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Environment and Social Systems' Assessment (ESSA)

Agriculture Risk Resilience Insurance Access Program (ARRIA)

P165923

Contents

S.No.	Name	Page No.
	List of Abbreviations	2
	Executive Summary	3
1.	Background and Introduction	8
1.1	• Environmental Dimensions of Indian Agriculture	9
1.2	• Social Dimensions of Indian Agriculture	10
2.	Program Background and Description	14
3.	Environment and Social Assessment and Mitigation Action	15
4.	Approach and Methodology	15
5.	Objectives of PMFBY	16
6.	Relevant Legislations and Regulations	17
6.1	• Legal and Tenancy Rights	17
6.2	• Relevance of Legal and Regulatory Framework for PMFBY	19
7.	Assessment of Roles, Responsibilities and Gaps	21
7.1	• Institutional responsibility	23
7.2	• Issues raised by Stakeholders	25
8.	Social Assessment and Gender Analysis	27
9.	Environment Assessment – Key Findings	31
10.	Impact Assessment	32
11.	Assessment Against Core Principles	33
12.	Recommendations and Action Plan	38
13.	Action Plan	42
14.	Consultation and Disclosure	43
	Annexure: List of People Met	45

List of Abbreviations

AICIL	Agriculture Insurance Company of India
ARRIA	Agriculture Risk and Resilience Insurance Access
ARG	Automatic Rain Gauges
AWS	Automatic Weather Stations
BCC	Behavior Change Communication
CCE	Crop Cutting Experiment
CCIS	Comprehensive Crop Insurance Scheme
CSC	Common Service Centre
DoAC&FW	Department of Agricultural Cooperation and Farmers' Welfare
ESSA	Environment and Social Systems Assessment
GIC	General Insurance Company
GoI	Government of India
GPRS	General Packet Radio Service
GRM	Grievance Redress Mechanism
M&E	Monitoring and Evaluation
MNAIS	Modified National Agricultural Insurance Scheme
NAIS	National Agricultural Insurance Scheme
PACS	Primary Agriculture Credit Societies
PMFBY	Prime Minister Fasal Bima Yojana
PIU	Program Implementation Unit
PMU	Program Management Unit
RRB	Regional Rural Banks
SC	Scheduled Castes
SLCCCI	State Level Crop
SHG	Self Help Group
ST	Scheduled Tribes
TSU	Technical Support Unit
VAW	Village Agriculture Workers
WBG	World Bank Group
WBCIS	Weather Based Comprehensive Scheme
WUA	Water Users Association

Executive Summary

Chronology of Crop Insurance Schemes in India

The General Insurance Corporation (GIC) was established to implement the First Individual Approach Scheme (1971-1978) and Pilot Crop Insurance Scheme (1979-1984). Following this experience, crop insurance restarted in 1985 with the Comprehensive Crop Insurance Scheme (CCIS), which was replaced by the National Agriculture Insurance Scheme (NAIS) and then a Modified NAIS (MNAIS). These schemes were not largely successful. A new national program was introduced in 2016, the *Pradhan Mantri Fasal Bima Yojana* (PMFBY) that retained the mandatory insurance of notified crops[1] but also introduced new guidelines for Crop Cutting Experiments (CCE), capped premiums and several others.

The Scale and Challenges of the Prime Minister Fasal Bima Yojana (PMFBY)

PMFBY is the national Scheme on crop insurance, addressing both the demand and supply side bottlenecks. It employs an innovative mix of technology, premium subsidies and enrollment process to provide insurance cover to millions of farmers across the country. Given the scale of its operations, PMFBY is facing its own set of challenges. These challenges range from coverage and enrollment to delays in payouts. In fact, the overall areas insured has decreased from the last year (from 57.2 million hectares in 2016-17 to 47.5 million hectares in 2017-18). This is less than 24% of the gross cropped area (against an estimated target of 40%) as compared to 89% in the US and 69% in China. Given that insurance cover under PMFBY is linked with institutional credit and notified crops, a large number of farmers are not benefitting from it.

PMFBY and the Proposed World Bank Support

The Ministry of Agriculture and Farmers Welfare (MOAFW) has approached the World Bank for support for improving the performance of PMFBY. Accordingly, 'Agriculture Risk Resilience and Insurance Access' Program has been prepared with the development objective "to increase farmer access and improve service delivery standards of the PMFBY crop insurance scheme in select states in India". Even though PMFBY is a national scheme, the proposed World Bank Program will be implemented in five states (Maharashtra, Uttar Pradesh, Odisha, Gujarat and Karnataka) and the lessons from this will be replicated and scaled up through the PMFBY. A 'Program for Results' (PforR) financing instrument has been selected for extending support to PMFBY. The proposed program has three Results areas supported by Disbursement Linked Indicators and a fourth Result area to strengthen Consumer Protection aspects and Regulatory Oversight of the PMFBY Program.

Results Area – 1: Improved institutional capacity for program implementation. Activities will focus on a) strengthening institutional capacity, primarily through the Technical Support Units at the Central and State levels; b) strengthening robustness and functionality of Data and Management Information Systems at the Center and the participating States; and c) strengthened Monitoring & Evaluation systems.

Results Area – 2: Improved quality and efficiency of service delivery. Activities will focus on a) streamlining the enrolment process; b) streamlining the claims process; and c) strengthening crop yield estimation through technology adoption. Technological innovations, such as, mobile app-based Crop

[1] for loanee farmers i.e. farmers accessing institutional credit for crop production

Cutting Experiments (CCEs) are likely to be scaled up along with building efficiency in the process-steps of PMFBY for ensuring faster and timely pay outs in the event of crop losses.

Results Area – 3: Enhancing inclusion. This will address the issue of potentially skewed coverage of crop insurance (including of women) through activities targeted at demand and supply side stakeholders. To strengthen delivery, activities will explore distribution of the product through diverse channels such as Self-Help Groups, India Post (including the Payments' Bank) etc. On the demand side, a range of awareness activities will be implemented to build financial literacy on crop insurance among farmers and agencies (including state governments, banks, insurers) involved in PMFBY implementation.

Results Area – 4: Strengthened Consumer Protection and Regulatory Oversight of PMFBY Program. The crop insurance program historically has been kept outside the regulatory and supervisory purview of the insurance regulator. With the intent to increase coverage of PMFBY.

Environment and Social Systems Assessment (ESSA)

ESSA is conducted as per the World Bank's Operational Policy 9.00 core principles. It was undertaken to better understand the environmental and social adverse impacts and potential risks arising out of the implementation of the current program. Also, to identify any environmental and social aspects that could benefit from strengthening the existing systems relating to PMFBY. It looks at risk from two general perspectives – institutional and investment-specific.

Approach and Methodology followed for ESSA

The ESSA was carried out at the national as well as participating state level. The objectives were to understand: a) how environment and social concerns are addressed in the policy framework within which crop insurance is managed; b) the relevance of different legal and regulatory provisions; c) the roles and responsibilities of the various stakeholders involved in implementation of PMFBY; and d) the capacity and performance of key institutional stakeholders. Five states were visited (Odisha, Karnataka, Gujarat, UP and Maharashtra) and interactions held with farmers (tribals /non tribals), office bearers of Primary Agriculture Credit Societies (PACS), officials of Regional Rural Banks (RRBs), officials at the District and State levels and officials at the central ministry.

Applicability of ESSA core principles

Core Principle 1 *Environmental and social management procedures and processes are designed to (a) promote environmental and social sustainability in the program design; (b) avoid, minimize, or mitigate against adverse impacts; and (c) promote informed decision-making relating to a program's environmental and social effects.*

This principle is applicable. In its current form, implementation of PMFBY has no focus on promoting environmental and social sustainability and is implemented largely in isolation of other complementary and/or synergistic schemes and programs. The sustainability aspects and promotion of modern agricultural practices, including climate smart and conservation agriculture approaches, can be achieved using the existing extension system. This will require investing in building capacity of the KVKs and other extension workers.

Core Principle 2 *Environmental and social management procedures and processes are designed to avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program*

This principle is not applicable. Interventions proposed under the program would not impact natural habitats and physical cultural resources.

Core Principle 3 *Environmental and social management procedures and processes are designed to protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and, (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazard.*

This principle is applicable. While the program is not supporting interventions on agricultural production, and only improving the delivery of crop insurance program, the current agricultural practices expose farmers (and other related stakeholders) to high level of exposure to pesticides, some of which are highly toxic. This practice is counterproductive to one of the objectives of PMFBY viz. promoting good agricultural practices.

Core Principle 4 *Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assists the affected people in improving, or at the minimum restoring, their livelihoods and living standards.*

This principle is not applicable. Interventions under the program do not involve any land acquisition.

Core Principle 5 *Give due consideration to the cultural appropriateness of, and equitable access to, program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.*

This principle is applicable. Program benefits are unable to expand coverage and reach vulnerable, marginal, schedule casts and tribal farmers, including women farmers. Several factors, such as, crop notification, institutional borrowing, land titling etc. contribute to this. Efforts are required to build capacity and design new insurance products/methodologies/criteria for ensuring equitable access to program benefits.

Core Principle 6 *Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.*

This principle is not applicable. By its very nature, the scheme is intended to lower vulnerability of farmers to climate related shocks and distress from crop failure. It is therefore intended to lower any likelihood of social conflict or unrest.

Key Issues Identified in the ESSA

- Exclusion of large number of farmers, particularly schedule castes, schedule tribes, from PMFBY due to tenant and share croppers, crop notification and linkage with institutional credit/borrowing.
- Despite large number of women involved in agriculture, lack of land ownership and small farm sizes limit their participation in PMFBY.
- Limiting the notification to a few crops and capping of premiums may be unintentionally impacting crop diversification.

- Farmers have inadequate awareness about crop insurance and in its current form, PMFBY design does not have an interface with farmers resulting in mistrust, providing wrong information and discrediting the scheme.
- In its current form, PMFBY design is not able to focus on some of its objective(s), especially on 'encouraging farmers to adopt innovative and modern agricultural practices', which could lower the overall crop failure risk.
- Institutional capacity for implementing PMFBY is low, which is further compounded with skeletal staff deployed at the state level for managing it.
- Lack of coordination between different stakeholders like banks, insurance companies and government that impact enrollment, servicing and payouts having a disproportionate impact on marginal and small farmers for whom the average transaction costs of delivering insurance are higher.

ESSA Findings on Relevant Legal and Regulatory Environment

The ESSA has analyzed the existing legal and regulatory framework at both the central and state levels. The ESSA focused on tenancy rights, National Food Security Act, the Insurance Act, the Insurance Regulatory and Development Authority Act etc. It is observed that the tenancy related legal and regulatory provisions vary across states making customization of standardized insurance products complex and challenging. From an environmental perspective, most of the legal provisions have low relevance to the PMFBY and its outcomes.

