Pardhan Mantri Fasal Bima Yojana

Challenges and Way Forward



Guru Arjan Dev Institute of Development Studies

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(Registered under the Societies Registration Act XXI of 1860)

(Institute in General Consultative Status with Economic and Social Council of United Nation)

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June 2016

Pradhan Mantri Fasal Bima Yojana:

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FOREWORD

Agricultural insurance in India is still in its infancy. It represents an important opportunity not just for the government to do something innovative and significant to provide social protection to the smallholder farmer in the country, but also a significant opportunity for the private sector to leverage a large market.

Less than 5% of farmers in India today have insurance. Agricultural insurance in India, like in many other developing countries has been besieged by a host of challenges. Primary amongst them is low uptake by smallholder farmers. Smallholder farmers do not popularly use formal agricultural risk insurance to diversify or reduce risks. This is mainly because their basis risk, or the risk that the loss for which they get compensated is very different from the loss that they actually suffer. A lot of this is because of measurement and verification methods but a lot of this also occurs because the incentives on the supply side are not aligned with those of the smallholder farmer.

This study is an important assessment of the state of insurance in India. The ***Pradhan Mantri Fasal Bima Yojana*** *(PMFBY) represents an important step to ensure insurance for the small holder farmer in India. It's an important document because not only does it analyze the challenges and opportunities of past agricultural insurance schemes, provide an excellent idea of the heterogeneity of the use of agricultural insurance and a good on-the-ground account of how the supply, demand and verification side of insurance work but also provides a step by step account of how, for whom and when PMBFY can be useful. I am happy to write the foreword for this substantive study.*

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PREFACE

Agriculture is the backbone of Indian economy. Though, it contributes to only around 16 per cent of India's GDP, it provides employment to around 60 per cent of our population. Hence, the prosperity of the agriculture is linked to the prosperity of the economy. The growth of this sector is an essential prerequisite for inclusive growth as well as reduction of poverty in India. But, Indian agriculture suffers from myriad problems and one of them is excessive risk and uncertainty faced by the farmers.

There is greater need for risk transfer to improve the financial viability of farm enterprise due to increased incidence of weather/climate change induced risks. Importantly, need for promoting the sustainability of small farm agriculture with low risk bearing capacity, which dominates the Indian agriculture scenario, and the government's commitment to rectify the situation. Insurance along with bundling of other services is a well-tested means of achieving this objective. ***Pradhan Mantri Fasal Bima Yojana*** *is a new crop insurance scheme that was announced by the Government on 13th January 2016. It will be rolled out from June 2016.*

There is possibility of increasing the access to credit and improved technology to the unreached small and marginal farmers. Low existing agriculture insurance penetration and therefore greater opportunity to expand the insurance market. Favourable current public policies and strong commitment of the government as indicated by recently introduced PMFBY, which has removed the major constraints of large difference between cap on sum insured(SI) and gross value of output (GVO), reduction in insurance unit area , multiple peril product design, and inclusion of local perils (such as hail storm), within the same premium. The present study explores the possibility of the challenges to be faced by the PMFBY and the way forward to meet the objective of the policy.

The authors express their heartfelt thanks to all stakeholders' representatives, policy makers and experts with whom we have detailed discussion for this study. We greatly appreciate the time and efforts they took to share their knowledge experiences and insight into the challenging topic.

Authors

Acronyms and Abbreviations

***AIC**: Agricultural Insurance Company*
***AIG:** American International Group,*
***APR**: Actuarial Premium Rate*
***AY:** Actual Yield*
***BJP:** Bharatiya Janata Party*
***CCEs**: Crop Cutting Experiments*
***CCIS**: Comprehensive Crop Insurance Scheme*
***CPIS**: Coconut Palm Insurance Scheme*
***DAC&FW:** Department of Agriculture, Cooperation & Farmers Welfare*
***DLMC**: District Level Monitoring Committee*
***DLTC**: District Level Technical Committee*
***FO:** Farmer Organization*
***FPOs:** Farmer Producer Organizations*
***GCES**: General Crop Estimation Survey*
***GDPs:** Gross Domestic Products*
***GIS:** Geographical Information System*
***GPRS:** General Packet Radio Service*
***GPS:** Global Positioning System*
***GVO**: Gross Value of Output*
***HDFC:** Housing Development Finance Corporation*
***IA**: Implementing Agency*
***ICICI:** Industrial Credit and Investment Corporation of India*
***IFFCO:** Indian Farmers Fertilizer Cooperative Organization*
***IL:** Indemnity Level*
***INR:** Indian Rupee*
***IRDA**: Insurance Regulatory and Development Authority*
***IU**: Insurance Unit*
***KCC**: Kissan Credit Cards*
***LEO:** Low Earth Orbit*
***LC**; Loss Cost*
***MG NREGA:** Mahatma Gandhi National Rural Employment Guarantee Act*
***MNAIS**: Modified NAIS*
***MOA&FW**: Ministry of Agriculture & Farmers Welfare*
***MSP:** Minimum Support Price*
***NAIS:** National Agricultural Insurance Scheme*
***NDA:** National Democratic Alliance*
***NGOs**: Non Government Organizations*
***NIC:** National Informatics Centre*
***NSSO:** National sample Survey Organization*
***PMFBY:** Pradhan Mantri Fasal Bima Yojana*
***PPPs**: Public Private Partnership*
***RBI:** Reserve Bank of India*
***RST:** Remote Sensing Technology*
***SAD:** Shiromani Akali Dal*
***SBI:** State Bank of India*
***SI**: Sum Insured*

SLCCCI: *State Level Co-ordination Committee on Crop Insurance*
SPVs*:* special purpose vehicles
TAC*: Technical Advisory Committee*
TSU: *Technical Support Unit*
TY*: Threshold Yield*
UAV: *Unmanned Aerial Vehicles*
UPA: *United Progressive Alliance*
UT: *Union Territory*
WBCIS: *Weather-Based Crop Insurance Scheme*

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Challenges and Way Forward

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Abstract

*The Indian agricultural environment has undergone numerous structural changes due to changes in the government policies. One new government policy, **Pradhan Mantri Fasal Bima Yojana (PMFBY)** could have wide-ranging effects. The study covered the opportunities and constraints for agricultural insurance in India, how PMFBY will be supported and governance will be maintained, and the best strategy for technology to increase farmer's awareness and successful implementation. Under PMFBY, the government's focus will be to bring in more farmers without loans (which comprise merely 5 per cent of total farmers at present) under the scheme. A total of 5,000 automated weather stations will be set up across the country. The IRDA (*Insurance Regulatory and Development Authority*), AIC (Agricultural Insurance Company), and 11 private and four state-owned non-life insurers have expressed their interest to participate in the scheme. Opportunities for agricultural insurance in India are numerous and insurance can be a risk transfer mechanism for Indian farmers that depend heavily on rains especially with the increasing influence of climate change. There is room for experiments and expansion of new insurance products since penetration is low and there also a favorable political environment for insurance and support of agricultural livelihoods.*

Key words: PMFBY, post harvest loss, weather based insurance, low premium; IRDA, AIC, KCC;

Executive Summary

Agriculture industry in India is proverbially called a "***Gamble on the Monsoon***". The Indian agricultural environment has undergone numerous structural changes due to changes in the government policies. Farmers face floods, drought, pests, disease, and a plethora of other natural disasters. The weather is their greatest adversary, something that can never be controlled by man. Yet, farming has been in existence since the caveman turned his spear in for a hoe. Farming has come a long way since then; nevertheless; farmers are still at the mercy of the heavens. Crop insurance is a risk management tool that farmers can use in today's agricultural world. For a premium, farmers can pass their weather-related risk onto a third party. Farmers in India have been subjected to publicly administer insurance schemes since 1972. Every scheme has been flawed, yet the Government of India is still attempting to strengthen agriculture by protecting its farmers from the weather. India's failure at providing public crop insurance does not stand alone. In both the developing and developed world, governments' crop insurance schemes have run at huge losses while not delivering an effective product. The inadequacy of such schemes is a well-established fact. On the other hand, private insurance does exist in situations where it is feasible and no subsidized insurance is offered. The farmers stand to benefit even more from private insurance when there are several competitors.

