 and significantly to 56.2% in 1980 and then marginally to 66.3% in 1990. But then it declined to 61.1% in 2000 and further to 56% in 2012. This has been attributed to the reappearance of professional moneylenders whose share increased from 19.6% to 28.2%. It did increase marginally to 64% in 2010 but never reached to the level of 66.3% which was attained 20 years ago in 1990. Thus, Institutional credit, to replace informal credit obtained by S&MFs at exorbitant rates of interest, progressively improved till 1990 but lost its momentum since then. Consequently, the non-institutional sources have reappeared on the scene at a time when S&MFs do need more & more credit to purchase costly production inputs & invest in creating farm assets.

Field experiences revealed that inability of S&MFs to access hassle-free institutional credit has benefitted farmers with larger holdings from the credit expansion policy and programs. According to NABARD, percentage of indebted agricultural households with farm size 1.01 to 2.00 hectares [S&MFs] marginally increased from 51.0 in 2003 to 55.7 in 2013 whereas those with 2.01 to 4.00 hectares significantly shot up from 58.2% to 66.5%, and those with 4.01 to 10 hectares from 65.1% to 76.3%. Disappointingly, those with less than 0.01 hectare declined from 45.3% to 41.9% whereas those with above 10 hectares substantially increased from 66.4% to 75.7% during the period. .

8. CREDIT TO S&MFs

- In 2011, 34.70 million [46.28%] out of the 74.97 million S&MFs had access to credit either from formal or informal sources. Banks, as major sources of loan for all farmer-households, accounted for 36% outstanding loan amount.
- Government in 2004-05 directed scheduled commercial banks [SCBs] to double the disbursement of agricultural credit in three years to give a boost to agricultural development. The SCBs in their enthusiasm to achieve the targeted goal concentrated on financing as many as farmers with medium and large-size holdings, leaving S&MFs behind. However, during 2007-11, outstanding agricultural credit of SCBs to S&MFs

increased from Rs.624.13 billion to Rs.1727.27 billion [276.75%]. While public sector banks' credit modestly increased from Rs.602.73 billion to Rs.1576.98 billion [261.64%] private sector banks credit shot up from Rs.21.40 billion to Rs.150.29 billion [702.29%]. The share of public sector banks' credit to S&MFs in the total significantly declined from 96.57% in 2007 to 91.30% in 2011.

- During 2007-11, public sector banks progressively improved their share of S&MF credit in Adjusted Net Bank Credit [ANBC] from 4.57% to 6.32% as compared with 0.64% to 2.82% by private banks. In aggregate, banks' share to S&MFs increased from 3.77% to 5.71%.
- As on 31st March 2011, four [15.38%] out of 26 public sector banks and 11 [55%] out of 20 private banks had outstanding credit to S&MFs below 4% of ANBC whereas five each [19.23% & 25%] had above 9%. Eleven PSBs and two private banks had between 4% and 7% whereas six and two respectively had from 7% to 9%. Thus, 21 PSBs out of 26 and 15 private banks out of 20 had outstanding credit to S&MF below 9% of ANBC ranging from zero to 8.7% of ANBC and 84.61% PSBs and 45% private banks had 4% or more of share of S&MF credit in ANBC respectively.
- Despite S&MF credit increasing over the years, the number of S&MFs financed had not proportionately increased. As of March 2011, the total numbers of S&MF loan accounts with SCB were approximately 23 million. Considering that a farmer, on an average, may have more than one account with bank(s), only around 15% to 20% of S&MF households were availing loans from SCBs.

BORROWER- ACCOUNTS

- During five years from 2009-10 and 2013-14, at aggregate level total numbers of agricultural borrower-accounts financed increased from 48.23 million to 79.968 million [165.80%]. The share of S&MFs in the total increased from 59% in 2009-10 to 63% in 2013-14. While commercial banks financing S&MFs increased from 52% to 62%, cooperatives increased just from 63% to 64% and RRBs had declined from 68% to 67%.
- During the same period, at aggregate level credit disbursed shot up from Rs.3845.1 billion to Rs.7116,2 billion [185.07%]. The share of S&MFs in the total credit disbursed increased significantly from 31% to 45%. While commercial banks and cooperative banks significantly increased their share from 24% to 40% & from 46% to 58% respectively, RRBs share marginally increased from 60% to 62%.
- During 2009-10, number of S&MFs financed by RRBs accounted for as high as 68% of their total borrower-accounts followed by cooperatives [63%], whereas commercial banks had significantly lower share [52%]. As against this, after five years in 2013-14,, RRBs continued its higher share at 67% closely followed by cooperatives [64%] & commercial banks [62%].
- During 2009-10, RRBs had share as high as 60% in credit disbursed to S&MFs whereas cooperatives & commercial banks had significantly lower at 46% & 24% respectively. As against this, after five years in 2013-14, RRBs maintained its higher level of share [62%] as compared to 58% & 40% by cooperatives & commercial banks respectively.