Key Recommendations of ESSA

- Study the linkages between climate change patterns and premiums
- Expand Automatic Weather Station (AWS) network to mitigate 'basis risk'
- Developing climate linked insurance products
- Creating an environment-externality neutral insurance platform
- Implement PMFBY with Livestock Insurance Scheme (LIS)
- Work to integrate crop insurance as part of an agriculture package (especially in light of climatic variability)
- Design and adopt a Behavior Change Communication (BCC) strategy
- Delink insurance product from titles to expand coverage to small and marginal farmers
- Delink insurance product from loans given by financial institutions and expand coverage to non-loanees to address more vulnerable farmers
- Undertaken targeted capacity building for all service providers
- Strengthen citizen's engagement and feedback through grievance redressal mechanism

Suggested Program Actions in ESSA

- Develop a gender strategy, and implementation plan of agreed actions, for targeting and enhancing participation of women farmer owners in the crop insurance program.
  - Gender study conducted in year 1 in all participating states
  - Based on the Gender study, gender strategy developed and implementation initiated by year 2
- Designing a Behavioral Change Communication strategy and implementation plan targeting different stakeholders
  - Strategy developed by year 2 and implemented thereafter

- Undertake a study to understand the linkages between climate change patterns and premiums to inform pricing of premiums for select crops in select regions that are disproportionately exposed to higher climatic risks
    - Study completed in year 1 and premium pricing exercise based on findings piloted in at least two participating states
- Develop an alternate delivery mechanism for PMFBY as a part of an integrated agriculture package in select districts
    - Mechanism developed by end of year 2 and piloted thereafter in at least 2 participating states
- Make Farmer education part of PMFBY delivery
    - By year 2, select modules for farmer education developed and implemented thereafter

Environment and Social Systems Assessment

Agriculture Risk Resilience and Insurance Access Program (P165923)

1. Background and Introduction

Crop insurance in India has a long history. Soon after independence, an assurance given by the Ministry of Food & Agriculture in the central Legislature that crop and cattle insurance would be introduced. A study was thus commissioned in 1947-48. In 1965, the Government introduced a crop insurance bill and circulated a model scheme of crop insurance on compulsory basis to constituent state governments for their views.[2]

Different experiments on agricultural insurance on a limited, ad-hoc and scattered scale started from 1972-73 when the General Insurance Corporation (GIC) of India introduced a Crop Insurance Scheme on H-4 cotton. This scheme was based on "*Individual Approach*" and later included groundnut, wheat and potato. The scheme was implemented in the states of Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Tamil Nadu and West Bengal. It continued up to 1978-79 and covered only 3110 farmers for a premium of Rs. 4.54 lakhs against claims of Rs.37.88 lakhs.[3]

The General Insurance Corporation of India introduced Pilot Crop Insurance Scheme in 1979. This scheme was implemented in 12 states till 1984-85 and covered 6.23 lakh farmers for a premium of Rs. 195.01 lakh against claims of Rs. 155.68 lakh in the entire period.[4]

In 1985, Comprehensive Crop Insurance Scheme (CCIS), GoI's first nation-wide crop insurance scheme, was introduced. This scheme was in place for almost fifteen years. CCIS became India's first nation-wide crop insurance scheme, a step up from previous experimental and pilot crop insurance schemes. It was linked to institutional credit (crop loan based on area approach). It covered 763 lakh farmers for a premium of Rs. 404 crore against claims of Rs. 2303 crore. During 1997 Experimental Crop Insurance Scheme was introduced in 14 districts of 5 states. The scheme covered 4.78 lakh farmers for a sum insured of Rs. 1.72 crore and the claims paid were Rs. 39.78 crore against a premium of Rs. 2.86 crore.

During that time, other small-scale experimental schemes continued to be developed and introduced. These included one covering non-loanee farmers, one related to the production of certified seeds and a farmers' income insurance scheme.

In 1999, CCIS was replaced by the National Agricultural Insurance Scheme (NAIS), which was conceptualized to address operational problems that arose during CCIS implementation. It was introduced in coordination with General Insurance Corporation of India (GIC). Agricultural Insurance

[2] Report of the Working Group on Risk Management in Agriculture for 11 Plan, Planning Commission, 2007.

[3] S.S. Raju and Ramesh Chand, "Agricultural Insurance in India: Problems and Prospects", National Centre for Agricultural Economics and Policy Research, 2008

[4] P.K. Mishra et al., Report of the Committee to Review the Implementation of Crop Insurance Scheme in India, 2014

Company of India Ltd. (AICIL) which was incorporated in December 2002 and started operating from April 2003 took over the implementation of the NAIS.[5]

The Scheme was available to all farmers both loanee and non-loanee irrespective of the size of holding. It envisaged coverage of all food crops (cereals, millets, and pulses), oilseeds and annual commercial/horticultural crops, in respect of which past yield data is available for adequate number of years. The Scheme was continued till Kharif 2013; however, some States were allowed to implement NAIS during Rabi 2013 – 14 also. The Scheme was optional for States/Union Territories (UTs) and it was implemented by the 25 States and 2 Union Territories in one or more seasons. Since the inception of the Scheme 2084.78 lakh farmers for a premium of Rs. 8,67,121 lakh against the claim of Rs. 25,37,558 lakh was covered until 2012 – 13. The total area insured was Rs. 3137.70 lakh hectares during the same period.

To improve further and make the Scheme easier and more farmer friendly, a proposal on Modified National Agricultural Insurance Scheme (MNAIS) was prepared and was approved by Government of India for implementation on pilot basis in 50 districts from Rabi 2010 – 11 season. During the Five seasons of its implementation in 17 States, the MNAIS covered 45.80 lakh farmers for a premium of Rs.1,08,800 lakh against the claim of Rs. 86,400 lakh until Rabi 2012-13. The total area insured was 46.79 lakh hectares.[6]

The Prime Minister Fasal Bima Yojana (PMFBY) launched in 2016, envisages a uniform premium of only 2 per cent to be paid by farmers for Kharif crops, and 1.5 per cent for Rabi crops. The premium for annual commercial and horticultural crops will be 5 per cent. This scheme lays emphasis on design and delivery mechanisms. PMFBY has succeeded in changing perceptions of agricultural risk and contributed to improving agricultural sustainability. The Ministry of Agriculture has applied for a loan to Government of India to scale up the ongoing PMFBY which tries to address both the demand and supply side bottlenecks with technological inputs, development of products and widespread awareness campaigns to sensitize the farmers. The proposed World Bank Program will be implemented in five states (Maharashtra, Uttar Pradesh, Odisha, and Karnataka). Lessons and successful outcomes will be scaled up in rest of the country. The Environment and Social Systems Assessment (ESSA) findings and suggested program actions could help overcome some of the key challenges faced by PMFBY.

1.1 Environmental Dimensions of Indian Agriculture

Agriculture is dependent on environmental and climate variables that influence productivity and yield. Several environmental variables, such as, rainfall (amount and number of rainy days), temperature, soil nutrient status have a direct bearing on crop yields. Other natural resources, such as, forests, pollinators, pests and predators etc. also influence agricultural productivity. Agricultural outputs are a function of these factors and often subtended or facilitated (sometimes overused) with additional inputs in the form of various agrochemicals and irrigation. Post production, the agriculture sector is dependent on other parameters, such as, storage and transport infrastructure. A summary of environmental factors and their impacts is given below:

[5] Shrikrishna S. Mahajan, Growth of NIAS: Study of Crop Insurance in India, 2014

[6] Report of the Committee to Review the Implementation of Crop Insurance Schemes in India, Department of Agriculture & Cooperation, Government of India, 2014.

Pre-sowing **–** weather (temperature/rainfall), soil quality (organic content, soil nematodes, plant growth promoters, friendly bacteria and verbuscular arbuscular fungi etc. can influence sowing outcomes

Crop growth phase – in addition to all above environmental factors, water availability, pests, adequacy of pollinators, weeds and local climatic shocks or calamity events (floods/drought) can impact yields

Post production – poor storage facilities without proper aeration and temperature and humidity, losses to rodents and other animals, presence of high amounts of trace pesticides and other agrochemicals could adversely impact price realization

Overall policy and governance – promoting inefficient use of environmental resources (land and water), increasing land degradation and desertification, salinity and other stresses, choice of crops in unfavorable agro-climatic zone, agricultural subsidy resulting in high pollution etc. have had long-term impact on agriculture.

- *Agriculture production system is beset with environmental challenges with increasing risks of climate change impacts.* Even though agriculture and allied activities in India provides over 50% employment, it faces the challenges of small and marginal operational farm holdings, low soil productivity due to acidification, alkalinity and sodicity, pervasive subsidies, high inputs of agrochemicals, poor efficiency of water use, large farm labor and leases without land ownership, non-remunerative production etc. leading to debt of farmers and often resulting in farmer distress and increased number of suicides[7] - rising over 40% in 2015 over 2014. This complex situation is likely to be further compounded with erratic rainfall, high temperatures and other extreme weather events.

- *Most farmers are poor and unprepared to deal with the potential adverse impacts of climate change but, used effectively, crop insurance could be part of the resilience strategy.* The large rainfed areas are likely face increasing challenges of climate change impacts, unless a new coping strategy is developed. The poor and vulnerable households, particularly landless, are expected to face a disproportionately higher impact of climate change than economically well-off households, which usually have diversified sources of income, even within agriculture. Can crop insurance be implemented as one of the elements of a diversified strategy against climate change impacts and to address the large gaps in social equity and inclusiveness in the agriculture sector? If so, it must improve both coverage and effectiveness for maintaining continuity of agriculture finance and to serve as a risk mitigation strategy for farmers.

1.2 Social Dimensions of Indian Agriculture

- *Two thirds of India's population depend on agriculture for their livelihood.* The share of agriculture to GDP has gone down in recent years, from 30% in 1990-91 to 14.5% in 2010-11.[8] This decrease in contribution to GDP has not been accompanied by a matching reduction in the share of agriculture in employment. About 52% of the total workforce is still employed by the farm sector

[7] Accidental Deaths and Suicides in India. 2015. National Crime Records Bureau (NCRB), Ministry of Home Affairs, Government of India. Figure: 2A.1, Suicides Committed by Persons Associated with Farming Sector during 2014– 2015, p. 264.
[8] GIZ, (2013), Agricultural Livelihoods and Crop Insurance in India Situation Analysis & Assessment,

which makes more than half of the Indian population dependent on agriculture for sustenance (NSS 66th Round).

- *Dependence on monsoon makes the agriculture sector in India subject to weather related risks, often resulting in farmer distress.* Agriculture in India is mostly rain fed. Only about 47% of the total land under cultivation is irrigated.[9] As a result, yield risk is the most important agricultural risk in India given the fact that crop losses arising from production shortfalls or total crop output failure wipe out farm profits and trigger distress. Such conditions frequently lead to erosion of cultivation costs triggering a high probability of defaults by indebted farmers or inducing asset depletion and poor investment in future agricultural seasons.

- *Average size of land holding in India is small*. According to the Agricultural Census (2010-11) the average size of land holding in India is 1.15 hectare. Bulk of these are small and marginal holdings which account for 44.6% of total land holdings. 44.8% are semi-medium and medium holdings. Large holdings only account for 10.6% of total land holdings in the country.[10] This impacts productivity and exacerbates vulnerabilities of small farmers.

- *Social exclusion determines both land ownership and size of holdings*. Indian society is hierarchically stratified into castes where lower castes especially the SCs who have very little access to productive resources such as land. Scheduled Tribes (STs) who are considered the earliest inhabitants of India, also face exclusion not just of resources but also are marginalized from mainstream society and live in remote corners of the country. Land distribution closely follows social hierarchy. While the large landowners invariably belong to the upper castes, cultivators belong to the middle castes and agricultural workers largely to the scheduled castes and tribes. Land being the important socially valued asset, its unequal distribution helps maintain the hierarchical structure and strengthen the basis of dominance of the privileged groups by perpetuating inequality and deprivation in the socio-economic sphere. The table below shows the number and percentage of SC and ST Population in the five states which are covered by the Project. The incidence of landlessness is more pronounced among SCs and STs, the bulk of whom are agricultural laborers with minuscule holdings or are sharecroppers or other types of insecure tenants. Poor land ownership of the SCs and STs accounts largely for their perpetual poverty and makes them vulnerable to social injustice and exploitation. The Government of India has made a systematic endeavor to protect and promote their rights with regard to control and use of land through land reforms but the efforts are far too little compared to the enormity of the problem.

[9] The World Bank, (2013), Agricultural irrigated land (% of total agricultural land)
[10] India Agriculture Census, 2010-2011.

Table 1: Population as per Social Groups *(Census 2011)*

States	Total Population		SC Population		% of SC Population to Total Population of the state		ST Population		% of ST Population to Total Population of the State	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Maharashtra	58,243,056	54,131,277	6,767,759	6,508,139	11.62	12.02	5,315,025	5,195,188	9.13	9.60
Uttar Pradesh	104,480,510	95,331,831	18,663,920	17,021,307	17.86	17.85	581,083	553,190	0.56	0.58
Odisha	21,212,136	20,762,082	3,617,808	3,570,655	17.06	17.20	4,727,732	4,863,024	22.29	23.42
Karnataka	30,966,657	30,128,640	5,264,545	5,210,447	17.00	17.29	2,134,754	2,114,233	6.89	7.02
Gujarat	31,491,260	28,948,432	2,110,331	1,964,116	6.70	6.78	4,501,389	4,415,785	14.29	15.25

Table 2 gives the percentage of land holding by SC and ST which clearly shows that land holding among these groups are lower than other communities.