Government crop insurance has proved to be a failure worldwide, but India seems to have ignored both its own failure and the failure of other countries. Various crop insurance schemes will not fix the ills of Indian agriculture planned by the authorities, how grand it may be. Private crop insurance may or may not develop if all government crop insurance is abolished. Abandoning insurance schemes does not mean abandoning farmers. The new insurance government policy, ***Pradhan Mantri Fasal Bima Yojana*** (PMFBY) could have wide-ranging effects. The study covered the opportunities and constraints for agricultural insurance in India, how PMFBY will be supported and governance will be maintained, and the best strategy for technology to increase farmer's awareness and successful implementation. The government's focus will be to bring in more farmers without loans (which comprise merely 5 per cent of total farmers at present) under the scheme. A total of 5,000 automated weather stations will be set up across the country. The *IRDA* (*Insurance Regulatory and Development Authority*), AIC (*Agricultural Insurance Company*), and 11 private and four state-owned non-life insurers have expressed their interest to participate in the scheme. Opportunities for agricultural insurance in India are numerous and insurance can be a risk transfer mechanism for Indian farmers that depend heavily on rains especially with the increasing influence of climate change. There is room for experiments and expansion of new insurance products since penetration is low and there also a favorable political environment for insurance and support of agricultural livelihoods.

Various constraints include the mindset of farmers and states, finances, technology, logistics, convenience, transparency, and the role of insurers. In the current budget, the Finance Minister has allocated Rs 5000 crores to support the *PMFBY* which will have additional support from the state budgetary resources. This spread across India per hectare comes to Rs 243 per hectare which is a limited amount if the scheme becomes popular.

One of the major challenges that remain is: How to segregate insurance and disaster relief. Insurance products have a commercial basis whereas the disaster relief for small and marginal farmers has a social implication. However, it is important to distinguish between subsistence farmers with no or very low chance to become commercially viable for whom insurance should be designed as a *Social Protection Policy* rather than as a commercial risk management tool. However, they can be issues of distinction between these two groups.

There are data constraints that also greatly limit the use of insurance. Additional yield data and farm gate data, data on land holdings, crops grown and damage calculations are needed. The scheme now covers most of the crops and with small areas in particular crops, loss may not be assessable via remote sensing or drones. Lack of adequate databases for determining premiums and indemnities and lack of adequate infrastructure create constraints in implementing crop insurance in India, particularly in backward states. The procedure is complicated for fixing the farm gate price for non-MSP crops, which may give rise to disputes. Furthermore, modernization of the land records should be promoted by the states and provisions of including land tenants be considered.

There is also a lack of public awareness of agricultural insurance. In particular, backwards regions are still facing lack of development in getting the benefits of government programs since they lack awareness and non-corporation from concerned officials, as well as unreliable and untimely harvesting information.

There is high expenditure from the public sector, as the scheme is not based on commercial viability, but depends on large subsidies, which may become problematic in the long run. To reduce competition, the government decided to have a single insurer in any district to avoid duplication in coverage. The selection of insurers is based on the premium rates rather than qualitative parameters which can be restrictive in terms of growth. Political pressure and interference can also lead to complications.

There was a strong need for awareness drive among farming families, especially small and marginal farmers. The private sector can play an important role in dissemination about *PMFBY*. Banks and insurers can also play a key role alongside government. Banks can have agents who can motivate farmers, arrange insurance policy, payment of premium etc. Farmers are not cultivating many crops (pulses) in summer season due to animal damages; it (damages by wild animals) should be included. Price risk should be considered along with yield risks and that products such as insurance, credit, information be bundled otherwise they will be outcompeted by the informal insurance sector. Insurance and ad-hoc relief are not run together; preference will be to avoid paying premiums if ad-hoc relief is offered. Both these programs have to be implemented separately.

Technology usage will be critical both for design and usage by farmers and India possess strong IT capacity. Measures can be taken to improve weather insurance products including involvement of international experts, using satellite imagery with innovative computer models, and creation and usage of specialized indices like Normalized Difference Vegetation Index. The credibility of Crop Cutting Experiments (CCEs) should be improved using a digital confirmation and auditing process and the State should ensure the use of General Packet Radio Service (GPRS) enabled and camera-fitted mobile phones while conducting CCEs. Development of a web portal could make data on land records for all states available to financial institutions for speeding the insurance processing.

Technology can also be used to send SMS-based weather data to progressive farmers and farming groups, to provide training through videos or SMS communication about insurance, and to promote index-based insurance as part of a wider package of services, grafted into existing, efficient delivery channels with private sector engagement and with access to international risk transfer markets. In addition, Community-Based Insurance with farmer producer organizations (FPOs) needs to be encouraged to reduce the high transaction costs in the existing model. FPOs, through Private Public Partnerships (PPP) can promote mobile technology use for money transfer both for premium collection and compensation payments. Related training and certification of FOs who in turn can train large number of small and marginal farmers can also be made part of the system. A shift from Social Crop

Insurance Program towards Market based crop insurance program should also be explored with time.

Private crop insurance can be observed worldwide, even though it is not highly developed. Private crop insurance has tended to cover more specific risks and not cover management-related risks. These insurance policies offered must fit needs of farmers and be beneficial--otherwise they would not exist. This is not necessarily the case with government sponsored crop insurance. Private insurance works in a wide range of countries for a wide range of agricultural activities. Insurance programs vary from tropical plantation crops in Latin America to tree crops in the USA.

Government crop insurance has proved to be a failure worldwide, but India seems to have ignored both its own failure and the failure of other countries. The PMFBY will not fix the ills of Indian agriculture, nor will any other grand insurance scheme planned by the authorities. Private crop insurance may or may not develop if all government crop insurance is abolished. Abandoning insurance schemes does not mean abandoning farmers. Farmers could be given an income guarantee not based on yield, price, or area planted. Even now an income insurance scheme is being considered in India. Investment in agricultural infrastructure/research would be more equitable as opposed to subsidies to crop insurance and may yield more long-term benefits. Farmers deserve the chance to farm on their own. They know the weather better than anyone—it is their greatest foe and their greatest friend. The government should stop trying to play God and help farmers help themselves. The government has admitted that it lacks the resources to administer a proper insurance scheme at the individual level. For various reasons a second-rate scheme is deemed as necessary.