Thus, among three credit agencies RRBs have performed better in financing S&MFs followed by Cooperatives than commercial banks, whereas RRBs could not show better performance in 2013-14 over 2009-10. .

Share of number of S&MFs financed at 63% was significantly less than S&MFs share in the total number of operational holdings (85%), whereas the share of S&MF credit [45%] in the total credit disbursed matches with their share in the total area operated (44.6%) in the country.

RECOVERY OF BANK LOANS

Credit flows easily only when the lender is assured and confident that the depositors' money lent will be repaid with interest on time. This requires putting in place effective default prevention mechanism. Since decade, overdue percentage to demand, Non-Performing Assets [NPA] status in agriculture, percentage of NPAs to total agricultural loan outstanding has been growing at faster rate, For State Cooperative Agricultural & Rural Development Banks [SCARDB] & Primary Cooperative Agricultural & Rural Development Banks [PCARDB], these incidences have been very high as compared with State cooperative banks [StCB] & District Central Cooperative Banks [DCCB]. Scheduled Commercial Banks [SCB] had lower NPA percentage than RRBs whereas recovery performance of RRBs was better than SCBs. Non-repayment of bank credit by farmers is perhaps a single most factor responsible for banks to be most cautious, alert and hesitant to lend to agriculture.

Overdue amount in case of direct agricultural credit by SCBs significantly increased from Rs.488.8 billion in 2012 to Rs.748.9 billion [153.22%] in 2014 whereas overdue percentage to demand marginally declined from 25.5% to 23.9%. Similarly, gross NPA amount by SCBs shot up from Rs.97 billion in 2008 to Rs.391 billion [403.09%] as against outstanding agricultural credit from Rs.3081 billion to Rs.8295 billion [269.23%] reflecting increase in higher NPA percentage to outstanding credit from 3.2% to 4.7%.

For RRBs, overdue percentage to demand between 2005 and 2015 was almost the same [20.15%/ 20.53%] whereas NPA percentage to outstanding credit declined from 8.53% to 5.72%.

For DCCBs, overdue percentage to demand significantly declined from 39.66% in 2007 to 29.14% in 2014 which reflected on significant declining NPA percentage to outstanding credit from 22.18% to 12.67% though NPA amount marginally increased from Rs.62483 million to Rs.65548 million [104.89%] respectively during 2007 to 2014.

In case of SCARDBs, overdue percentage to demand substantially rose from 56.11% to 66.75% reflecting on significant increase in NPA amount from Rs.56431.3 million to Rs.72558.1 million [128.58%] and NPA percentage to outstanding credit from 30.27% to 35.57% during the period.

In case of PCARDBs, overdue percentage to demand shot up from 47.78% to 56.08% reflecting on increase in NPA amount from Rs.43160.3 million to Rs.48090.4 million [111.42%] and NPA percentage to outstanding credit from 35.44% to 37.30% respectively during the period.

9. RISK IN AGRICULTURE

Agriculture in India has been exposed to specific types of risks which adversely affect particularly S&MFs in respect of their income, livelihood and financial sustainability of small-

scale farming that they pursue. The frequency and severity of these risks have increased over the past several years. S&MFs are unable to manage or mitigate following types of risks in particular since they lack in resources, technical & managerial skills and financial support. Inadequate public investment in agriculture and low priority in creating enabling environment to mitigate the adverse impact of these risks have been the important factors discouraging banks to lend to agriculture in general and S&MFs in particular.