Table 2: Percentage of Land Holding among SC and ST *(Source Agricultural Census 2010-2011)*

States	% of Land Holding Among SC		% of Land Holding Among ST	
	Male	Female	Male	Female
Maharashtra	11.70	2.48	12.31	2.45
Uttar Pradesh	12.37	1.26	7.29	0.52
Odisha	18.80	0.60	28.68	1.36
Karnataka	2.20	0.56	17.81	4.02
Gujarat	3.99	0.49	14.54	0.50

- *Women's participation in agriculture is high, however, they do not own the land on which they work*. In India, women's rights to own and inherit land are largely determined by family law and the law that applies to each family varies according to their religion. The Hindu Succession Act intended to specifically improve women's ability to gain access to land by formally establishing a female's right to inherit. Despite this, rural women face specific gender based historical and cultural barriers to gaining access and control over land. However, bulk of agricultural work is done by women. This disparity in owning of asset is also seen among SCs and STs. Though women perform most agricultural labor, their lack of title of land deprives them from accruing crop insurance and makes them more vulnerable to distress and climate shocks.

- *Financial inclusion.* The penetration of financial services in the rural areas of India is very low. The reasons for low demand for financial services is attributed to a combination of factors such as low levels of income, lack of financial literacy, other bank accounts in the family, etc. On the other hand, the supply side factors include: no bank branch in the vicinity, lack of suitable products meeting the needs of the poor people, complex processes, and language barriers. The problem is more severe in the rural areas. In recent years, the CRISIL Inclusix index for 2009 and 2010 also

shows a dismal situation (Table 3), although, 2011 shows some progress in the development of financial inclusion in India.[11]

Table 3: Financial Inclusion in Regional Level *(Source CRISIL)*

Regions	Inclusix 2011	Inclusix 2010	Inclusix 2009
India	40.1	37.6	35.4
Southern Region	62.2	58.8	54.9
Western Region	38.2	35.8	33.9
Northern Region	37.1	34.8	33.3
Eastern Region	28.6	26.3	24.3
North East Region	28.5	26.5	23.8

Financial inclusion of small and marginal farmers including SCs and STs, and women are much lower compared to general population. For women, even if they have bank accounts it is difficult for them to access agricultural credit since they do not have land in their names. As a result, women are excluded from institutional credit and any insurance facility that comes with it.

- *Geographical exclusion.* Scattered population and bad connectivity in some parts of the country have led to exclusion of the people who live there as banking and insurance services do not reach them. In rural areas, exclusion of physically 'remote' areas is commonplace; these areas have poor connectivity, infrastructure and services, and may also be resource poor. It is physically difficult for inhabitants of remote areas to access services and markets and to participate in broader socio-economic processes. Even if connectivity is reasonable, areas may lack resources and be labelled 'backward,' 'disadvantaged' or 'poor,' or be vulnerable to natural disasters such as floods or droughts, which events underlie much poverty. Spatial exclusion in India now rarely covers whole districts, but it commonly applies to blocks, clusters of villages, and parts of villages. It cannot be entirely separated from economic and social exclusion as it is usually economically and socially marginalized groups that inhabit physically deprived spaces.

- *Illiteracy and lack of awareness.* An important social issue for exclusion is illiteracy and lack of awareness. Most people in the rural areas are not aware of the schemes. The paperwork that is required for filling claim forms is difficult for an average Indian farmer with a low level of literacy. As a result, even if they are insured, they are unable to claim the insurance due to lack of awareness and cumbersome paperwork.

2. Program Background and Description

Agriculture insurance coverage in India is limited as a result of limited awareness and low appetite from financial institutions. In spite of the requirement for all government-supported crop loans to be bundled with crop insurance, and Government premiums subsidies averaging $4 billion per year, an estimated less than 35% of crop loans are actually bundled with agriculture insurance and overall less than 26% of

[11] Charan Singh, et all, Financial Inclusion in India: Select Issues, Working Paper No. 474, IIM Bangalore, 2014

farming households are covered with agriculture insurance. Such limited coverage reduces the value of crop insurance as a policy tool to promote agriculture credit, protect farmers against shocks and to complement disaster relief.

The Ministry of Agriculture proposes to play a key role in responding to these needs, as a natural continuation and scaling up of its investment in agricultural insurance. Several solutions have already been identified and pilot-tested, and the proposed project aims at prioritizing these solutions and providing an actionable set of fixes that can be implemented in a time-bound manner. A comprehensive report published by the Ministry of Agriculture[12], based on nation-wide consultations held in 2014, has provided an analysis of current issues associated with crop insurance in India and identified a wide range of recommendations. At operational level, several states have successfully piloted a number of innovations that can potentially be replicated across the country. Finally, based on a long-standing non-lending technical assistance engagement with GoI dating from 2005, the World Bank Group (WBG) has also provided significant analytical work to support the implementation of crop insurance in India[13].

2.1 Proposed Program and the Results Areas

The Ministry of Agriculture and Farmers Welfare (MOAFW) has approached the World Bank for support for improving the performance of PMFBY. Accordingly, 'Agriculture Risk Resilience and Insurance Access' Prgram has been prepared with the development objective "to increase farmer access and improve service delivery standards of the PMFBY crop insurance scheme in select states in India". Even though PMFBY is a national scheme, the proposed World Bank Program will be implemented in five states (Maharashtra, Uttar Pradesh, Odisha, and Karnataka) and the lessons from this will be replicated and scaled up through the PMFBY. A 'Program For Results' (PforR) financing instrument has been selected for extending support to PMFBY. The proposed program has three Results areas supported by Disbursement Linked Indicators and a fourth Result area to strengthen Consumer Protection aspects and Regulatory Oversight of the PMFBY Program.

Results Area – 1: Improved institutional capacity for program implementation. Activities will focus on a) strengthening institutional capacity, primarily through the Technical Support Units at the Central and State levels; b) strengthening robustness and functionality of Data and Management Information Systems at the Center and the participating States; and c) strengthened Monitoring & Evaluation system.

Results Area – 2: Improved quality and efficiency of service delivery. Activities will focus on a) streamlining the enrolment process; b) streamlining the claims process; and c) strengthening crop yield estimation through technology adoption. Technological innovations, such as, mobile app-based Crop Cutting Experiments (CCEs) are likely to be scaled up along with building efficiency in the process-steps of PMFBY for ensuring faster and timely pay outs in the event of crop losses.

Results Area – 3: Enhancing inclusion. This will address the issue of potentially skewed coverage of crop insurance (including of women) through activities targeted at demand and supply side stakeholders. To strengthen delivery, activities will explore distribution of the product through diverse channels such as Self-Help Groups, India Post (including the Payments' Bank) etc. On the demand side, a range of awareness activities will be implemented to build financial literacy on crop insurance among farmers and agencies (including state governments, banks, insurers) involved in PMFBY implementation.

[12] Report of the Committee to Review the Implementation of Crop Insurance Schemes in India" (May, 2014)
[13] See WBG report "Enhancing Crop Insurance in India" (April, 2011).

Results Area – 4: Strengthened Consumer Protection and Regulatory Oversight of PMFBY Program. The crop insurance program historically has been kept outside the regulatory and supervisory purview of the insurance regulator. With the intent to increase coverage of PMFBY, including for women farmers and ensure timely pay outs, it is important to bring this under increased monitoring and regulatory oversight.

3. Environment and Social Risk Assessment (ESSA) and Mitigation Action

This ESSA looks at risk from two distinct perspectives – institutional and investment-specific. An institutionally-focused perspective is needed since the capacity of the Departments in the state level is very important for a successful implementation of the Program. An investment-focused perspective is needed since in the existing Scheme there are several issues of exclusion of women and marginalized farmers from the insurance cover. These are discussed later.

The ESSA considered the performance of PMFBY against its four objectives. ESSA provides a consistent approach to: (i) describing the relevant environmental and social systems in place, (ii) providing a perspective on current capabilities and performance, (iii) identifying major and minor environmental and social effects of the current and the proposed ARRIA Project, and (iv) recommending mitigating actions to reduce risks. Observations on capabilities and performance consider strengths and benefits, gaps or apparent weaknesses, and opportunities for improvement. Recommendations on mitigating actions inherently acknowledge that only some of these can be addressed directly by the Program.

4. Approach and Methodology

The ESSA was undertaken with the objective of ensuring that environment and social risks and impacts associated with the PMFBY are identified and (mitigation) action is built in the implementation modalities. The ESSA was carried out at two levels. National and State to understand how environment and social concerns are addressed in the existing legal, regulatory and policy framework within which crop insurance is managed; the roles, responsibilities and capacity of the key institutional stakeholders – including nodal and related departments, statutory authorities, local bodies, community institutions.

- Team: The ESSA was carried out by a team of environmental and social specialists from the World Bank.
- Methodology: ESSA included both secondary literature review (of available policy documents, relevant Acts, amendments, Rules, Government Orders and guidelines, assessment reports and independent studies) and primary study through consultations, personal interviews, group discussions, and field observations.
- Four out of five participating states were selected for ESSA (Maharashtra, Odisha, Uttar Pradesh and Karnataka). Efforts were made to include Districts which are high and low on enrolment and districts dominated by tribal populations. At the State level, the assessment focused on understanding the actual implementation on the ground and consultation and Focused Group Discussions were carried out with Insurance Agencies, Regional Rural Banks (RRBs), Primary Agricultural Credit Societies (PACS) and farmers (men and women). The team also met District and state level officials.
- Effectiveness of Grievance Redress and Citizens' Engagement Systems were also studies at the state level as well as the level of insurance agencies.

5. Objectives of PMFBY and their Environmental and Social Performance

Objective 1: Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events	
Environmental Performance	**Social Performance**
▪ PMFBY has strengthened the link between environmental parameters and agriculture by including mid-season calamities (floods and inundation), crop failures due to droughts and pests ▪ PMFBY has remained largely silent in educating farmers on minimizing crop losses due to environmental factors	▪ The intent of PMFBY strongly supports small and marginal farmers ▪ Even though small and marginal farmers are eligible under PMFBY, they often find it difficult to access crop insurance product
Objective 2: Stabilizing the income of farmers to ensure their continuance in farming	
Environmental Performance	**Social Performance**
▪ Income stabilization is presumed to arise if insurance claims are paid but no specific supply side, market based or other provisions for enhancing environmental sustainability of agriculture production under PMFBY	▪ PMFBY is liked with credit (loan) through formal institutions only for notified crops. Farmers growing other crops do not get any safety net for income stabilization. Thus, the scheme falls short in achieving the objective of stabilizing farmer income
Objective 3: Encouraging farmers to adopt innovative and modern agricultural practices	
Environmental Performance	**Social Performance**
▪ PMFBY implementation is in isolation of any other scheme therefore, no effort in encouraging farmers for adoption of innovative and modern agricultural practices ▪ PMFBY does not tie up with any resource agency to provide any technical inputs on agriculture	▪ Farmers as stakeholders have not been consulted in designing PMFBY. Dependence on technology has increased suspicions of farmers and thus there is little faith and confidence in the program
Objective 4: Ensuring flow of credit to the agriculture sector; which will contribute to food security, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting farmers from production risks	
Environmental Performance	**Social Performance**
▪ No explicit focus on food security, crop diversification and competitiveness ▪ Notifying only selected crops reduces the chance of diversification ▪ No efforts to enhance resource use efficiency and reduce input costs	▪ PMFBY only covers farmers who hold titles and have access to institutional credit. As farmers who belong to this category are those with access to resources, the program excludes the landless and marginalized who resort to informal sources of credit ▪ Only partial protection is accorded with delays in claim settlements; women and other vulnerable groups most affected

6. Relevant Legislations and Regulations

6.1 Legal and Tenancy Rights

At the time of independence, India inherited a feudal agrarian structure in which land rights were concentrated in the hands of a few landlords/zamindars, while actual cultivators/tenants did not have any right or security of tenure. Even though the nature of proprietorship varied initially under zamindari, ryotwari and mahalwari systems, the differences were narrowed over time. After independence, therefore, almost all state governments passed land reform laws for (i) abolition of intermediaries, (ii) abolition or regulation of tenancy, and (iii) imposition of ceilings on land holdings and redistribution of ceiling surplus land. The main objective was to create conditions for an agrarian economy with high levels of efficiency and equity (Second five year plan).

Most state governments have either legally banned or imposed restrictions on agricultural land leasing. Restrictive land leasing laws have forced tenancy to be informal, insecure and inefficient. Informal tenants are most insecure and inefficient, as they do not have legal sanctity and access to institutional credit, insurance and other support services.