Globally, the value of crop insurance, private or subsidized, is much debated by academics and policy makers. The concept of index-based contracts for natural disasters in place of crop insurance has been recently introduced. Farmers would purchase a contract and be compensated when a certain event or natural disaster occurs. Rainfall contracts are one example. Rain is relatively simple to monitor and the history of rainfall in most areas is well known. Farmers would be compensated if the rainfall in an area would go below a set level, with varying levels of payment depending upon the level of rainfall. The faults of this approach lie in its similarity to the area approach. However, the benefits are significant, including reduction of moral hazard, adverse selection, and transaction costs. This alternate model could be adopted as an improvement over the PMFBY but would still deter the private sector from entry into crop insurance. A better option would be an income guarantee not based upon yield, crop grown, or farm size. Farmers could be given an income guarantee not based on yield, price, or area planted. Considering the various subsidies that are given to farmers through various means--fertilizers, seed, price supports, etc.--an income guarantee should not be an unfeasible option. Farmers need to be able to respond to market forces and develop their own risk-management tools.

Pradhan Mantri Fasal Bima Yojana

Challenges and Way Forward

If the image of a farmer hanging himself from a tree at *Jantar Mantar* in the Capital haunts India, it is because perhaps for the first time urban India came face to face with self-destruction that so far appeared to be happening thousands of miles away in a Bharat city slickers found difficult to put a finger on. And if thousands of farmers are killing themselves on their ravaged fields, it's not just because the weather gods have been brutal; it's also because the protection from such climatic flippancy, in terms of crop insurance, has failed the farmer when he needed it the most. The suicides that are being reported from farms across the country clearly indicate that these schemes have not found enough takers. Worse, even in cases where the farmer has signed up for a policy, he may not be eligible to make a claim when he is badly hit on account of loan defaults.

Comprehensive Crop Insurance Scheme, launched in 1985, was the first nationwide scheme, which later gave way to ***National Agricultural Insurance Scheme*** (NAIS) in 1999, followed by the ***Modified NAIS*** (MNAIS). These schemes were merged into ***National Crop Insurance Programme*** in 2013. There are two major flaws apart from several lesser evils. Firstly, under design of these schemes, even extremely poor farmers are expected to pay the premium. Secondly, if the farmer gets trapped in a cycle of debt and defaults on his agricultural loan — to which his crop insurance scheme is linked — his policy becomes inoperative. Thousands of farmers who have opened insurance plans through the ***Kisan Credit Card*** (KCC) scheme for instance find that they cannot claim insurance because of unpaid dues on their bank loan. Small farmers have no incentive as they have to pay the premium. Numerous farmers have written to banks saying they do not want insurance. Banks have complied with such requests to meet targets although insurance is a compulsory feature of agricultural loan schemes

Given the tepid performance of current schemes, the government plans to launch a new scheme that would cap the premium at about 3 per cent of the sum insured, cover a substantial part of India's farmland and crop output and make processing of claims hassle-free. Following the drought conditions in many parts of the country and the instances of farmer suicides, Prime Minister

Narendra Modi on January 13 announced new crop insurance, ***Pradhan Mantri Fasal Bima Yojna (PMFBY)***, for the harried farmer's which will be rolled out from the coming ***Kharif*** season beginning June and the Centre and the states together will involve an annual outgo of Rs 8,800 crore in terms of subsidy which will be equally shared. The Centre would incur an expenditure of more than Rs 8,800 crore annually at this rate of subsidy if 50 per cent (very ambitious) of the total crop area of 194 million hectare is insured. The scheme gives flexibility to rate the segment appropriately. Farmer needs to pay a lesser premium due to the large government subsidy.

Background

Indian agriculture is important as it feeds an estimated 1.3 billion population of the country and is also burdened with the responsibility of providing livelihoods to 60 per cent of the people — 780 million people. No foreign country can produce this mammoth quantity of food and can neither supply to India; nor does any sector outside agriculture have the capacity to absorb such huge workforce. Agriculture has been the main occupation for nearly 48.9 per cent of the rural population of the country. According to the ***Economic Survey of India*** 2014-15, agriculture and its allied sectors contributed for over 51.73 per cent the GDP in 1954-1955 which reduced to 13.94 per cent in 2013-14. The share of agriculture in employment was 48.9 per cent of the workforce and its share in the Gross Domestic Product (GDP) was 17.4 per cent in 2015-16 (Source: ***Economic Survey*** 2015-16). Despite the Government step and slew of measures and assurances given to farmers by all the political parties over the years, the farmers' plight continued unabated in the better part of the country. According to figures from the Ministry of Agriculture, the total number of suicides committed by farmers for agrarian hardships in the last three years stands at 3313. The five States — Maharashtra, Telangana, Karnataka, Andhra Pradesh and Kerala — accounted for 3301 of them. According to the Government data, as many as 207 districts in nine states have been hit by drought. As much as 90 lakh hectare of land had been affected due to drought and the affected states had sought relief of over Rs 25,000 crore from the Central Government.

Apparently, farming is in a deep crisis as indicated by the continued farmer suicides. In the last two decades, more than 300,000 farmers have ended their lives. This suggests that the governmental nostrums*, hitherto* experimented, could not be effective enough in stemming the tide. Two recent moves, one from the Reserve Bank of India and other from the Government, in all probability are also going to be counterproductive. They amply testify to the fact that there is no learning of lessons from the past experiences and failures.

The RBI's committee on *Medium Term Path on Financial Inclusion* under the chairmanship of Mr Deepak Mohanty, its *Executive Director*, has in its report (submitted on 28 December 2015) recommended phasing out the interest subvention scheme and plough-back of the subsidy amount into a universal crop insurance scheme for small and marginal farmers. Government of India has been giving interest subsidy of 2 per cent on short-term crop loans of up to Rs. 300,000 and additionally allowing a 3 per cent incentive for prompt repayment of loans. The interest subsidy has increased from Rs.1, 000 crore in 2006 to Rs.12, 500 crore in 2016. The committee doesn't want this expenditure to continue any further because the scheme is for short-term crop loans, and as a result it discriminates against long-term loans and thereby, does not incentivize long-term capital formation in agriculture. Moreover, subsidized credit does not always flow to the actual cultivator and it increases the probability of misuse.

On the other hand, the Committee instead recommends operating an effective crop insurance scheme using this money to avoid wastage. Unfortunately, the committee seems oblivious that the crop insurance cannot be a substitute for cheap credit. Also the increased cost of credit would raise the cost of cultivation further denting the farmers' income, which is below subsistence level in many cases.