Climate Risks: Climate [temperature, humidity, rainfall, sunshine, wind etc.] during critical phases, namely crop planting, its growth period, flowering & harvesting significantly influences crop productivity & quality of farm products. Sometimes, abrupt & unforeseen climatic changes result into outbreak of pests & diseases, leave alone drought, floods, cyclones etc. causing unbearable crop loss. While south-west monsoon accounts for 80% and north-east 20% of rainfall there is a large variability in the monsoon rainfall on both space and time scales. Only 63 million hectares [45%] of net cropped area is irrigated. Consequently, some parts of the country experience drought or flood almost every year. Since post-independence, country experienced 15 large-scale droughts in 1951, 1965,1966, 1972,1974, 1979, 1982, 1986, 1987,1988, 1999,2000,2002,2009 and 2012.. About 49.8 million hectares [15.2% of geographical area] is flood-prone and 10 to 12 million hectares are actually flooded each year.

Production/Producer Capacity Risks: As S&MFs have limited capacity to innovate, share knowledge among resourceful farmers and their access to institutions engaged in researching & disseminating proven & demonstrated production technology [including better methods of crop harvesting] as well as easy access to irrigation, credit, insurance and inputs of crop production [seeds, fertilizers & pesticides of standard quality & reasonably priced] & farm equipment their farm output is less in terms of quantity & of inferior quality.

Market Risks: S&MFs often face problems during post-harvest stage in terms of processing, packaging, transport, handling, storage & marketing. Since these facilities & services are not available on time & at reasonable rates at one place they have to move from pillar to post and ultimately sell the produce at a very low price. In most cases, their return on the investment & other resources is quite low making crop farming financially unviable proposition. Market risk is such an unpredictable that sometimes a farmer receives good crop yields only to face a drop in price at the time of sale due to excess supply in the market. For marketing, S&MFs have to deal with multiple layers of middlemen. For example, farmers sell in villages 85% of wheat and 75% of oil seeds in Uttar Pradesh, 70% of oil seeds and 35% of cotton in Punjab, and 90% of jute in West Bengal. These middlemen take away about 47% of the price of rice, 52% of groundnut and 60% of potatoes. On an average, Indian farmers realize only 20% to 25% of the value paid for by consumers.

Credit Risk: Financing potential S&MFs necessitates careful appraisal of the profile of S&MF, his/her business profile & business cycle and cash flows of households in order to properly estimate the repayment capacity & their willingness to repay the credit with interest on time. Since many S&MFs do not keep proper business & financial records, this calls for developing a method to collect reliable critical data & information through various means, which is time consuming & expensive for banks. Besides, bank-staff are not that much equipped to understand other types of risks that S&MFs face in specific agro-ecological region of India.

RBI's Directive: Recently, the RBI has directed SCBs to achieve target of 8% lending to S&MFs within the 18% target set for agriculture, to be achieved in a phased manner, 7% by March 2016 and 8% by March 2017. For the purpose of computation of 7-8% target, S&MFs will include: marginal farmers [landholding of up to 1 hectare] and small farmers [landholding between 1 and 2 hectares], landless agricultural laborers, tenant farmers, oral lessees and sharecroppers

Initiatives by Banks: SCBs, in order to reach as many rural households as possible including hitherto unbanked/remote areas as a part of their Financial Inclusion Plan, have made significant progress during the last five years as is evident from the following.

- Between 2010 and 2015 number of banking outlets in villages [branches] increased from 33,378 to 49,571 along with increase in banking outlets [branchless mode] being served by Banking Correspondents [BC] from 34,316 to 504,142.
- Rural households of 553,713 villages now have access to banking and credit service as on 31st March 2015.
- During the quinquennial period, number of Kisan credit cards [KCC] provided shot up from 24.3 million to 42.5 million and loan amount sanctioned from Rs.1240.1 billion to Rs.4382.3 billion.
- Number of operational Financial Literacy Centres [FLC] increased to 1,181 in 2014-15 and total number of participants attending FLCs increased to 5,238,358.
- Number of Banking Correspondent-ICT [BC-ICT] transactions increased from 26.5 million to 477.0 million with amount transacted increased from 6.9 billion to 859.8 billion.
- During 2014-15, 32,509 rural branches conducted financial literacy camps.
- About 1.4 million and 5.7 million participants opened accounts in the camps organised by the FLCs and rural branches of banks, respectively

Installation of effective monitoring of the performance of banking outlets and BCs and robust Management Information System will surely improve credit disbursement to S&MFs as prescribed by the RBI.