Based on legal position, various regions of the country can be broadly grouped into the following five categories:

- States such as Kerala, Jammu & Kashmir and Manipur that have legally prohibited leasing out agricultural land without any exception.
- States such as Bihar, Karnataka, Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Uttarakhand, Himachal Pradesh, Tripura, Telangana and Odisha that allow leasing out only by certain categories of land owners, such as those suffering from physical or mental disability, widows, unmarried, separated or divorced women, members of armed forces etc. In Karnataka, only Seamen and soldiers are allowed to lease out. In some cases, privileged raiyats like Lord Jagannath in Odisha and other recognized trusts of public nature are also allowed to lease out.
- States such as Punjab, Haryana, Gujarat, Maharashtra and Assam that do not explicitly prohibit leasing, but the tenant (excepting in Haryana) acquires the right to purchase the leased land from the owner after a specified period of creation of tenancy. In Gujarat and Maharashtra, tenancy of a tenant belonging to SC/STs cannot be terminated. In Punjab, law does not ban leasing out, but provides that a tenant of a big land owner above ceiling is entitled to purchase his tenanted land on continuous possession for six years. Similarly, in Assam, tenants who have held land for at least three years consecutively can acquire ownership right on payment of 50 times the rate of revenue.
- In Andhra Pradesh, Tamil Nadu, Rajasthan and West Bengal, there is no legal ban on leasing. But there are several restrictive clauses. In West Bengal, only share-cropping is allowed and not leasing on fixed rent or fixed produce basis. In Andhra Pradesh, leasing has to be for a minimum period of six years and tenancy can be terminated only by an application to the special judicial officer on any of the specified grounds. In Tamil Nadu, there is no prohibition on leasing, but the cultivating tenants cannot be evicted except on application to Revenue Divisional Officer and on violation of conditions prescribed in the Act.

- In scheduled tribe regions, transfer of tribal land to non-tribals and in some cases even to tribals on lease basis can be permitted only by a competent authority.

The state specific legal restrictions of the participating states on who can or cannot lease out are indicated in the following table.

States	Law Governing land leasing	Nature of legal restriction on Leasing
Gujarat	Bombay Tenancy And Agricultural Lands Act 1948, as amended by Act No. 5 of 1973 (erstwhile Bombay areas)	No explicit ban on land leasing, but land owner has a risk of losing land right, due to creation of tenancy. A tenant acquires the right to purchase the land leased in within one year of lease period. Legal leases are possible only when the tenant is not in a position to exercise his/her right to purchase due to financial difficulties or otherwise.
	Saurashtra Land Reforms Act, 1951 and Prohibition of Leases Act, 1953	Renewal of lease or grant of a fresh lease after 1.9.1954 is prohibited except by persons under disability such as a widow, a minor, a member of the armed forces or persons suffering from physical or mental disability, govt, local authority, industrial and commercial undertakings.
(Kutch Area)	Bombay Tenancy and Agricultural land (Vidharbha and Kutch Area) Act, 1958, as amended by Govt. of Gujarat in 1961, 1964, 1965, 1968 and 1973).	No explicit ban on land leasing. But the Act provides for voluntary purchase of ownership right.
Karnataka	The Mysore Land Reforms Act, 1961 as amended w.e.f. 1 March, 1974	Leasing is banned excepting by a soldier or a seaman.
Maharashtra	(i) Bombay Tenancy and Agricultural Land Act, 1948, as amended in 1956 (for old Bombay area) (ii) The Hyderabad Tenancy and Agricultural Lands Act, 1950, as amended in 1954 for Marathwada- (Hyderabad area)	No explicit legal ban on leasing. But land owner has a risk, as tenant has a right to purchase the land leased by him within one year of creation of tenancy. Any tenancy created after the tillers (i.e. 1st April, 1957) day, (excepting by the serving member of armed forces) is void, as the tenants shall acquire the right to purchase. Tenant cultivating personally on 1st April, 1957, i.e. the tillers day, shall be deemed to have purchased from the land lord the ownership right up to the ceiling area.
Odisha	Orissa Land Reforms Act, 1965, as amended in 1973 and1976	Leasing agricultural land is banned except by a person under disability or under a privileged raiyat w.e.f. 1.10.1965. A person under

States	Law Governing land leasing	Nature of legal restriction on Leasing
		disability includes: (i) a widow or unmarried or separated women (ii) a minor, (iii) a person incapable of cultivating land due to physical or mental disability (iv) a serving member of armed forces (v) a raiyat whose land holding does not exceed 3 standard acres. A privileged raiyat means Lord Jagannath, any trust or institution declared as a privileged raiyat or any other religious or charitable trust of a public nature.
Uttar Pradesh	The Uttar Pradesh Zamindari Abolition Land Reforms Act, 1950	Leasing in future is banned except by a disabled person and to agriculture related educational institution. A disabled person is defined as an unmarried/divorced/separated woman, widow or a woman whose husband is incapable of cultivating due to physical or mental infirmity or a minor whose father suffers from infirmity or person who is a lunatic or an idiot or blind or a student of a recognized educational institution whose age does not exceed 25 years and whose father suffers from infirmity or a serving member of the armed forces or a person under detention or imprisonment.

6.2 Relevance of legal and regulatory framework for PMFBY

Applicable Acts/ Regulation/ policy	Objectives and Provisions	Relevance to the Program
The National Food Security Act, 2013	**Schedule III Section 31.** The Central Government, the State Governments and local authorities shall, for the purpose of advancing food and nutritional security, strive to progressively realize the objectives specified in Schedule III. PROVISIONS FOR ADVANCING FOOD SECURITY (*1*) Revitalization of Agriculture— (*a*) agrarian reforms through measures for securing interests of small and marginal farmers; (*b*) increase in investments in agriculture, including research and development,	**Relevance: Substantial** Schedule III Section 31 (1)(a) covers the interest of small and marginal farmers; PMFBY should sharpen its focus on coverage of these farmers and bring process reforms to cover their interest Schedule III Section 31 (1)(c) explicitly mentions access to credit and crop insurance; this aligns with

Applicable Acts/ Regulation/ policy	Objectives and Provisions	Relevance to the Program
	extension services, micro and minor irrigation and power to increase productivity and production; (*c*) ensuring livelihood security to farmers by way of remunerative prices, access to inputs, credit, irrigation, power, crop insurance, etc.; (*d*) prohibiting unwarranted diversion of land and water from food production.	the PMFBY objectives and can be leveraged to tie up with other complimentary schemes/programs for ensuring support for PMFBY
Insurance Regulatory and Development Authority Act, 1999 IRDA Act 1999 - as amended in 2015	**Section 25. Establishment of Insurance Advisory Committee** Sub Section 2. The Insurance Advisory Committee shall consist of not more than twenty-five members excluding ex- officio members to represent the interests of commerce, industry, transport, agriculture, consumer for a, surveyors, agents, intermediaries, organizations engaged in safety and loss prevention, research bodies and employees' association in the insurance sector	**Relevance: Low** Even though crop insurance is out of the purview of this Act, representation of the Agriculture sector in the Insurance Advisory Committee could raise certain issues with the efficiency of claims processing
The Insurance Act, 1938	**Section 32 C. Obligations of insurer in respect of rural or unorganized sector and backward classes** Every insurer shall, after the commencement of the Insurance Regulatory and Development Authority act, 1999 discharge the obligations specified under section 32B to provide life insurance or general insurance policies to the persons residing in the rural sector, workers in the unorganized or informal sector or for economically vulnerable or backward classes of the society and other categories of persons as may be specified by regulations made by the Authority and such insurance policies shall include insurance for crops.	**Relevance: Moderate** Explicit mention of crop insurance as part of general insurance in rural areas covering unorganized sector; this provision could be leveraged for improving the coverage of PMFBY
Disaster Management Act 2005	**Chapter II The National Disaster Management Authority; Section 8** Central Government shall Constitute a National Executive Committee (NEC) to assist the National Authority. The NEC is composed of Secretary level officers of the Government of India in the Ministries of home, agriculture, atomic energy, defense,	**Relevance: Low** Secretary Agriculture could help prioritize relief to small and marginal farmers in areas facing natural disasters or impacts of inclement weather

Applicable Acts/ Regulation/ policy	Objectives and Provisions	Relevance to the Program
	drinking water supply, environment and forests, finance (expenditure), health, power, rural development, science and technology, space, telecommunication, urban development, and water resources, with the Home secretary serving as the Chairperson, ex officio.	

7. Assessment of Roles, Responsibilities and Gaps in Institutional Capacity for PMFBY

Institutions and their capacities is key to successful implementation of PMFBY. **The ESSA looked at the roles, responsibilities and their capacities for implementing the PMFBY for realizing its objectives. There are several gaps in institutional capacity that are limiting the focus of the existing institutional system on only one of the objective of PMFBY, which is to provide risk cover through crop insurance. Other objectives, which could help lower the agriculture risk, are not being focused on. The following analysis gives an insight into the institutions capacity and is followed by a detailed state-wise account.**

Although the insurance product has been envisaged by the Ministry of Agriculture at the National level, its implementation varies in every state where several departments in addition to Agriculture are tasked with this responsibility. The outcome of this division of responsibilities is that implementation is variable and inter-departmental coordination is often a hurdle. Institutional capacity is an additional challenge that extends not just to the departments in the state, districts and blocks, but also to insurance companies. the following table assesses institutional capacity to conduct its roles and responsibilities in implementing PMFBY.

Institution	Roles & Responsibility	Capacity Gap Analysis
Department of Agriculture, Cooperation & Farmer Welfare (MoA)	▪ Apex authority responsible for implementing PMFBY ▪ Release of GOI share of premium subsidy ▪ Managing PMFBY portal ▪ Coordination with States for data collection	▪ Other than providing premium subsidy and monitoring of coverage, no mechanism to monitor scheme performance on other objectives ▪ Scheme implementation modalities does not have the capacity to promote sustainable agricultural practices
State Government – ▪ Department of Agriculture & Horticulture	▪ Issuing crop notification early in the beginning of the crop season ▪ Providing State share of premium subsidy	▪ Small teams and lack of capacity at the state and district level

Institution	Roles & Responsibility	Capacity Gap Analysis
▪ Department of Statistics ▪ Revenue Department ▪ Department of Sericulture ▪ Rural Development	▪ Managing the functioning of SLCCCI ▪ Conducting CCEs (through DLMC) and providing yield data within stipulated timeframes ▪ DLMC verifies proposal forms, as needed	▪ Low capacity in conducting CCEs – issues of quality and trust ▪ Inadequate budgets for CCEs ▪ Inability to provide timey premium subsidy ▪ Poor coordination with other actors who can contribute to other scheme objectives
Banks and FIs	▪ Provide agricultural loans ▪ Collect farmer share of premiums (deducted from loan) ▪ Maintain records of proposal forms (at disbursing branch)	▪ No receipts issued against premiums deducted ▪ Poor record maintenance, delay in entering data in portal ▪ Repetition of fields in data entry at various levels
Implementing Agencies (public and private insurance companies)	▪ Provides crop insurance cover ▪ Deals with nodal points of Banks, generally at district level, and not directly with farmers ▪ Participate in CCEs ▪ Calculate and settle claims with the Banks if crop failure established as per PMFBY	▪ Limited capacity to cross check/verify claims ▪ Delays in claim processing ▪ Fewer staff for participating in CCEs ▪ Low or no capacity to work with agriculture sector in reducing risk of crop failure
Farmer Cooperatives and Producer Companies	▪ No specific role or responsibility for PMFBY	▪ Can play important roles in improving coverage, particularly of poor and marginal farmers ▪ Can provide feedback for designing better insurance products
Krishi Vigyan Kendras (KVK)	▪ No specific role assigned for PMFBY	▪ Can play important role in meeting other objectives of PMFBY especially in rolling out the scheme to non-loanees and non-title holders
Forest Department	▪ To compensate for losses arising out of crop depredation by wildlife (even for non-notified and uninsured crops)	▪ Low capacity to verify losses ▪ Delay is settling claims ▪ Potential to influence ST farmers
State Natural Disaster Monitoring Centre	▪ Establish weather stations ▪ Monitor drought and alert farmers on weather conditions	▪ Variable capacity and innovation at the state level

7.1 Institutional Responsibilities - Ministry of Agriculture and State-wise Assessment

The Department of Agricultural Cooperation and Farmers' Welfare (DAC&FW) under Ministry of Agriculture is responsible for implementation of PMFBY at the center. It works closely with NABARD and Insurance Agencies for providing crop loans to the farmers. At the state level there are more than one Department which is responsible. This is because of the CCE, the main instrument for measuring crop yield, is being handled by different Departments.