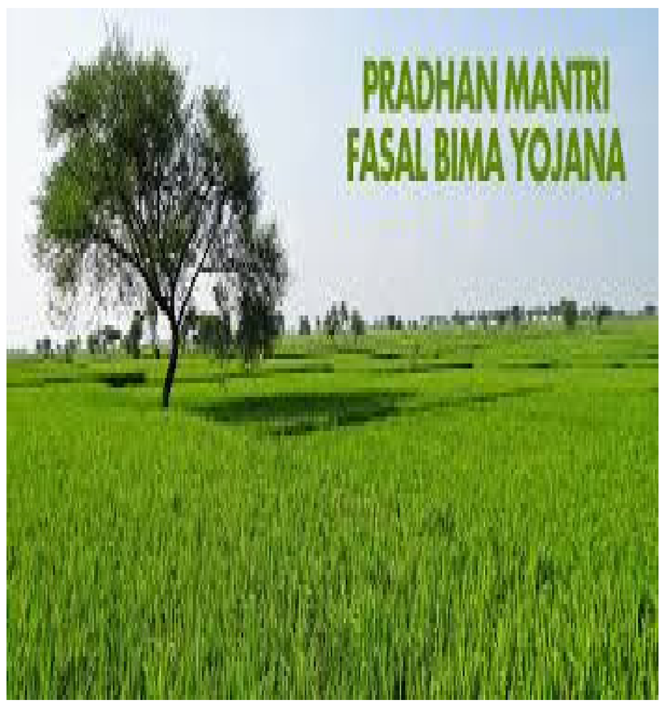
The NSSO 70th round shows that farmers operating on less than a hectare, accounting for 70 per cent of them, are earning much less than their minimum consumption expenditure. ***Arjun Sengupta Committee*** puts the average monthly income of a farm family at Rs. 2,115 which includes Rs.900 from non-farm activities. Similarly, the ***Commission for Agricultural Costs and Prices*** (CACP) analysis has shown the return for many crops to be actually in the negative side/zone. In fact, the ***Socio Economic and Caste Census 2011*** have confirmed that 75 per cent of all rural households make less than Rs 5,000 per month. Apparently, making the insurance business sustainable with actuarial premium rates with the government's payout is not going to be of any help to the farmers. A fortnight after the RBI's report was submitted; the NDA government unveiled its new crop insurance scheme, ***Pradhan Mantri Fasal***

Bima Yojana, which is scheduled to be implemented from the ***Kharif*** *crop cycle* beginning this June.

Ministry of Agriculture Ministry has set the ball rolling for implementing the Prime Minister's ambitious crop insurance scheme in the current fiscal. It has instructed all States to start the tendering process to select insurance companies so that the scheme can be rolled out before the sowing season starts in June. It is also working with the States on an awareness drive, which kicked off last week of March, to spread information about the scheme among farmers. "Letters have gone to all States from the Centre instructing them to start issuing tenders as the entire process will take at least a couple of months and government want the product to be ready when sowing starts in June. The information dissemination exercise is being held at the block level and attempts have been made to involve farmers across the country. The Prime Minister has also written to all Panchayat heads enumerating the benefits of the schemes and asking for their cooperation in disseminating the information. The ***PM Fasal Bima Yojana (PMFBY)*** was launched in January to insure farmers against the vagaries of nature, at a highly subsidized rate. The premium to be paid by farmers is just 2 per cent of the insured value for the ***Kharif*** crop and 1.5 per cent for the ***Rabi*** season. The remaining premium charged by the insurance companies is to be shared by the Centre and States in equal measure.

THE SCHEME

Agriculture is the mainstay of Indian people traditionally and culturally, government has been focusing on the agriculture front quite seriously. The government and the policy makers have always faced a few challenges *vis-à-vis* the task of ensuring food security, higher agricultural growth and adequate jobs in agriculture sector. There has been always a long felt need to bring together at one place all conceptual issues, detailed institutional framework and operational details related to farmers' welfare, risk management of farming community and the crops during drought and floods and other localized risk factors. Therefore the announcement of the New Crop Insurance scheme on 13th January, 2016 by the Government of India has received kudos from all quarters. The broad policy on drought and natural disasters management prepared by the government has prescribed multifold actions *vis-à-vis* the disaster mitigation plans, relief measures required for providing succor to the affected population and the need to integrate these with long term objectives. In other words, steps were required to be taken on a war footing with a well thought of and far-sighted vision and action plan, both in short term and long term. The New Crop Insurance scheme must be understood from that perspective. This is all the more relevant at a time when the country is facing drought for the second straight year due to poor monsoon rains. Government recently launched a new crop insurance scheme titled ***Pradhan Mantri Fasal Bima Yojana (PMFBY)*** to mitigate the rural distress caused by crop failure or damage due to factors like unseasonal rains, monsoon failure, storms, floods, pests and diseases



According to the *Agriculture Census Report* 2010-11, the number of operational holdings (all land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others without regard to the title, legal form, size or location) was 138.35 million of which wholly owned and self-operated holdings accounted for 97.61 per cent in 2011. The small and marginal holdings (below 2 hectare) constituted 85.01 per cent. There are around 118.6 million cultivators in the country. The government aims to cover at least 50 per cent of farmers with its crop insurance scheme. The present coverage is below 25 per cent. Only two crore of an estimated 12 crore farmers in the country had crop insurance cover in 2014-15, even as the facility was just against the cost of cultivation and barely provided any income protection. According to Agriculture Ministry data, a major chunk of farmers who took crop insurance were in Rajasthan, Bihar, Uttar Pradesh, Maharashtra, Karnataka and Andhra Pradesh. The insurance scheme is virtually a non-starter in states like Punjab, Haryana and Odisha that contribute significantly to the central pool stocks of rice and wheat. Only a small segment of the farmer community availed of the facility last fiscal in Jharkhand, Tamil Nadu, Telangana, Himachal Pradesh and Kerala. The agriculture ministry has identified issues such as high variability in premium rates among adjacent districts, higher premium in districts with high crop-risk profile and the cumbersome “crop-cutting experiments” to ascertain the extent of crop damage as factors that hit the spread of crop insurance across the country. The dismal performance is attributed to the low insurance payouts, level of premium that the farmers found unaffordable and hassles in settlement of claims.

Often in the existing policies like Modified National Agricultural Insurance Scheme, National Agricultural Insurance Scheme and Weather-Based Crop Insurance Scheme, the companies offering these products charge high premium rates from the farmers, which is discouraging. At a couple of places premium amount for crop insurance is as high as 30 per cent to 40 per cent of the total sum insured which is key reason for slow expansion of the policies. Besides, the time for settlement of claims varied between six months to one year. Under the crop insurance policies being offered by various public and private sector companies, farmers are presently paying a premium in the range of 3.5 to 8 per cent of the insured value of the crop and the rest is borne by the government. Currently, around 20 per cent (40.27 million hectares) of the total agricultural land is insured.

The PMFBY will replace the existing two schemes National Agricultural Insurance Scheme as well as the Modified NAIS. As the new PMFBY is a replacement scheme of NAIS / MNAIS, there will be exemption from *Service Tax* liability of all the services involved in the implementation of the scheme. Farmers will also get rid of the web of complex rules of the earlier insurance schemes. The new scheme includes successful aspects of the existing schemes and "effectively addresses" whatever was lacking in earlier schemes

With two successive bad monsoons, poor rainfall this year will put the “system to test. PMFBY will be rolled out in a “mission mode” from April to cover ***Kharif*** or summer crop from this year itself. The scheme has the potential to reduce distress in the farm sector and “end the scar of farmer suicides” affecting parts of the country.

The mechanism of higher subsidy for crop premiums is not out of line with international standards. The United States, for instance, covers over 120 million hectares and gives subsidy to the tune of around 70 per cent. China insures its farmers for a sown area of around 75 million hectares with a subsidy on premiums of about 80 per cent. In Indian context, during the next five years, the plan would probably cover over 50 per cent of the cropped area. The government is looking at imposing penalties for delaying farmers’ settlement claims under the new crop insurance plan.