Government's initiatives: Government has in 2016-16 announced two measure policy initiatives, Pradhan Mantri Fasal Bima Yojana [PMFBY] and National Agricultural Market [NAM] which are expected to benefit all farmers in general & S&MFs in Particular.

Crop Insurance: India has a rich experience of conceptualizing & implementing the 'crop insurance' schemes since 1985. The principal objectives of the schemes include [i] providing insurance cover and financial support to the farmers in the event of failure of any of the notified crops and losses suffered on account of natural calamities such as drought, flood, hailstorm, cyclone, pests and diseases. [ii] encouraging farmers to adopt scientific farming practices involving purchase and use of adequate inputs [iii] helping stabilize farm incomes, particularly in disaster years. Though the scheme in one or the form has been under implementation since three decades, it has not created any visible impact. As per the National Sample Survey [NSS], 70th Round, a very small segment of agricultural households insured their crops, for which reasons include [i] lack of systematic and determined efforts of insurance companies in particular and by banks and government in general to create required awareness among S&MFs and

convince them to buy crop insurance [ii] lack of resources for paying the premium by S&MFs in particular [iii] complexity of claim settlement procedures and delays in the payment of claims [iv] absence of a felt need.

Now, the government has conceptualized & introduced the PMFBY which is the improved version based on past experiences of all crop insurance schemes experimented in India since 1985 & replaces the existing ones, viz. National Agricultural Insurance Scheme [NAIS] & Modified NAIS Within next 2-3 years, the scheme aims to bring 50% farmers under the scheme. It comes into operation from 1st July 2016. The salient features of the scheme include, among others, [i] Crops covered: The scheme covers kharif, rabi crops as well as annual commercial and horticultural crops. For Kharif crops, the premium charged would be up to 2% of the sum insured. For Rabi crops, the premium would be up to 1.5% of the sum assured. For annual commercial and horticultural crops, premium would be 5%. The remaining share of premium will be borne equally by the central and respective state governments. [ii] Insurance: There will be one insurance company for the whole state. Private insurance companies will be roped along with Agriculture Insurance Company of India Limited (AIC) to implement the scheme. [iii] Losses covered: Apart from yield loss, the new scheme will cover post-harvest losses also. It will also provide farm level assessment for localized calamities including hailstorms, unseasonal rains, landslides and inundation. [iv] Use of technology: The scheme proposes mandatory use of remote sensing, smart phones and drones for quick estimation of crop loss. This will speed up the claim process [v] Other features: The settlement of claims will be fastened for the full sum assured. About 25% of the likely claim will be settled directly on farmers account. There will not be a cap on the premium and reduction of the sum insured.

National Agricultural Market: An efficient marketing system with high levels of transparency can encourage healthy competition, active participation of genuine stakeholders, provide higher returns to the farming community, and a fair deal to consumers. The existing marketing of agricultural produce under the Agricultural Produce Market Committees Act has a number of deficiencies and limitations involving a long chain of intermediaries and cartelization at the physical market place which adds two major costs viz. the intermediaries' margin and multiple handling costs as a result producers get a very low value of the produce. The government has, therefore, created and launched in 2016 a unified National Agriculture Market [NAM] to exhibit transparency in the marketing system, leverage state of the art technology for a well-regulated market, enable full participation of all stakeholders and ensure maximum benefits of the entire agricultural value chain to farmers & consumers.

The NAM envisages creation of better equipped warehouses in the vicinity of major production clusters, real-time electronic auctioning of the commodities along with integrated assaying, weighing, storage and payment systems. It will issue a single license for trading across the country in order to promote increased participation of buyers. Assaying, weighing and payments will be integrated with auctioning in such a manner that the payments will be credited directly to the farmers' bank accounts. Details will be available on the electronic platform. It will provide a dual benefit to producers by averting the need to bring produce to the market physically and enabling them to avail funding against the commodities stored in the warehouses against warehouse receipt scheme, thus strengthening the price risk management for farmers.