7.1.1 Odisha

In Odisha, three Departments handle CCE – Agriculture, Revenue and Department of Statistics. The total number of CCEs being handled in Odisha are divided between these three Departments as 2:1.5:0.5 (Economics and Statistics: Agriculture: Revenue). Capacity in terms of human resources in each of these Department is very low with one or two persons managing the entire Scheme. This causes extreme pressure on the team for them to manage this huge task. Moreover, there is lack of technical capacity at the team to undertake outreach and capacity building work at the level of the farmers and banks in the rural areas which is required to implement a program like this. There are no one at the District or State level looking after crop insurance. A District Coordination Committee is set up at the district level chaired by the District Collector to monitor the CCE. Similarly, a Block Level Monitoring Committee consisting of the Tehsildar, Assistant Agriculture Officer, Assistant Horticulture Officer, Cooperative Extension Officer and a representative of the Insurance Company is formed to monitor the crop loss. But there is no fixed schedule of their meeting. Below the Block level one Village Agricultural Worker per GP is responsible for CCE in his/her area. In Odisha there are about 30% of women VAWs.

7.1.2 Maharashtra

In Maharashtra the team is also very small with only four or five people at the state level. Maharashtra has coordinators at the district level who are responsible for the scheme. They have also allotted money for communication and outreach work. A state level Coordination Committee on Crop Insurance headed by the Chief Secretary is responsible for the program at the state level. Similar coordination committees are also in place in the District and Block Level. Below the Block level are the Circle Officers under whom are the Village Agricultural Workers.

7.1.3 Uttar Pradesh

Three Departments in the state are coordinating PMFBY in the state. The Agriculture Statistics Department is the nodal department for implementing the scheme at the state. However, implementation is handled by the Agriculture Department at the district and block level. Further, CCEs which are the key for estimating yield in PMFBY, are being conducted by the *Lekhpal* (Revenue Officer) who belongs to the Revenue Department. There is acute shortage of human resource in the departments of the state. For example, there are positions for 155 Technical Assistant Agriculture at the Naya Panchayat level. Out of these, only 48 positions are filled. Of these, 18 are responsible for seed distribution, leaving only 30 people in the entire state to cover crop insurance and other activities. Moreover, as per the Guidelines of PMFBY four CCEs have to be conducted at each GP for each crop. This makes a total of over 4 lakh CCEs to be conducted in the state, at the rate of 80 CCEs per *Lekhpal*. This is an enormous task as the CCEs has to be conducted in only 15 days (harvest time). As a result, there are a lot of issues in the quality of CCEs that are conducted. Few insurance companies operate in the state. They are supposed to have offices at

the District and Block level, but most of it is only on paper. Another issue is the amount of money that is allotted per CCE. At present only Rs. 100/- is allotted for each CCE (Rs. 40/- for the *Lekhpal,* Rs. 40 for two laborers assisting the person and Rs. 20/- as compensation to the farmer). For an activity that is so time consuming taking an entire day for one CCE, this amount is meagre and insufficient.

Registration of non-loanee farmers in the state is extremely low. In 2017 kharif, only 1 lakh farmers are registered as non-loanees. This is despite a lot of attempts made by the state. In each Block they conducted 5 awareness cum registration camps to register non-loanee farmers. Despite these attempts the number is still very low. One of the reasons for this is that the state is a "low risk" state with good rainfall and availability of irrigated land.

7.1.4 Karnataka

In Karnataka, the role of the insurance companies is very low. The state has a substantial coverage of non-loanee farmers. One of the reason for this is that there have been large defaults in agriculture loan in the past as a result banks do not provide loans to farmers who have defaulted once. But the PMFBY is found to be beneficial and farmers line up for buying insurance from the local banks. During the field visit it was seen that it is only the Agriculture Department and the local banks who are responsible for PMFBY in the state. Department of Agriculture is the nodal Department in the State. There are five Departments in the state involved in conducting CCEs in the state – Revenue, Agriculture, Horticulture, Sericulture and Rural Development. Each of these Departments are allotted a quota of CCEs by the State Department of Statistics and Economics.

The issue of lack of Assistant Agriculture Officer at the Hobli level (7-9 GPs form a Hobli, this is a unique administrative unit in Karnataka) is very acute with an average of 40% of the positions vacant in the state. This puts additional pressure on the existing officers as they have to conduct more than 40 CCEs in the limited harvest time.

Karnataka has taken a lot of innovative technological initiatives in terms of setting up weather stations at all GPs with censors to measure rainfall, temperature, humidity, wind speed and direction every fifteen minutes. The State Natural Disaster Monitoring Centre has been doing this as a part of drought monitoring and have been sending SMS alerts to farmers on weather conditions. This has been very useful for the farmers and there are a lot of demand among them who often call up the center before spraying pesticides etc.

7.2 Issues raised by stakeholders

A stakeholder is defined as an individual/institution who can influence/or be influenced by program interventions. Social Systems Assessment for the project was carried out through extensive stakeholder consultations and impact assessments. Analytical part involves mapping the stakeholders, sharing the 'program' with them, engage in discussions (individually or in a group) and evince a feedback. The stakeholders identified at different levels- national, state and community level. Issues arising out of the discussion with various stakeholders are given below.

7.2.1 National Level

At the national level it is proposed to meet with Niti Aayog, senior officials of the Ministry, NABARD, Insurance Companies and Banks in the proposed national consultation.

7.2.2 State Level

- Relevant Departments at the state level:
  - *Lack of capacity* in terms of human resources at the state level is one of the major issues for the state. In Odisha there is only a team of two people at the state level to manage this entire scheme. Moreover, this team lack technical expertise.
  - *Managing Expectations.* One of the greatest challenge is to make people's expectations more realistic. In Maharashtra the awareness campaigns have generated a huge interest in the scheme and helped in large number of enrollment. But people are still not fully aware of what would trigger payments as a result there is a lot of dissatisfaction among farmers as they feel that the government has taken a premium and are now not paying them their due.
  - *Managing CCEs*. CCEs are the main tool by which insurance claims are made. But the capacity to manage CCEs is very low at the state level. With PMFBY the protocol to cover a total number of CCEs per district has increased but there has been no increase in terms of people or budget. There appears to be a lack of reliability and transparency of CCEs. Moral hazards and political pressures influence the quality of CCEs.
  - *Increasing participation of farmers including non-loanee farmers*. For non-loanees the only point of access are the CSCs.
  - *Inadequate budget for communication and outreach functions*. Maharashtra had a big budget towards communication and outreach and the Chief Minister himself took interest in the campaigns. But in Odisha there had been no budget allocation for communication till last FY. In this FY a small budget is allocated for which they have planned certain activities like wall writing, advertisement on mass media like radio and TV. But to educate the community on the product in detail a much larger budget is necessary.
  - *Land holding details are not updated and/or digitized.* This results in excess insurance claims because at times on paper land is divided within the family but in reality, the land remains in one piece. In such cases each member of the family claim insurance over the same piece of land.
  - *Lack of accountability of insurance companies*. Insurance companies only settles claims which come to them. Farmers do not know how to raise claims. The fine prints of the insurance companies keep on evolving. This lack of accountability is also because of lack of regulatory mechanism on crop insurance at the national level
  - *Diversification of insurance products*. Same insurance product may not be suitable for all farmers. Smaller farmers do not need insurance but a different kind of product which is a measure for social protection and helps in their sustenance.
- Insurance Companies
  - *Lack of continuity of business.* The insurance companies get contract through open bids only for one season (Kharif or Rabi) therefore they are not willing to hire people on the ground to do marketing of their product. This lack of capacity on the ground affects their ability to respond to any local level crop damage (water logging etc.).
  - *Quality of CCEs.* The insurance companies claim that the CCEs that are conducted are of low quality and they cannot be trusted for settlement of claims. This is because there is a lot of pressure from the local community to keep the yield at a low level so that they can claim insurance. They themselves are not able to be present in all the CCEs because they do not

have enough manpower on the ground. Use of technology like drones etc. is one way by which the quality of CCEs can improve and become more credible.

- *People make wrong claims.* Some claims that come to them for settlement do not have proper documentation in terms of papers that are required to be filed (land documents etc.).

7.2.3 District/ Block/ GP Level

- PACS
  - Lack of awareness of the PACS members about the Scheme as a result they are unable to give correct information to its members.
- CSCs
  - CSCs are the most common point for accessing insurance for non-loanee farmers in Odisha and Maharashtra. But connectivity at the CSC level is very poor in some of the interior districts in the state which makes it difficult for them to service their clients.
- RRBs and Cooperative Banks
  - With limited capacity at the local level the banks are not very keen to serve non-loanee farmers. This is especially seen in UP. Whereas in Maharashtra, the local banks are very active in servicing the non-loanee farmers. They however feel that they should be given extra support by the insurance companies during the time registration is being made for non-loanee farmers
- District and village level Agricultural Workers
  - *Too much pressure on VAWs for CCEs.* In PMFBY the number of CCEs have increased whereas there are no commensurate increase in the budget or the number of VAWs who do CCEs. Since CCEs should be conducted within a short window of time (about one week or two weeks) during harvest, it puts a lot of time pressure on the team to complete the work. As a result, the quality of CCE suffers.
  - *Low budget for conducting CCE.* In UP and Karnataka Rs. 100 and Rs. 200 is allotted respectively for conducting each CCE. This is hardly adequate for a task which requires almost half day work.
  - *Political pressure* on the VAWs during CCEs is often very high to keep the yield low. Under such circumstances it sometimes becomes difficult for them to conduct a fair and sanitized CCE at the local level.
- Farmers and Share Croppers (men and women; loanee and non-loanee)
  - The insurance agents are not reaching on time to register localized damage.
  - Very low awareness among farmers about the product, the triggers and its protocols.
  - For small farmers scale of financing is so small that it does not make sense to take an insurance.
  - Loanee farmers do not have a copy of the insurance certificate in their hands so they do not know what the reasons why they are not paid the claim amount.
  - Difficulty in accessing insurance cover for non-loanee farmers. Presently only the CSCs is the only place where they can have access to the insurance.
  - The farmers are not paid their claim amount for almost one year (some parts of Maharashtra)
  - Insurance company is not accessible to the farmers and hence they crowd the Agriculture Department office for any issues that they may have on the product.
  - All the crops that are grown in the GP are not covered under PMFBY.

- Tribal farmers
  - Tribals without land title documents in states like Odisha and Karnataka are excluded from the scheme.

8. Social Assessment and Gender Analysis

An analysis of the social issues and conditions of Indian farmers, as described above, has revealed that the present PMFBY has inadvertently resulted in excluding a large number of farmers from its purview. This is mostly due to the way in which the scheme has been designed. These issues are discussed below.

- ***Notification of crops***. The main reasons for exclusion of large number of farmers from PMFBY were because of certain issues in the design of the Scheme. The scheme notified only a limited number of crops whereas farmers grew a far greater variety of crops. These large number of local variety are not covered under the insurance. Even crops which are widely grown like potato in UP are not covered under insurance as the required 20 hectares in each GP under the crop is not met. Many a times, bankers are push for a larger amount of loan to the farmers thereby giving them loan for crops which are not under the notified list. Therefore, though the farmer may be growing a crop under the notified list, his/her crops are not covered because in the bank papers the loan taken is for some other crop. One important issue that was seen in Karnataka was that bankers are reluctant to give credit for rain fed crops, but the farmers, who are mostly tribal register under the scheme as non-loanees.

- ***Access to non-loanees***. Registration of non-loanees under the Scheme is one of the most important challenge. Since the insurance product is tied with the bank loan the farmers who avail loan for the notified crops have insurance amount automatically deducted from the loan amount. Though PMFBY does not restrict itself only to loanee farmers, but the way the system is organized the non-title holders who are mostly SCs and STs and women are excluded from the insurance cover. Another reason for lack of access to non-loanees is limited points from where insurance can be purchased. At present it is only the Customer Service Centres (CSCs) at the GP level and in case of Karnataka the local Banks, where one can access the insurance. Neither the insurance agents on the ground nor any other more accessible points like seed or fertilizer outlets nor post offices etc. are accessible for a non-loanee farmer to access PMFBY. In Karnataka the lack of presence of insurance agents at the community level is a major issue. It is only the Agriculture Department which is running the Scheme.