IMPLEMENTATION:

The Scheme shall be implemented through a multi-agency framework by selected insurance companies under the overall guidance & control of the Department of Agriculture, Cooperation & Farmers Welfare (DAC & FW), Ministry of Agriculture & Farmers Welfare (MOA & FW), Government of India (GOI) and the concerned State in co-ordination with various other agencies; viz Financial Institutions like Commercial Banks, Co-operative Banks, Regional Rural Banks and their regulatory bodies, Government Departments viz. Agriculture, Co-operation, Horticulture, Statistics, Revenue, Information/Science & Technology, Panchayati Raj etc.

DAC & FW has designated/empanelled Agriculture Insurance Company of India (AIC) and some private insurance companies presently to participate in the Government sponsored agriculture /crop insurance schemes based on their financial strength, infrastructure, manpower and expertise etc. As of now, there are only 11 non-life insurance companies, including the state-owned specialized agriculture insurer Agriculture Insurance Company, which have been empanelled by the government for the implementation of PMFBY. The empanelled private insurance companies at present so far are: 1) *ICICI-Lombard* General Insurance Company Ltd. 2) *HDFC-ERGO* General Insurance Company Ltd. 3) *IFFCO-Tokio* General Insurance Company Ltd. 4) *Cholamandalam M S* General Insurance Company Ltd. 5) *Bajaj Allianz* General

Insurance Company Ltd. 6) *Reliance* General Insurance Company Ltd. 7) *Future* General India Insurance Company Ltd. 8) *Tata-AIG* General Insurance Company Ltd. 9) *SBI* General Insurance Company Ltd. 10) *Universal Sompo* General Insurance Company. Only one company will be allowed to serve one area and that area is decided by the Ministry of Agriculture, Government of India by bidding.

IRDAI, however, wanted to include all the general insurance company in PMFBY fold and will take up the matter of non-inclusion of public general insurance companies in the *Pradhan Mantri Fasal Bima Yojana*. These state-owned insurers have about 300,000 agents that sell insurance products in rural and urban areas. The scheme will be more successful if they are made part of the scheme as their network and people at ground-level are very high. This can make a big difference to the scheme in rural areas. Public sector non-life insurers have more than 9,000 offices across the country.

The selection of insurance company from amongst the empanelled insurance companies to act as Implementing Agency (IA) shall be done by the concerned State Government for implementation of the scheme in their State. Such selection of IA shall be done from amongst the designated / empanelled companies which shall be initially pre-qualified, strictly on the basis of, experience, existence of infrastructure in the area and quality of services like coverage of farmers and area, pay-outs in terms of quantum and timely settlement thereof, willingness to do publicity and awareness campaigns etc. The final selection of IA from amongst the pre-qualified insurance companies shall be done based on the lowest weighted premium quoted by a pre-qualified company for all notified crops within the cluster of districts. It is anticipated that there would be cluster that would be formed of districts to implement the scheme. Senior insurance officials said that how the clusters are classified will define how the premiums will be fixed.

***MANAGEMENT*:**

The existing State Level Co-ordination Committee on Crop Insurance (SLCCCI), Sub-Committee to SLCCCI, District Level Monitoring Committee (DLMC) already overseeing the implementation and monitoring of the ongoing crop insurance schemes like National Agricultural Insurance Scheme (NAIS), Weather Based Crop Insurance Scheme (WBCIS), Modified National Agricultural Insurance Scheme (MNAIS) and Coconut Palm Insurance Scheme (CPIS) shall be responsible for proper management of the Scheme. IA shall be an active member of SLCCCI and District Level Monitoring Committee (DLMC) of the scheme.

UNIT OF INSURANCE:

The Scheme shall be implemented on an **'Area Approach basis'** i.e., Defined Areas for each notified crop for widespread calamities with the assumption that all the insured farmers, in a Unit of Insurance, to be defined as „Notified Area" for a crop, face similar risk exposures, incur to a large extent, identical cost of production per hectare, earn comparable farm income per hectare, and experience similar extent of crop loss due to the operation of an insured peril, in the notified area.

Defined Area (i.e., unit area of insurance) is Village/Village Panchayat level by whatsoever name these areas may be called for major crops and for other crops it may be a unit of size above the level of Village/Village Panchayat.

In due course of time, the Unit of Insurance can be a Geo-Fenced/Geo-mapped region having homogenous Risk Profile for the notified crop. For Risks of Localized calamities and Post-Harvest losses on account of defined peril, the Unit of Insurance for loss assessment shall be the affected insured field of the individual farmer.

CROPS:

The Scheme can cover all the Crops for which past yield data is available and grown during the notified season, in a Notified Area and for which yield estimation at the Notified Area level will be available based on requisite number of Crop Cutting Experiments (CCEs) being a part of the General Crop Estimation Survey (GCES).

NOTIFIED AREA:

Notified Area is the ***Unit of Insurance*** decided by the State Govt. for notifying a Crop during a season. The size of the Unit of Insurance shall depend on the area under cultivation within the unit. ***For major crops, the Unit of Insurance shall ordinarily be Village/Village Panchayat level and for minor crops may be at a higher level*** so that the requisite number of CCEs could be conducted during the notified crop season. States may notify Village / Village Panchayat as insurance unit in case of minor crops too if they so desire.

INDEMNITY LEVEL (IL) and THRESHOLD YIELD (TY):

Three levels of Indemnity, viz., 70 per cent, 80 per cent and 90 per cent corresponding to crop Risk in the areas shall be available for all crops. The *Threshold Yield* (TY) shall be the benchmark yield level at which Insurance protection shall be given to all the insured farmers in an Insurance Unit. The Threshold Yield for a crop in an Insurance Unit shall be based on average yield of last seven years excluding two years of declared calamity if any, multiplied by the level of indemnity of the area.

***FARMERS TO BE COVERED*:**

All farmers growing notified crops in a notified area during the season who have insurable interest in the crop are eligible.

Compulsory Coverage: Farmers in the notified area who possess a Crop Loan account/KCC account (called as Loanee Farmers) to whom credit limit is sanctioned/renewed for the notified crop during the crop season. And such other farmers whom the Government may decide to include from time to time.

Voluntary Coverage: Voluntary coverage may be obtained by all farmers not covered in above, including Crop KCC/Crop Loan Account holders whose credit limit is not renewed.

RISKS COVERED

Following risks leading to crop loss are to be covered under the scheme:-

YIELD LOSSES (Standing Crops, Notified Area Basis): Comprehensive risk insurance is provided to cover yield losses due to non-preventable risks:

- Natural Fire and Lightning
- Storm, Hailstorm, Cyclone, Typhoon, Tempest, Hurricane, Tornado etc.
- Flood, Inundation and Landslide
- Drought, Dry spells
- Pests/ Diseases etc.

PREVENTED SOWING (Notified Area Basis):- In cases where majority of the insured farmers of a notified area, having intent to sow/plant and incurred expenditure for the purpose, are prevented from sowing/planting the insured crop due to adverse weather conditions, shall be eligible for indemnity claims upto a maximum of 25 per cent of the sum-insured.