The e-NAM marketplace will initially help farmers in eight States [Uttar Pradesh, Madhya Pradesh, Jharkhand, Himachal Pradesh, Gujarat, Telangana, Rajasthan and Haryana] sell 25 commodities in 21 wholesale *mandis*. The government has targeted integrating all 585 regulated markets on the e-NAM platform by March 2018. While 200 markets will be on e-NAM by September 2016 followed by other 200 by March 2017, the remaining 185 markets by March 2018

Issues that Need Focused Attention: Guided by the past several years' experiences following specific Issues need focused attention by the Union & State Governments, RBI & rural financial institutions to make small & marginal farms financially sustainable & bankable

10. INTEGRATED CREDIT SUPPORT TO MAKE S&MF VIABLE

S&MFs have 70%, 55% and 52% share in total production of vegetables, fruits and cereals respectively against their 44.46% share in area whereas they have lower share in pulses and oilseeds than that of large farmers. Their share is 69% in milk production. Thus, despite S&MFs have potential to contribute to diversification and food security, holding size of 0.61 hectare is not adequate to generate enough income for the subsistence of the family [particularly in the absence of additional livelihood opportunities]. This is because S&MFs have inherent disadvantages both in the input and output markets. According to NABARD, average monthly income from different sources, the total consumption expenditure and net income per agricultural household during the agricultural year July 2012–June 2013 for each size class of land possessed. The share of income from non-farm business in the average monthly income decreased with an increase in land size. Similarly, the net investment in productive assets per agricultural household increased with an increase in land size. Further, the net monthly income (farm and non-farm) in respect of size classes up to 1 ha was negative and it increased steadily with an increase in size classes. This demonstrates the need to significantly enhance their income through improving productivity of crops per hectare, diversification and providing additional sources of income which can make small-scale farming efficient and financially sustainable.

BRIDGING YIELD-GAP

India has the capacity to increase wheat production by 30 million tones or around 40% and double paddy production at current levels of technology. This can be achieved by bridging the existing gap between the actual crop yields at field level and the potential yields. For achieving the expected level of productivity of wheat & paddy per unit of area & resources and realizing optimum rate of return on investment at the level of S&MFs, they should be provided technical & financial guidance, based on analysis of farm soil & water, on cropping system, adoption of scientific techniques [when & how] and judicious use [no more & no less] of seeds, fertilizers, pesticides, water, labor & credit. The technology [how & when] of integrated nutrient supply, water & pest management needs wider dissemination among farmers through mass scale field demonstrations in coordination with bank staff. The Farm Inputs & Equipment Regulatory & Development Authority needs to be established to ensure that the inputs [including farm equipment & machinery] being supplied are of standard quality, reasonably priced & timely delivered. The crop farming must necessarily be combined with livestock [poultry, dairy, sheep, pig farming] and /or fish farming to mitigate production, income & financial risk.

SEED REPLACEMENT & IMPROVEMENT

Due to the limited scope for increasing the area under cultivation, only an improvement in crop-yield can result in long-term growth in output. However, both the average annual growth in production and yield of food grains has been stagnating. The low yield and growth of output in agriculture have been associated with relatively low levels of investment compared to other sectors of the economy. The hybrids/ high-yielding seeds contribute to 20%–25% increase in crop- productivity. Unfortunately, S&MFs have been using their own farm-grown & saved seeds for decades rather than replacing by high-yielding seeds. Hence, timely supply of quality hybrid seeds at affordable prices to S&MFs is necessary for achieving higher agricultural production and productivity.

While the first Green Revolution had its genesis in the ‘*Seed-Fertilizer-Irrigation*’ technology, the second Green Revolution should originate from ‘radiation-induced mutation technique and Biotechnology’ along with integrated nutrient, pest & water management technology. The International Atomic Energy Agency has called for increased investments in radiation-induced mutation techniques that help in producing crop varieties with high yields and disease resistance, and can grow in stressful conditions such as drought, flood and salinity. This technique has been in use since 1920s and more than 3000 varieties of 170 different plant species have been released for cultivation. Similarly, biotechnology in recent years has created unprecedented opportunities and revolutionized agriculture through developing plant tissue culture and genetic engineering techniques leading to transgenic plants carrying desirable traits, viz. insect and herbicide resistance; tolerance to salinity, drought and major pests; enhancing nitrogen fixing ability, improving shelf-life, high protein content and crops suitable for food processing, thereby addressing problems related to malnutrition, hunger and poverty worldwide. India should, therefore, sharply focus on inventing new seeds & planting material of various field crops through application of new technology and making them available to S&MFs in particular.