- ***Exclusion of non-title holders from the scheme***. The poor and the marginalized who are mostly people from SC and ST community do not have legal title to the land. They work in agriculture mostly as tenants and share croppers. Different states have different set of laws regarding access to bank loan for share croppers and tenants for example in Maharashtra the tenants are given legal recognition whereas in Odisha and Karnataka they do not have any legal status. In UP, there is no issue for the insurance company to cover non-title holders, provided they get it in writing in a stamp paper from the owner that any claim that accrue to them will be shared with the share croppers. Without legal recognition, share croppers and non-title holders have no access to crop insurance. As a result, they are also denied crop insurance. In case the land owner insures the

crops, the benefit of the insurance is given to the land lord and the tenants are not covered for the loss of livelihoods that they suffer due to damage of crops.

- ***Lack of awareness***. Awareness among farmers about the scheme is very low among the community. This is not only for the farmers but also for RRB officials and others involved in the implementation of the scheme. As a result, there is a lot of misunderstanding on important issues like notified crops, notified circles, insured sum, triggers, localized damage, etc. This has led to lack of credibility in the community of the Scheme as a whole. The Scheme is viewed by the farmers as any other entitlement scheme where the payouts are given to the people who have registered themselves (like pensions, scholarships etc.). Therefore, the whole concept of crop damage and claim is not well understood. Moreover, farmers feel that since they are giving a premium, they should get some benefit if they do not make any claims (non-claim bonus etc.).

- ***Lack of Capacity at the State, District, and Block Level.*** The current PMFBY requires 4 CCEs to be conducted for each notified crop at each GP level. This is almost three times more the number of CCEs that were conducted under the previous Scheme. However, there has been no commensurate increase in the number of primary workers in the field level who are responsible for CCEs. This is an extremely challenging situation as there is tremendous pressure on a small team to conduct the required number of CCEs in a short time. This leads to compromise in quality of the CCE conducted which further leads to mistrust between the insurance agencies and the officials.

- ***Cost of Finance***. The cost of finance per hectare is fixed by the bank according to each crop. Hence farmers with very small land holding hardly take any loan from the banks for cultivation. Their main investment is their labor. Therefore, for them it is not viable for to take a crop insurance as their claims will be extremely low. In case of any damage to their crops they would require social assistance rather than an insurance cover.

- ***Viability of coverage for small holders***. Average land holding in India is extremely small. As per Agriculture Census 2010-11, small and marginal holdings of less than 2 hectares account for 85 percent of the total operational holdings and 44 percent of the total operated area. The average size of holdings for all operational classes (small & marginal, medium and large) have declined over the years and for all classes put together it has come down to 1.16 hectare in 2010-11 from 2.82 hectare in 1970-71.[14] Between 2000-01 and 2010-11, the number of marginal holdings increased from 75.41 million to 92.83 million, a rise of 23% and number of small holdings increased from 22.70 million to 24.78 million (9% rise).[15] Such small holdings make it unviable for insurance companies to service them.

- ***Gender Gap***. Gender gap analysis for this program is done in two levels:
    - At the community level and
    - At the institution level

[14] State of Indian Agriculture 2012-13
[15] State of Indian Agriculture 2015-16

According to a study conducted by the World Bank around 86% of women in rural India are dependent on agriculture, yet less than 10% own land, which is the most important household asset to support their families and provide food, nutrition and income security. Women do two-third of the world's work and produce 60-80% of Africa's and Asia's food, and 40% of Latin America's. Yet they earn only one tenth of the world's income and own less than 1% of the world's property.[16]

Women are the backbone of agricultural workforce not only in India but also globally. In rural India, the percentage of women who depend on agriculture for their livelihood is as high as 84%. Women make up about 33% of cultivators and about 47% percent of agricultural laborers. In India women play a significant and crucial role in agricultural development and allied fields including in the main crop production, livestock production, horticulture, post-harvest operations, agro/social forestry, fisheries, etc. Women toil in the fields—planting, sowing, weeding, and harvesting, they harvest and process the produce, but men largely control the market and income. The nature and extent of women's involvement in agriculture varies greatly from region to region. Even within a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle. But regardless of these variations, there is hardly any activity in agricultural production, except ploughing in which women are not actively involved. Studies on women in agriculture conducted in India and other developing and under developed countries all point to the conclusion that women contribute far more to agricultural production than has generally been acknowledged.

Despite their role in agriculture, women are not considered "farmers". This is because despite legal reforms in India, they do not own land in their name. Only a very small percentage of women have land in their names or in joint names with their husbands. As a result, they form the largest group of landless laborers with little real security in case of break-up of the family owing to death or divorce.

Inheritance laws and customs are also discriminatory in that land reform and settlement programs usually give sole title and hence the security needed for obtaining production credits to the husband. Land becomes particularly critical when a woman becomes head of the household, when her husband migrates for work, abandons her, divorces her or dies. In India, studies reveal that between 20% to 35% of households are headed by women. The traditional system of land rights still followed in rural India gives women sustenance but hardly any ownership. This is because women have been conditioned to prefer "security of the family" rather than independence. Generally, the daughters waive their land rights in favor of their brothers, to avoid being denounced as "selfish" and for the risk of being alienated from their natal families. In such families although women take decisions in farming, they cannot access bank loan as the assets are not in their names.

Apart from social and cultural dimensions where the insurance is mostly available at the local banks, very few women are able to access them because banks as an institution is seen to be "gender unfriendly". Numerous studies on financial inclusion have illustrated that one of the

[16] Sanjay Patnaik and Sarita Pradhan, "Securing Land Rights for Women through Institutional and Policy Reforms", The World bank, 2013.

reasons women do not like to go to banks is because of the gender bias of the bankers. The success of micro finance programs highlights that women do need credit and are able to productively utilize loans but they do not prefer to go to the banks.

Another important dimension in rural India is the existence of community-based organizations like Water Users' Associations (WUA) or Self Help Groups (SHGs) etc. Several national programs like NRLM and programs run by various national and international NGOs have adopted this strategy of forming women's collectives at the grassroots level which is used as a platform for various economic activities as well as social and political empowerment. Under NRLM alone, 7.75 million women from poor rural households into 677,000 (SHGs). These women groups have been very active in the rural areas. In the participating states (Maharashtra, Odisha, Gujarat, UP, and Karnataka) many of these CBOs especially SHGs have been undertaking numerous enterprises at the local level. Due to their deep penetration and outreach they form an important social capital at the grassroots level and are involved in implementing several Government programs at the village level such as the Mid-Day Meal scheme, Swachh Bharat Mission, NREGA etc.

At the institutional level, the number of women working in the Agriculture Department of state governments at the grassroots level also varies from state to state. In Odisha and Maharashtra, there are women work as Village Agricultural Workers (VAW), Block and District Coordinators in various states. VAWs are involved in conducting CCEs – the main tool for estimating yield for insurance. In UP, there is hardly any woman in the district and block level working with the department. These women have limited training and capacity to undertake CCEs is a scientific manner for credible results. Very few women are employed by insurance agencies as outreach workers which poses a hurdle in bringing the insurance product to women farmers.

- ***Citizen's Engagement***. As per statutory requirements all states have a State Level Coordination Committee on Crop Insurance (SLCCCI) and District Level Monitoring Committee for proper management of the Scheme. However, they are not very effective in securing ongoing engagement with citizens. Maharashtra had launched a state wise campaign through mass media and other local media on raising awareness of the people on the Scheme. This helped to increase registration for the Scheme but it was found to be inadequate for overall education and awareness building on all aspects of the Scheme. Odisha, on the other hand, has earmarked a small amount for communication for this financial year. UP has undertaken a number of activities to engage with the farmers. They have organized five block level awareness camps in each block to register farmers for the Scheme. Apart from these camps, they also conduct *Farmers Pathshala*, which is an education program for local farmers. In these events, PMFBY is discussed in great details with them. In Maharashtra, the Department has been playing a very crucial role in sensitizing and raising awareness of the farmers on the Scheme through various pamphlets, and regular meetings.

9. Environmental Assessment – Key Findings

The PMFBY, on its own, doesn't have any significant adverse environmental impacts or risks. It objectives are sustainability oriented and provide a safety net to farmers, especially small and marginal farmers. Based on field visits and interactions with a range of stakeholders, and the proposed scope of program support to the PMFBY, it is assessed that the proposed program is unlikely to have any significant adverse

impacts on the environment. This is primarily as the proposed program will support improving the overall process and internal controls, and the service delivery standards[17] of PMFBY. In addition, proposed investments in building a robust MIS and strengthened M&E system should help in more informed, and timely policy decisions to address any distortions including unintended adverse environmental impacts.

In its current form, the PMFBY is not able to meet one of its objectives of 'encouraging farmers to adopt innovative and modern agricultural practices'. However, the PMFBY could be implemented in an integrated manner with other agriculture sector schemes to address some of the environmental externalities due to weather based and yield-based crop (index) insurance program. It could also help increase farmer resilience to uncertainties associated with climate change effects. The proposed environmental actions/recommendations will help achieve this and strengthen the existing regulatory, operational and institutional systems.

The following issues and risks associated with environmental externalities and PMFBY are identified:

- ***Choice of crops for notification.*** Keeping certain hardy crops with low risk of failure out of the notification encourages the farmer to continue with these. It adversely impacts crop diversification and promotes cropping of water intensive crops, such as, sugarcane. This result in continued depletion of groundwater in several areas. If the farmers are to pay a premium irrespective of the crop sown, it may lead to growing crops that have a better market demand.

- ***Relationship between area-based indemnity, high input requiring crops and premiums.*** Crop insurance premiums are capped at 2% for *Kharif* and 1.5% for *Rabi* irrespective of the high level of inputs (irrigation water, fertilizers and pesticides) required. For example, paddy and wheat grown in Uttar Pradesh (UP). If premiums are proportionately linked with level of indemnity offered for such crops, it may positively influence crop diversification.

- ***Crop insurance cover and possible promotion of unsustainable agricultural practices.*** Crop insurance providers (and/or associated agricultural loan providers) might require farmers to adopt specific perceived "loss-prevention" measures such as prophylactic use of pesticides in order to qualify for the insurance/loan. Further, the availability of crop insurance can encourage farmers to expand cultivation into natural habitats which might otherwise be left in a natural state. For example, cultivation of arid or semi-arid areas might become more attractive if the farmer can expect insurance to cover losses resulting from insufficient rain.

10. Impact Assessment

[17] Use of technology to improve the transparency and efficiency of crop loss assessments such as mobile apps for crop cutting experiments and the use of remote sensing and other geospatial technologies to improve yield loss assessments. The program is also supporting the setting-up of "one-weather data portal" wherein weather data from both public and private sector players will be hosted, this will enable access to more granular weather data to conduct both loss assessments and improve the product design.

Positive Impact	Negative Impact	Mitigation measures incorporated in the program design
Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events	Farmers do not get insurance pay out on time and therefore get into debts.	Capacity building of state officials, bankers and insurance agents to expedite claims from farmers. Developing of a scientific way of doing CCEs which are more reliable and credible.
	Non loanee farmers are not covered.	Develop strategies for outreach to non loanee farmers.
	Non-title holders like share croppers and women are not covered.	Develop appropriate products for share croppers and women to increase their coverage.
	Only a limited number of crops are covered under the Scheme.	De-link notified crops from insurance cover.
Stabilizing the income of farmers to ensure their continuance in farming	Only notified crops are covered. Some crops which are grown in tribal/hilly areas in small patches are not covered.	De-linking notification list with crop insurance.
	Share croppers are excluded from the coverage.	Customize product to benefit share croppers.
	Women farmers who do not own land are excluded.	Develop products for non-title holder women farmers.
Insurance premium is very small (Kharif 1.5%, Rabi 2% and Cash Crops 5%). It is largely subsidized by the government	For small and marginal farmers payment of this small amount is also a large sum of money for them to spare for a product like insurance.	Develop special products for small and marginal farmers for purposes of social security which is given to them like a Direct Benefit Transfer (DBT) in case of loss of their crops.
Both loanee and non-loanee farmers are covered.	The access of insurance for non-loanee farmers is very low and there are only limited places where they can buy the insurance.	Expand the network of points where farmers can access insurance through a cadre of “Bima Mitras” at the grassroots level.

Positive Impact	Negative Impact	Mitigation measures incorporated in the program design
	Women, who are non-title holders, are not covered as they do not access bank loans.	Special product designed for non-title holders which covers women farmers.
Employment opportunity for a large number of village level workers (men and women) in performing CCE.	Non-availability of suitable people at the community level to undertake CCE.	Develop a training module and a roll out plan for CCE for community level workers.

11. Assessment of Core Principles

Core Principle 1

Environmental and social management procedures and processes are designed to (a) promote environmental and social sustainability in the program design; (b) avoid, minimize, or mitigate against adverse impacts; and (c) promote informed decision-making relating to a program's environmental and social effects.