***POST-HARVEST LOSSES (Individual Farm Basis)*:** Coverage is available upto a maximum period of 14 days from harvesting for those crops which are kept in "cut & spread" condition to dry in the field after harvesting, against specific perils of cyclone / cyclonic rains, unseasonal rains throughout the country.

***LOCALISED CALAMITIES (Individual Farm Basis)*:** Loss / damage resulting from occurrence of identified localized risks i.e. hailstorm, landslide, and Inundation affecting isolated farms in the notified area.

EXCLUSIONS: Risks and losses arising out of following perils shall be excluded:-

War & kindred perils, nuclear risks, riots, malicious damage, theft, act of enmity, grazed and/or destroyed by domestic and/or wild animals, In case of Post–Harvest losses the harvested crop bundled and heaped at a place before threshing, other preventable risks.

***ESTIMATION OF CROP YIELD*:**

The State/UT Govt. will plan and conduct the requisite number of Crop Cutting Experiments (CCEs) for all notified crops in the notified insurance units in order to assess the crop yield. The State / UT Govt. will maintain single series of Crop Cutting Experiments (CCEs) and resultant Yield estimates, both for Crop Production estimates and Crop Insurance. Crop Cutting Experiments (CCE) shall be undertaken per unit area /per crop, on a sliding scale, as indicated below:

Sr. No.	*Insurance Unit*	*Minimum no. of CCEs required*
1.	*District*	24
2.	*Taluka / Tehsil / Block*	16
3.	*Mandal/Hobli/ Phirka / Revenue Circle*	10
4.	*Village / GramPanchayat/Patwar-Mandal/Patwari-Halka*	4 for major crops, 8 for other crops

However, a Technical Advisory Committee (TAC) comprising representatives from Indian Agricultural Statistical Research Institute (IASRI), National Sample Survey Organization (NSSO); Ministry of Agriculture & Farmers Welfare and implementing agencies shall dispose/decide the issues relating to CCEs and all other technical matters. Inputs from RST/satellite imagery would also be utilized in optimizing the sample size of CCEs.

It has been felt that process of CCEs currently being conducted for estimating yield is lacking in reliability and speed which affects the claims settlement. There is a need to have good quality, timely and reliable yield-data. For addressing this problem, video/image capture of crop growth at various stages and transmission thereof with CCE data on a real time basis utilizing mobile communication technology with GPS time stamping, can improve data quality, / timeliness and support timely claim processing and payments. States and insurance companies shall utilize this technology for the purpose.

The cost of using technology etc. for conduct of CCEs etc will be shared between Central Government and State/U.T. Governments on 50:50 basis, wherever necessary, subject to a cap on total funds to be made available by Central Government for this purpose based on approximate cost of procuring hand held devices/Smart phones and other related costs.

***USE OF INNOVATIVE TECHNOLOGY*:**

DAC&FW shall carry out pilots in select areas, in collaboration with various States/UTs, national and international research organizations / institutes, IMD, insurance companies, reinsurers etc. to make use of available technology in the fields of remote sensing, aerial imagery, satellites etc. that can help in acreage estimation, crop health / loss estimation, quicker yield estimation etc. with reduced manpower & infrastructure. With development of number of satellites with high resolution images orbiting the Earth, there have been great improvements in satellite imagery products. It has been reasonably proven the satellite imagery can help in demarcating the cropped areas into clusters on the basis of crop health. This feature can be successfully used to target the CCEs within the Insurance Unit (IU). Thus satellite imagery can help in ***'Smart Sampling'*** of CCEs. While an IU with heterogeneous crop health may need standard sample of CCEs, for e.g. 4 CCEs per Village / Village Panchayat for major crops, the more homogenous IU may need a lower sample size, say 2 CCEs. This is expected to minimize the total CCEs needed by about 30-40%. States should progressively adopt this technique in generating yield estimates. After proven strong correlation between RST / Satellite Imageries results and yield estimates through CCEs, States may use the technologies in estimating the crop yields at IU level, subject to the satisfaction of Central and State Governments and insurance companies with the accuracy of the yield estimates to service the claims.

The integrity of CCEs will be verified by use of GPRS enabled Mobile phones with cameras/smart phones. These phones will also help in addressing the problem of area discrepancy by capturing pictures of standing crops and will also help in quicker, accurate estimation of yields. Such technologies, after due consideration of pilot results by the Government shall be included in the Scheme. All state government shall use technology initiatives in the conduct and supervision of CCEs to provide the yield data with minimum delay to IA for quick processing of the claims. The state governments shall also use technology initiatives in the reporting of loss reports for on-account claim settlement, Claim intimations for Localized calamity and Post-Harvest losses.

A centralized repository shall be maintained. Appropriate application (web based, app based etc.) would be developed by NIC. All stakeholders shall use this application for inputting various operational data like notification related data, individual farmer wise insurance coverage and claims details, crop loss details etc.

***SUM INSURED / LIMIT OF COVERAGE*:**

The Sum Insured would be equal to Scale of Finance as fixed by District Level Technical Committee (DLTC) for Loanee farmers under Compulsory Component which may extend up to the value of the threshold yield of the insured crop at the option of insured farmer. If threshold yield is lower than the Scale of Finance, higher amount shall be the Sum Insured. Multiplying the Notional Threshold Yield with the Minimum Support Price (MSP) of the current year arrives at the value of sum insured. Wherever Current year's MSP is not available, MSP of previous year shall be adopted. The crops for which, MSP is not declared, farm gate price established by the marketing department / board shall be adopted. Further, in case of Loanee farmers, the Insurance Charges payable by the farmers shall be financed by loan disbursing office of the Bank, and will be treated as additional component to the Scale of Finance for the purpose of obtaining loan. For farmers covered on voluntary basis the sum-insured is up to the value of Threshold yield i.e. threshold yield x (MSP or gate price) of the insured crop.

***PROCEDURE FOR SETTLEMENT OF CLAIMS*:**

For coverage through Banks, the claim amount along with particulars will be released to the individual Nodal Banks. The Banks at the grass-root level, in turn, shall credit the accounts of the individual farmers and display the particulars of beneficiaries on their notice board. The Banks shall provide individual farmer wise details claim credit details to IA and shall be incorporated in the centralised data repository. ***For coverage through other insurance intermediaries,*** the claim amount will be released electronically to the individual Insured Bank Account

***ASSESSMENT OF PREVENTED SOWING*:**

The adverse weather conditions ~~shall be defined~~ in the notification and shall be captured by notified weather station/s in the District. The extent of claims payable will be decided on the basis of weather data recorded at the notified weather station/s for the purpose. The crop-wise scale of payment, upto a maximum of 25 per cent of Sum Insured shall be worked out by IA based on a notified pay-out structure on the occurrence of pre-declared events such as month-wise deficit in aggregate rainfall during a specified period assessed through Reference Weather Stations tagged for the Notified / Group of Notified Area. The insurance coverage shall cease to operate for the crop in the notified area. The cover is available during Kharif season for recognised rain-fed areas and crops. The data provider will be notified by the SLCCCI.