11. VALUE CHAINS INVOLVING S&MFs

Review of literature reveals that where S&MFs have been able to integrate into supply chains, supermarkets have offered enhanced security and considerably higher margins than traditional clients, such as wholesalers in groceries. Therefore, linking S&MFs to integrated market systems can improve economic viability of small holdings. Further, field studies on value chains indicate that participation of S&MFs make chains more sustainable and more conducive to enhance their income. Thus, individual S&MFs facing problems to access credit and technology to enhance production and are unable to benefit from input and output markets, can be motivated to participate in an established value chain. Innovative business models viz. Amul, Nestlé, Safal, Namdhari, among others, have successfully demonstrated that S&MFs who account for 85% of agricultural households along with other resource-poor households pursuing allied activities (dairy, poultry, sheep, goat, fish farming] and non-farm activities, can be brought together to participate in an established value chain.

The promotion of farmer producers’ organizations (FPOs), particularly by organizing smallholder producers, has the potential to reduce the costs of marketing of inputs and outputs, and provide a forum for members to share information, coordinate activities and make collective

decisions. The Small Farmers' Agribusiness Consortium has already mobilized 6.79 lakh farmers and promoted about 700 FPOs, of which 243 have already been registered and the rest are under process of registration. NABARD is also supporting producer organizations out of its Producers Organizations Development Fund, adopting a flexible approach to meet the needs of producers.

12. NATIONAL AGRICULTURAL MARKET

In order to ensure on time implementation of e-NAM & make it successful the pre-requisites are [i] The concerned APMCs need to implement the tenets of the envisaged NAM in a phased manner, including enabling infrastructure for integrating pre-and post-auctioning activities [ii] Extension agencies engaged in promoting agriculture can create awareness among producers on grading, standardization, quality, assaying and electronic auctioning systems. This should promote active participation of major stakeholders, enhance healthy competition and provide fair returns to farmers [iii] Existing spot exchanges should strive to create a national market for agricultural produce and bring the advantages of a transparent pan-India market to farmers and consumers alike. While exchanges can provide the knowhow and technology for creating a pan-India market, the Centre and the State governments should formulate a strong facilitating framework.

13. CROP INSURANCE

As India has been implementing crop insurance scheme since 1985 and cannot go on experimenting for years together, measures necessary to improve agricultural insurance system include [i] Action Research Projects in different agro-ecological regions to evaluate comprehensively the existing crop insurance schemes including "Weather-Based Crop Insurance" based on the quantitative relationship between weather parameters and crop yields being implemented in 18 states to understand the ground realities of deficiencies/shortcomings of the schemes in respect of their conceptualization & implementation from the angle of beneficiaries[S&MFs] and identifying the factors responsible for low coverage & failure of the schemes to achieve the targeted goals[ii] Seeking farmers' views & their anticipated participation in next three years under the recently launched PMFBY[iii] Systematic documentation of crop losses as a result of different eventualities in different agro-regions[iv]Adequate investment in developing the-state-of-the-art-technology for preparing weather atlas of critical weather elements, developing early warning systems, use of remote sensing technology and conducting surveillance activities to control pests and diseases [v]Development of Insurance products specific to each agro-ecological region for important crops instead one-size fits all[vi] Developing insurance products for cattle/livestock & fish as well as farm assets including farm equipment & machinery when S&MFs are pursuing crop-cum-livestock-cum-fish farming to gainfully occupy in different economic activities & increase their income [vii]Encouraging private insurance companies to offer crop insurance [viii]Government to consider establishing agriculture-risk fund [ix] State governments, insurance companies, banks and local level print & electronic media to launch a well-planned massive crop insurance campaign before each crop-season [x]. As S&MFs are customers of insurance companies, adequate awareness to be created about their rights and duties as an integral part of consumer protection rights [xi] Insurance companies to put in place effective farmers grievance redressal mechanisms [xii] State governments, insurance companies & banks together to build capacity of S&MFs to accept and

use technology through sustained financial literacy initiatives [xiii]S&MFs must be convinced and incentivized to promote crop-diversification, mixed farming and pursue non-farm activities

14. OPTIMUM UTILIZATION OF BANKING OUTLETS

Apart from 93,488 Primary Agricultural Credit Societies and 714 PCARDBs, SCBs have 49,571 branches in villages, besides having BCs serving 504,142 villages as on 31st March 2015. In order to optimize the return on the capital invested for opening rural branches and maintenance of BC-based banking outlets, banks can meticulously survey the potential business area through collecting required statistics & information and properly analyzing them to develop a comprehensive business plan [perspective plan for five years & annual action plan] for each rural branch covering a group of villages. The plan should be implemented drawing integrated & result oriented strategy, which should, *inter alia*, include the design of effective risk assessment methodologies, the development of strategic collaborations with value chain participants to mitigate perceived agricultural risks, and create cost effective distribution channels.