Applicability

This principle is applicable. In its current form, implementation of PMFBY has no focus on promoting environmental and social sustainability. The entire scheme is implemented in isolation of other complimentary and/or synergistic schemes and programs. In fact, the scheme implementation doesn't reach the farmer level, thereby, eroding any possibility of educating and alerting farmers for improving sustainability of farming systems, avoiding, minimizing and mitigating adverse impacts and taking informed decision to lower the environmental and climate footprint of the agriculture production system. To ensure sustainability, minimize risks and promote informed decision making, it is extremely important to bring credibility into the process of Yield Estimation and reduce the time lag between claim submission and payouts. To achieve this, the entire CCE system needs to be strengthened together with introduction of technology, capacity enhancement of state and District level officials. The insurance agencies should be more transparent in informing the farmers about how to register claims and reasons for non-payments.

Strengths

The Program proposes to strengthen the capacity at the national and state levels by setting up technical support units (TSU) in the central and state levels to boost up the technical capacity of the teams. Encouraging developments in use of remote sensing technology and mobile based apps were observed in Gujarat and Karnataka. It also proposes to strengthen the CCE process by using modern technology. In order to increase insurance coverage to non-loanees, the Project will also look into developing new insurance product/s for inclusion of small and marginal farmers including non-title holders especially women farmers and carry out a BCC campaign for all stakeholders at various levels.

The sustainability aspects and promotion of modern agricultural practices, including climate smart and conservation agriculture approaches, can be achieved using the existing extension system. This will require investing in building capacity of the KVKs and other extension workers.

Gaps and Risks

Crop insurance is an emotive issue with lot of political pressure. Hence management of people's expectations from the Scheme and keeping it realistic is one of the major risks of the Program. Other risks like exclusion of women and small and marginalized farmers will also need to be addressed through a targeted approach.

Low institutional capacity poses risks in the current design and implementation of PMFBY. The design does not take into account institutional capacities and resources. For instance, the IU is now at GP level, which has significantly increased the number of CCEs required to be taken up (from an earlier 1.5 million to about 10 million). However, there is no matching increase in financial and human resources to conduct the CCEs. Broadening of Coverage to include prevented planting, mid-season localized losses, and post-harvest losses require development of specialist crop loss reporting and adjustment systems and procedures in each State, which is currently lacking.

Core Principle 2

Environmental and social management procedures and processes are designed to avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program

Applicability

This principle is not applicable. Interventions proposed under the program would not impact natural habitats and physical cultural resources. Area under cultivation has remained stable (with minor variations) over several decades but number of crop cycles on the same farm has increased resulting in higher crop intensity. It is unlikely that access to crop insurance will lead to any loss of any natural habitats. The program will support integration of agriculture insurance scheme with other national and state level schemes to scale up agricultural good practices that would further help reduce the impacts of agriculture sector on natural habitats and physical cultural resources.

Strengths

Not Applicable

Gaps and Risks

Not Applicable

Core Principle 3

Environmental and social management procedures and processes are designed to protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and, (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazard.

Applicability

This principle is applicable. While the program is not supporting interventions on agricultural production, and only improving the delivery of crop insurance program, the current agricultural practices expose farmers (and other related stakeholders) to high level of exposure to pesticides, some of which are highly toxic. This practice is counterproductive to one of the objectives of PMFBY – promoting good agricultural practices.

Strengths

The program support will address the capacity strengthening of the existing system for integrating mitigation actions to educate the farmer and increase their awareness regarding use of toxic chemicals. It will help improving occupational health and safety practices at farm level in procuring, storing, applying, managing and disposing pesticides. This will be done by aligning the program with other complimentary schemes and the existing extension system.

Gaps and Risks

The current implementation mechanism and institutional arrangement for PMFBY doesn't focus on occupational health and safety. There is a risk that the current low capacity may not be adequate to address this gap. The use of existing extension system will help address that risk.

Core Principle 4

Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assists the affected people in improving, or at the minimum restoring, their livelihoods and living standards.

Applicability

The Project aims strengthening yield assessment through improving CCE methodology; improving crop insurance service delivery and expanding coverage through promotion and awareness. To improve weather forecasting, the departments in the state plan to set up weather stations at the local level. These weather stations in Maharashtra would be in a PPP mode where the government will provide the space to set up the infrastructure and it will be managed by a private service provider. The service provider in turn will supply the weather data to the government. UP plans to set up two weather stations at each Blocks. But this will not require any additional land as these will be set up on the roof of government buildings like schools, hospitals, GP office etc. Karnataka already has a very good network of local weather stations as a part of its State Natural Disaster Monitoring Centre network. But this arrangement will not require any land acquisition. Hence, the Principle is not applicable.

Strengths

No negative impacts are foreseen.

Gaps and Risks

Gaps and risks relate to monitoring and maintenance of weather stations.

Core Principle 5

Give due consideration to the cultural appropriateness of, and equitable access to, program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups.

Applicability

The scope and criteria of coverage of PMFBY leads to exclusion of several groups including small and marginal farmers who are mostly from SC and ST community as well as women.

- *Lack of title on Land.* Most farmers who currently access PMFBY are those who take loans from banks for cultivation. Since agriculture is a state subject, legal status given to share croppers and

tenants/lessees varies from state to state. Thus, landless farmers and share croppers in some states cannot access loans as they require some form of collateral to be eligible for loans. They therefore, miss out on the insurance scheme. Given that Indian society is stratified, and land distribution and ownership correspond to this social hierarchy, lower castes have very little access to productive assets like land. Similarly, Scheduled Tribes have very little land holding and, in many states, cultivate on forest land without title or usage rights. This leads to exclusion of poor and marginalized social groups from accessing the insurance policy.

- *Non-Loanees*. Apart from share croppers, small and marginal farmers and women are also excluded from the Scheme as they do not access bank loans either because their land holdings are too small to cover cost of finance or because they do not have proper titles (share croppers and women) or because the banking system is very insensitive to the concerns of the poor. Thus, registration of non-loanees, is one of the most important points of exclusion. Though PMFBY does not restrict itself only to loanee farmers, but the way the system is organized the non-title holders and women are excluded from the insurance cover. One reason for this is the limited points of access of the insurance product for non-loanees which are at present only through the Customer Care Centres (CSCs) at the GP level.

- *Non-title Holders*. The poor and the marginalized who are mostly people from SC and ST community do not have legal title to the land. They work in agriculture mostly as tenants and share croppers. Different states have different set of laws regarding access to bank loan for share croppers and tenants for example in Maharashtra the tenants are given legal recognition whereas in Odisha they do not have any legal status. Lack of land title is a major impediment for people of these marginalized communities to access loan from institutional sources like banks. As a result, they are also denied crop insurance. In cases the landowner insures the crops, the landowner benefits from the insurance as tenants are not covered against loss of livelihoods that they suffer crop damage.

- *Lack of awareness.* General awareness among farmers about the product was low (notified crops, notified circles, insured sum, triggers, localized damage, etc.). Moreover, general awareness about insurance is low and there is a general perception among farmers to view this Scheme as any other entitlement scheme where the payout is given to the people who have registered themselves (like pensions, scholarships etc.).

- *Gender based exclusion.* Women toil in the fields—planting, sowing, weeding, and harvesting, they harvest and process the produce, but men largely control the market and income. Despite their role in agriculture, as explained in the earlier section, they are not considered “farmers”. This is because they do not own land in their names.

  Inheritance laws and customs discriminate against women and land reform and settlement programs usually give sole title and hence the security needed for obtaining production credits to the male member of the family whether husbands, brothers or sons. However, with the rise of women headed households in the rural areas where the men migrate out because of work, security of tenure has become more crucial for the woman.

Apart from social and cultural dimensions, very few women access institutional credit as banks are seen to be "gender unfriendly".

Strengths

The Program is expected to address the issue of insurance in several ways:

- Develop appropriate products to address needs of small and marginal farmers. The small and marginal farmers need social security more than an insurance cover in case of damage of their crops. This is because their investment in the land is mostly their labor and very little in terms of agricultural inputs. The program would develop various products to address specific needs of small and marginal farmers.

- Denotification of crops. The Project proposes to de link list of notifies crops to the insurance cover. This will help more farmers to benefit from the scheme than at present.

- Develop multiple strategies to provide access to non-loanee farmers through various points of outreach and specific products. By this, farmers who do not access loans because they are non-title holders like share croppers and women would be able to access the insurance cover.

- The grassroots level women groups that are present in the states could help the program in several ways. Since most of these women are also farmers, they could be a source for non-loanee farmers to access PMFBY. SHG program across the country have developed a cadre of "Bank Mitras", who are women from the community who act as a liaison between the grassroots women and the banks. This has proved to be an extremely successful strategy which could be replicated in form of "Bima Mitras" (Insurance Agents) in the case of this project. These Bima Mitras could also act as the first level of Grievance Redress Mechanism and people could file complaints with them.

- Capacity building on various dimensions for all the stakeholders. The Program will undertake a Behavior Change Communication (BCC) campaign intended for all stakeholders such as farmers, bankers, officials, insurance agents as well as legislators in the national and state level. The BCC plan would have multiple strategies including one-o-one dialogue to campaigns on mass media which would make all stakeholders aware of the details of the product/s, triggers for claims, notification of localized damage, to register claims and also how and where to complain in case they do not get their insurance claim.

- The Program is expected to train a large number of men and women at the grassroots level to do CCEs. This is expected to provide economic opportunities for women to participate in the labor force through engaging as CCE workers.

Gaps and Risks

- Low capacity at the state level. It was seen that the capacity at the state level was very low with a few people managing the entire program.
- Managing expectations of farmers is a major challenge faced by the state governments. Due to lack of awareness of insurance as a product, farmers conceive it like any other social security benefit where payouts are a part of entitlement. Hence delay in payment leads to loss of

credibility of the government and creating a situation of potential political risk for the state government as farmers form large number of voters for any state government.

Core Principle 6

Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

Applicability

By its very nature, the scheme is intended to lower vulnerability of farmers to climate related shocks and distress from crop failure. It is therefore intended to lower any likelihood of social conflict or unrest. Further, the program is being implemented in only five participating states – Gujarat, Odisha, Karnataka, Maharashtra and Uttar Pradesh. None of these states share border with the fragile areas of India viz. Jammu and Kashmir and parts of North East India. Hence this Principle is not applicable.

12. Recommendations

Social

- ***Behavior Change Communication (BCC)****:* the program will design and adopt a Behavior Change Communication (BCC) strategy that aims at increasing knowledge about the insurance product among beneficiaries and other stakeholders, influences practices, and thus results in positive behaviors with regard to crop insurance.

  The core of this strategy will involve designing appropriate messages for different stakeholders and a plan to disseminate these messages at periodic intervals throughout the projgram period. To this end, the insurance policy will be developed as communication material that can be easily communicated and understood. This BCC strategy will look at focused interventions and identify appropriate channels of communication with stakeholders.

  A two-way communication mechanism will be developed with these stakeholders which will continuously inform the program. This will also feed into the GRM. In order to measure the impact of the citizens' engagement process, a customer satisfaction survey is planned in year 3 and year 5. Proper tools and methodology will be developed by the states for this purpose. These could include methodologies like citizens' report card, social audit and any other appropriate methods.

Box 1: Stakeholder engagement through Behavior Change Communication

Farmers: are the primary audience for PMFBY. The BCC intervention will look at different ways to reach two sets of farmers, viz. loanee and non-loanee farmers. The latter category is likely to include more women farmers and the strategy will be designed to address their needs. The strategy adopted will first assess the most appropriate channel for communication and adopt a mix of interpersonal communication, community/social mobilization through influencers including farmers collectives where applicable, and mass media based on reach and usage. All interventions will be assessed at periodic intervals such as MTR.

Insurance Companies/Agents: Insurance companies and their agents do not have much contact with the farmers at present. The BCC should target them for an attitudinal change towards their client which will help them to communicate more meaningfully with their clients (the farmers in this case).

Regional Rural Banks and Cooperative Banks: RRBs and Cooperative Bank officials are not very aware of the details of PMFBY like notified crops etc. In their enthusiasm to give loans to the farmers they deduct insurance premium even for crops which are not covered under notified crops. Hence the BCC should be able to give proper information to the bankers who are then able to guide the farmers.