LOCALIZED CALAMITY LOSS ASSESSMENT:

Loss assessment and modified indemnity procedures in case of occurrence of localized perils, such as hailstorm, landslide, flood, and inundation shall be for a cluster of affected farms or affected village and the settlement of claims, if any, will be each insured farmer covered under assessment. The District Administration will assist IA in assessing the extent of loss.

POST-HARVEST LOSS ASSESSMENT:

Loss assessment and indemnity procedures in case of occurrence of Post-Harvest Loss shall be for a cluster of affected farms or affected village and the settlement of claims, if any, will be each insured farmer covered under assessment. The District Administration will assist IA in assessing the extent of loss.

SHARING OF RISK:

Risk will be shared by IA and the Government as follows:

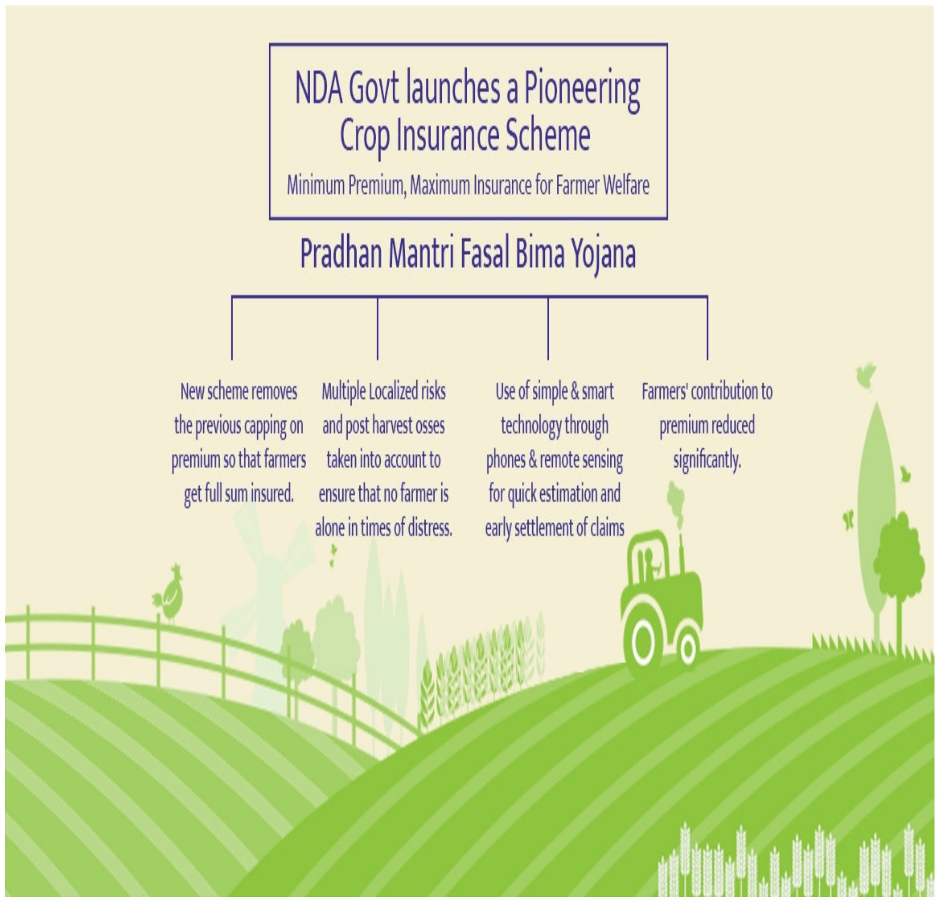
The liability of the Insurance companies in case of catastrophic losses computed at the National level for an agricultural crop season, shall be up to *350 per cent of total premium collected (farmer share plus Government subsidy) or 35 per cent of total Sum Insured (SI), of all the Insurance Companies combined, whichever is higher. The losses at the National level in a crop season beyond this ceiling shall be met by equal contribution (i.e. on 50:50 basis) from the Central Government and the concerned State Governments.*

PUBLICITY & AWARENESS:

Adequate publicity needs to be given in all the villages of the notified districts/ areas. All possible means of electronic and print media, farmer's fair, exhibitions including SMS messages, short films, and documentaries shall be utilized to create and disseminate awareness, benefits and limitations of the Scheme among the cultivators and the agencies involved in implementing the Scheme. Agriculture/Cooperation Department of the States in consultation with IA shall work out appropriate Plan for adequate awareness and publicity three months prior to the start of coverage period. IA shall also assist the State Government/ UT in capacity building for effective implementation of the scheme and organize training workshops/sensitization programme for various stakeholders.

REVIEW OF THE SCHEME:

Government of India shall issue operational guidelines and modalities, which may be appended from time to time, for implementation of the scheme provisions with detailed steps and processes involved, terms and condition applicable, roles and responsibilities of various agencies involved in execution of the scheme and roles and responsibilities of other related stakeholders. These operational modalities shall be considered as part of the scheme. The scheme may be reviewed periodically and additions, deletions and modifications of the provisions may be done as deemed necessary. During each crop season, the agricultural situation will be closely monitored in the implementing States / Union Territories. The State / UT Department of Agriculture and district administration shall set up a District Level Monitoring Committee (DLMC), who will provide fortnightly reports of Agricultural situation with details of area sown, seasonal weather conditions, pest incidence, stage of crop failure (if any) etc. The operation of the Scheme will be reviewed annually, and modifications as may be required would be introduced. Periodic Appraisal Reports on the Scheme would be prepared by Ministry of Agriculture, the Government of India / Implementing Agency.



FEATURES:

There are a few significant features about the new scheme which will make it both – *Farmers' Friendly* and a *Game-Changer* in the long run. The new Crop Insurance Scheme is in line with '***One Nation – One Scheme'*** theme. "It incorporates the best features of all previous schemes and at the same time, all previous shortcomings/weaknesses have been removed highlighting the end of the cob of complexities the farmers had to face earlier. Under the new scheme farmers will pay only 2 per cent of the premium fixed by insurance company for ***Kharif*** grain/ oilseeds crops and 1.5 per cent for ***Rabi*** foodgrains/oilseeds crops and 5 per cent on all commercial (cocoa, coffee, cotton, tea, tobacco) and horticultural crops. The balance amount towards the premium will be paid by the government. ***PMFBY*** is likely to cost the central government Rs 8,800 crore. State governments too have to contribute an equal amount for this scheme and aimed at covering 50 per cent of the crop area of 194.40 million hectare annually. Last year, only 27 per cent of the crop area was insured which cost Rs 3,150 crore to the national exchequer. The new scheme will help increase the crop insurance penetration up to 50 per cent, from a present low of 23 per cent penetration.

In the ***Modified National Agricultural Insurance Scheme***, the premium was in the range of 2 to 15 per cent of the sum insured. The government provided a subsidy of 75 per cent if the premium was above 15 per cent. The insurance companies calculated the premium based on actuarial rate which for some crops were very high that went up to 40 per cent. If the actuarial rate was higher than the capped rate, then the sum insured would come down accordingly. For example, let us consider that the sum insured for a crop is Rs 30,000 with premium capped at 11 per cent. If the actuarial rate is 22 per cent for the crop, then the sum insured will be reduced to Rs 15,000 under ***MNAIS***. There is no cap on the total value government will be contributing towards the subsidy in ***PMFBY*** scheme. Even if balance premium is 90 per cent it will be borne by the government. The removal of capping on premium is expected to encourage more farmers to join the scheme.