Reduction in Operational Costs: Banks along with BCs have covered 553,713 villages out of inhabited 592,843 villages in the country of which many are with low population density and grossly inadequate basic necessities & infrastructure. Also, S&MFs are often scattered which make lending costly since it presents logistic challenges, such as marketing effort, identification & selection of borrowers, pre-sanction & post-disbursement supervision, follow-up for recovery of loans & dealing with loan delinquencies etc. This, therefore, certainly increases operational costs. Lending without tangible collateral presupposes supervision & follow-up on a continuing basis. Therefore, banks have to undertake need-based research and design procedure for lending & distribution channels that are cost effective and convenient for both clients and banks. Effective coordination with local level institutions of repute & resourceful persons, development of flexible and easily replicable structures for marketing, credit delivering and monitoring loans and technology application are critical requirements to increase clientele outreach & make banks financially sustainable in due course of time.

Effectiveness of BC Model: Number of BC-ICT transactions need to be increased in commensurate with the number of 248,000 BCs engaged and number of accounts opened.. Capacity building of BCs and effective supervision, use of appropriate technology and efficient cash management services can considerably help BCs deliver banking services throughout rural India. Banks need to have appropriate control system for oversight over BC operations. Availability of proper network connectivity across the country can facilitate greatly the ICT-based BC model due diligence for credit appraisal, which consists of one or more of requirements viz. (i) credit history check through credit information bureaus; (ii) self-declaration or an affidavit from the borrower; (iii) central registry of securitisation asset reconstruction and security interest (CERSAI) registration (iv) information search and sharing among lenders [v] monitoring

15. POSTING OF STAFF IN RURAL BRANCHES

With the introduction of financial sectors reforms banks, in their endeavors to comply with prudential norms, have accorded lowest priority to strengthen rural branches. To achieve RBI's

directed 8% credit to S&MFs within 18% targeted agricultural lending by 2017, banks need to have adequate number of staff having specialized knowledge and skill to systematically promote, develop, accelerate & manage the growth of rural finance. The ideal staff for rural finance should have an educational background and expertise in agricultural & animal husbandry, preferably better understanding of rural economy & ability to adjust with rural environment. The candidate should have thorough knowledge of the agricultural sector that includes, among others, techniques & economics of crop production, use of yield-maximizing inputs, marketing intelligence. Experience suggests that traditional urban oriented loan officers neither have these required skills/expertise/experience nor they adjust with rural environment. Besides, knowledge to collect & analyze field data on crop yields, production costs, income at borrower's level they should be able to understand the economics & dynamics of non-farm sector as it is an integral part of rural economy & finance. This has significant implications from the angle of optimum utilization of staff services in rural area [agriculture is a seasonal activity], minimizing risks and improving the operational viability of banks & achieving inclusive growth of rural areas. The criteria for rural loan officer can be of 21 to 25 years of age, a degree in agriculture with subjects of agronomy, agricultural extension, farm management, agricultural economics etc. and has at least two years' work experience. After joining bank he/she should be thoroughly trained in & exposed to credit appraisal system & procedure. He should possess good communication skill, farmer-friendly approach towards small farmers & women clients and willing to work in the field at least 60% of the time & travel daily by motorbike. Gradually he should be able to finance non-farm sector activities thereby covering progressively all rural households in the village. To motivate & retain him/her, his/her remuneration, bonus, promotion & other non-financial incentives should be linked with his/her performance to achieve bank's mission & business goals, which should be reviewed each year.

16. CONCLUSION

During 2016-17 the government, academics and media can create awareness among S&MFs about their potentials and their rights to demand implementation of policy and programs incorporated in the 12th FYP document. Success of S&MFs contributing to India's food security lies in the demonstration of political will of elected legislators, administrative skill, commitment and accountability of implementing agencies and timely delivery of services by the institutions viz. suppliers of production inputs, technology, credit, insurance and marketing. A road map indicating the timely completion of all activities by 2018-19 should be prepared accompanied by effective Monitoring & Management Information System and quarterly progress displayed on the website of the Union Ministry of Agriculture.

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