Executives at the center, participating states, and districts: The BCC strategy will provide technical information to the officials at the government to be able to understand the pros and cons of the program for them to communicate the same to the farmers and other stakeholders.

Legislators: In its current form, PMFBY has been a topic of intense parliamentary and legislative debate where considerable time is devoted to discussing the scheme and its impact and effectiveness. The BCC strategy will develop an advocacy plan to engage with representatives at the state level to enable them to understand fully, different facets of this policy and how farmers stand to benefit from this. As legislators represent their farmer constituents, it will be important to identify champions among them who can deliver positive messages. In addition, progress during the program period will be provided to legislators to continuously engage with them and keep them updated in addition to using them as conduits of information on the ground.

- ***Delink insurance product from titles to expand coverage to small and marginal farmers***. At present there is only one insurance product with the government. However, this product is not very useful in the context of India where there are small and marginal farmers. Moreover, a substantial percentage of farmers are without any land titles and are share croppers. Most of them are women. As a result, women and small and marginal farmers are excluded from the present scheme. Therefore, more customized products should be developed that would target small and marginal farmers as well as lessees (especially women).

- ***Delink insurance product from loans given by financial institutions and expand coverage to non-loanees to address more vulnerable farmers***. The non-loanees at present access insurance only at CSCs and in Karnataka in the local banks. The involvement of insurance companies is very low in terms of engaging with the community and motivating them about the product. One of the reason for this is that the insurance companies have very little presence on the ground (District and Block level). Hence it is recommended that multiple other points to be made available for the farmers to buy the product (local SHGs, PACS etc.). Delinking the product from loans given by

financial institutions will help reach more vulnerable groups of farmers, especially women, who by virtue of not having assets in their name, also cannot access financial institutions.

- ***Targeted capacity building for all service providers***. At present there is a lack of capacity at all level. Therefore, a comprehensive capacity building plan is recommended for all levels in several areas.

    - On the insurance product. Training modules and plan for ongoing training of officials, bankers, insurance agents on the ground as well as leaders from the community (both men and women), village leaders, members of PACS and others about the insurance product and the Scheme.
    - Improved quality of CCEs. Quality of the CCE is a major concern for both the insurance companies and the state government. Given the number of CCEs to be conducted each year, it is important to expand the cadre of grassroots-based workers involved in CCEs. Therefore, a plan to recruit workers from the field and to train them to perform CCEs should be taken up as one of the priority areas.
    - Creating a cadre of "Bima Mitras". In order to increase outreach to the small and marginal farmers as well as women and non-loanees it is important to create and train a cadre of community level insurance agents or "Bima Mitras" who would expand the outreach of the product as well as be the first point of registering face to face grievances from the farmers. A comprehensive capacity building program should be designed for them.

- ***Strengthen citizen's engagement and feedback through grievance redressal mechanism*.** At present the GRM system is ad hoc where people register any complaint to the respective officials. Though there is a toll-free number, but the farmers are not aware of it and also are more comfortable to speak directly to the Agriculture Officials. No records of these complaints are maintained nor is there any laid down protocol for addressing the issues. This has caused lack of credibility of the system as a whole and has resulted in farmers losing faith in the scheme. The Program recommends a systematic Grievance Redress Mechanism that would have multiple points including the toll-free number, lodging complaints at the portal, with the local Bima Mitras etc. A clear protocol will be laid down for escalation and accountability at every level with a time frame within which the grievance will be addressed.

  The GRM will register complaints through several channels. Face-to-face, or online and via a toll-free number. Complaint numbers will be generated each time a complaint is registered to enable follow-up. These grievances will be collated at a central point in the state level with proper records of the issues raised. Settlement of each grievance should be within an agreed time line. In order to get a feedback from the direct beneficiaries, a social audit process can be piloted in some areas.

Environment

- **Study the linkages between climate change patterns and premiums.** In order to inform pricing of premiums for select crops in select regions that are disproportionately exposed to higher climatic risks, it is important to deepen the understanding of the potential adverse impacts of climate and weather pattern and continuously evolving insurance products.

- **Developing climate linked insurance products.** Capping premiums at 2% for Kharif and 1.5% for Rabi crops for areas where these crops are not suitable is ignoring the environmental externality of the agriculture production. There is a need to pilot a new range of climate linked insurance products that correctly price the risk and help correct the imbalance in making crop choices. Premium rates should reflect true risk exposure to climate and avoid adverse selection.

- **Expand Automatic Weather Station (AWS) network to mitigate 'basis risk'**. Address the imbalance in collecting regular and reliable data on weather parameters, which is making the weather-index based crop insurance unreliable. For this, the density of AWS must be increased to a level where weather-based information and data is available for proactive actions for lowering yield losses. This will help both the farmers and the crop insurance industry.

- **Creating an environment-externality neutral insurance platform.** There is a need to delink crops with notification, as political and other considerations keep certain inefficiently grown crops out of purview of insurance. With no premiums to pay, the farmers are disincentivized to continue grow these crops inefficiently. Should they be paying premiums (presumably higher premiums for inefficient crops), they would consider growing different crops suitable to that agro-climatic zone and/or adopt better agricultural practices, which is one of the objectives of the PMFBY.

- **Implement PMFBY with Livestock Insurance Scheme (LIS).** Most farmers also keep livestock and a bundled insurance will help provide income stability to the farmer; making use of this twining approach, LIS should promote good practice models for livestock rearing and management.

- **Work to integrate crop insurance as part of an agriculture package** (especially in the light of climatic variability). This will help in reducing farmer's exposure to risk, particularly risks related to climate change impacts. Vertical integration of PMFBY with schemes promoting hybrid/better seeds, heat and salinity stress tolerant crop varieties, promoting use of Package of Practices, early warning for staggering planting time, intercropping, crop diversification, IPM, low input agriculture, PMFBY will be able to realize the full range of its objectives.

- **Make farmer education part of PMFBY delivery.** It is important to explain to the farmer that insurance is not an additional cost and excessive use of fertilizers and pesticides do not ensure higher productivity. In addition, providing early warning or weather alerts to farmers as package of service along with crop insurance could help in better crop protection practices and possibly minimize the use of pesticides and insecticides. The current extension system should be leveraged for creating enabling conditions for farmer education as a pre-requisite for accessing crop insurance. This will require bolstering capacity of the existing Kisan Credit Card (KCC) centers and the Krishi Vigyan Kendras (KVK) for providing a range of specific information and resources for

easy access. This is suggested as farmers are familiar and access these extension services regularly.

13. Action Plan

Action	DLI/Covenant	Due Date	Responsible Agency	Completion Measurement
Develop a gender strategy, and implementation plan of agreed actions, for targeting and enhancing participation of women farmer owners in the crop insurance program.	Covenant	Year 1: Gender study in all participating states Year 2 (Gender Strategy Document); and YR3-5, progress report on implementation of agreed actions.	Central TSU	Gender Strategy Paper Published and implementation of agreed actions
Design and launch of Behavioral Change Communication (BCC) • Designing a BCC strategy and implementation plan targeting different stakeholders • Implementation of BCC during the program period Monitoring and evaluation at periodic intervals	Covenant	Year-2 (Design BCC strategy); and Year 3-5 (implementation of BCC Campaign)	Central and State TSUs	• Share the BCC strategy document (end-Year-2) • Progress report on implementation of BCC campaign (annually YR3-5). • Share the evaluation report (YR5)
Undertake a study to understand the linkages between climate change patterns and premiums to inform pricing of premiums	Covenant	Year 1 (undertake and complete the study) Year 2 (pilot the premium pricing exercise based on study findings in	Central TSU	Study report published and disclosed and PMFBY informed on the results of pilot exercise

Action	DLI/Covenant	Due Date	Responsible Agency	Completion Measurement
for select crops in select regions that are disproportionately exposed to higher climatic risks.		at least two participating states		
Develop an alternate delivery mechanism for PMFBY as a part of an integrated agriculture package in select districts	Covenant	Year 1 and 2 (Hold consultations with extension agencies for integrating PMFBY in agriculture package in select districts) Year 3 onwards (start piloting PMFBY implementation as part of an integrated agriculture package in select districts)	Central and State TSU Extension Agencies	• Integrated agriculture package launched for piloting in select districts • Performance and Impact evaluation report against all PMFBY objectives published
Make Farmer education part of PMFBY delivery	Covenant	Year 1-2 develop select modules on farmer education with the agriculture extension agencies Year 3 onwards start educating farmers	Central and State TSUs Extension Agencies	• Farmer education modules published • Farmer level survey completed to measure awareness

14. Consultation and Disclosure

Three rounds of consultations have taken place prior to disclosure of ESSA. The first with the national level stakeholders, including Senior Officials from the Ministry of Agriculture and Farmers Welfare and representatives of the departments of agriculture from the participating states. The second round of consultations took place in the states during the field visits. Officials from insurance companies,

commercial banks, rural bank branch officials, cooperative bank board representatives, farmers, including women, tribal and other vulnerable farmers (loanees and non-loanees) and extension workers and NGOs working with farmers were consulted in this round. The final round of stakeholder consultations took place wherein the Bank team shared the key findings, recommendations and Program Actions from ESSA.

National Level consultation:

- Officials from Central Ministries
- NITI Aayog Officials
- Insurance Companies
- Banks
- NABARD

State Level Consultation with Functionaries:

- State Level Officials
- District and Block Level officials
- Representatives of Insurance Companies at the state and District Level

Consultation with Beneficiaries:

- Farmers (loanee and non-loanees)
- PACS members
- Civil Society Organizations working on the issue

The final disclosure workshop and stakeholder consultation was held on October 4, 2018 at the Ministry of Agriculture chaired by the Joint Secretary and CEO, PMFBY. Stakeholders present included representatives of states of Maharashtra and Uttar Pradesh. TSU experts who cover a range of topics including social and environmental safeguards, IT and remote sensing, capacity building and training. experts were present. TSU members who are nodal officers from the states of UP, Bihar, Odisha, Kerala, Karnataka, and MP were present.

Feedback and Suggestions from the Disclosure Workshop/Consultations: Following the presentation of ESSA by the Bank team, detailed discussions took place. The key feedback and suggestions received were on specific issues relating to coverage of non-loanee farmers and their exclusion, BCC, climate change and premiums, implementing PMFBY as a part of agriculture package, farmer education and gender strategy. The proposed Program Actions on ESSA were well received and the timelines for the proposed actions were endorsed.

Annex 1

List of People Met

Government of India

Dr. Ashish Bhutani, Joint Secretary, Ministry of Agriculture and Farmers' Welfare & CEO PMFBY
Ms. Padmaja Singh, Director, PMFBY

Odisha

Mr. Saurabh Garg, Principal Secretary, Agriculture and Farmers' Empowerment
Ms. Ranjana Chopra, Secretary Cooperative Department
Director Agriculture
Mr. Rajesh Das, Nodal Officer, Crop Insurance
Mr. D.K. Routray
Village Agricultural Workers
Members of PACS
Bankers
Insurance Company Representatives
Farmers

Maharashtra

Mr. Sachindra Pratap Singh, Commissioner Agriculture
Mr. Vijay Ghawte, Director Agriculture
Mr. Uday Desmukh, Chief Statistician, Department of Agriculture
Mr. B.D. Patil, Deputy Director Agriculture
District Agriculture Offier
Officials from Banks
Officials from Insurance Companies
Representative from Citizen Service Centre
Members from PACS
Farmers

Uttar Pradesh

Mr. Binod Kumar, Secretary, Agriculture Statistics Department and Nodal Officer Crop Insurance
Mr. Uma Shankar Singh, Director, Agriculture Statistics Department
Mr. Pramod Kumar, Deputy Director Agriculture
Mr. Mahendra Singh, Deputy Director Agriculture
Representatives of Banks
District Agriculture Research Organisation
Representative of Insurance Companies
Mahila Jagriti Samity (NGO) working with women farmers
Women SHG members
Members of Sadhan Sehekari Sanhi Semra (PACS)
Farmers

Karnataka

Mr. M. Maheshwar Rao, Secretary Agriculture Department
Dr. G.S. Srinivasa Reddy, Director, Karnataka State Natural Disaster Monitoring Centre
Mr. Vidyanand, Joint Director Crop Insurance
District Agriculture Officer
Assistant Director Agriculture (Taluka level)
Deputy Director Agriculture
Farmers
Bank Manager

TSU

Annie Vincent
Bindu
Sonam Sahoo
Anil
Seshakumar Gorashi
Pallavi
Dharmendra Kumar