HOW DIFFERENT FROM EARLIER SCHEME?

Comprehensive Crop Insurance Scheme, launched in 1985, was the first nationwide scheme, which later gave way to ***National Agricultural Insurance Scheme*** (NAIS) in 1999, followed by the ***Modified NAIS*** (MNAIS). These schemes were merged into ***National Crop Insurance Programme*** in 2013. The unit of calculating damage is taken as a village in all these scheme - which is wrong. It should be the smallest unit of land owned by an individual farmer. Even if a farmer loses crop on one Marla of land it should be covered, which is not the case.

Farmers will get a higher claim for the full sum insured unlike the existing schemes such as *National Agricultural Insurance Scheme* (NAIS) and *Modified National Agricultural Insurance Scheme* (MNAIS). The new scheme will cover yield loss of standing crops, prevented sowing/ planting risk, post harvest losses and localized risks, including inundation. At present, loanees farmers

UPA & NDA schemes at a glance

No	Feature	MNAIS [2010]	PM Crop Insurance Scheme
1	Premium rate	High	Lower than even NAIS (Govt to contribute 5 times that of farmer)
2	One Season – One Premium	No	Yes
3	Insurance Amount cover	Capped	Full
4	On Account Payment	Yes	Yes
5	Localised Risk coverage	Hail storm Land slide	Hail storm Land slide Inundation
6	Post Harvest Losses coverage	Coastal areas - for cyclonic rain	All India – for cyclonic + unseasonal rain
7	Prevented Sowing coverage	Yes	Yes
8	Use of Technology (for quicker settlement of claims)	Intended	Mandatory
9	Awareness	No	Yes (target to double coverage to 50%)

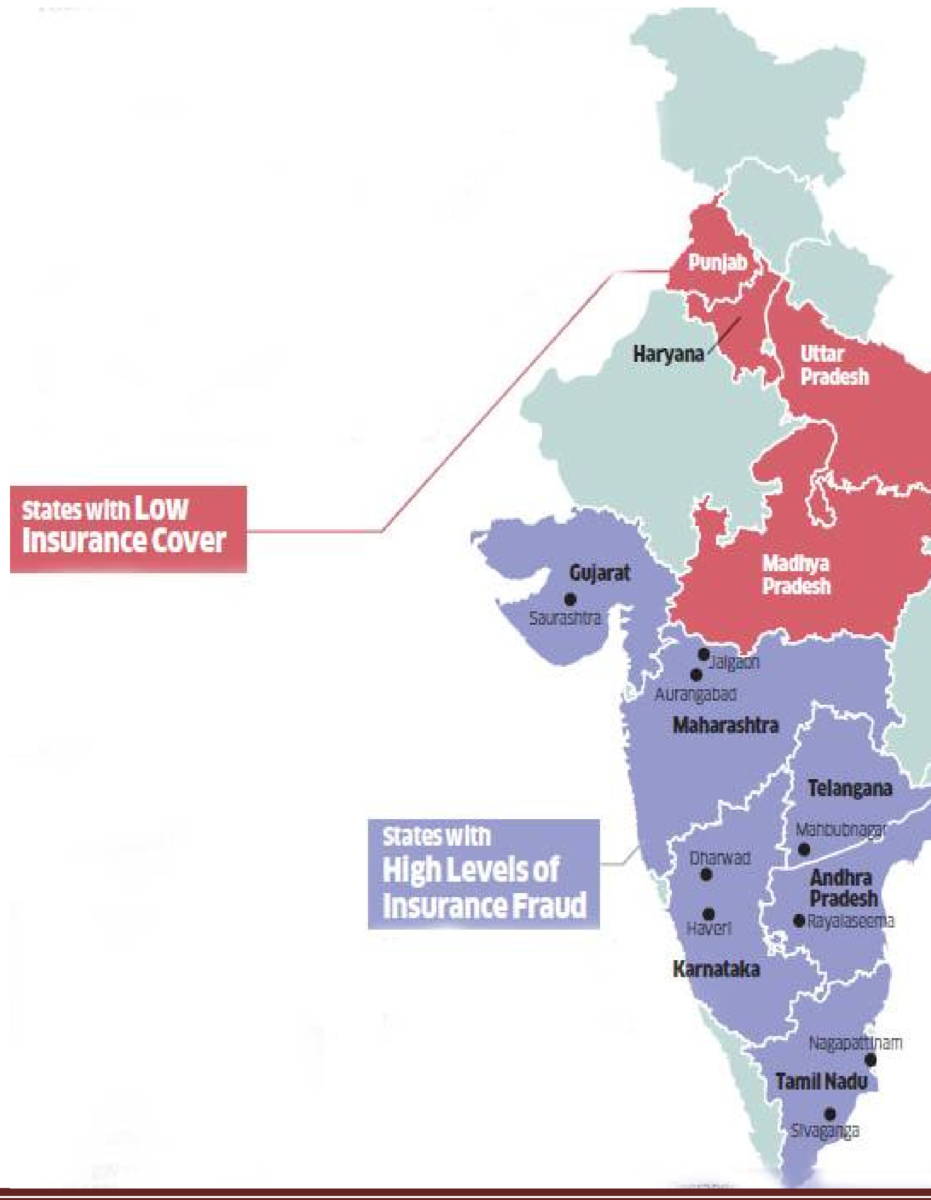
are mandated to take crop insurance cover. The new scheme is open to all farmers irrespective of whether they are loanees or not.

There will be one insurance company for the entire state, farm-level assessment of loss for localized risks and post-harvest loss. And private insurance companies, along with the Agriculture Insurance Company of India Ltd, will implement the scheme.

Under the previous crop insurance scheme, risks were only partially covered. The existing premium rates vary between 2.5 per cent and 3.5 per cent for ***Kharif*** crops and 1.5 per cent for ***Rabi*** crops but the coverage was capped, meaning farmers could, at best, recover a fraction of their losses". "Also, the premium for commercial and horticulture crops was calculated on actuarial basis, meaning premiums could be as high as 25 per cent depending on the risk factor involved.

THE BIG DIVIDE:

States - Punjab, Haryana, Madhya Pradesh and Western Uttar Pradesh have *Low Insurance Cover* as farmers here don't have any knowledge about insurance and remain without cover. Coverage in Maharashtra (Aurangabad and



Jalgaon), Gujarat (Saurashtra), Andhra Pradesh (Rayalaseema), Karnataka (Dharwad and Haveri), Tamil Nadu (Nagapattinam and Sivaganga) and Telangana (Mahbubnagar) is high and so is fraudulence. In some districts insurance and remain without cover. Coverage in Maharashtra (Aurangabad and Jalgaon), Gujarat (Saurashtra), Andhra Pradesh (Rayalaseema), Karnataka (Dharwad and Haveri), Tamil Nadu (Nagapattinam and Sivaganga) and Telangana (Mahbubnagar) is high and so is fraudulence. In some districts hundreds of farmers are literally living off fraudulent claims. The *Modus Operandi* in these areas is: Networks of farmers, bank officials and Agriculture Department officials run these rackets. Government officials show a higher loss while bank officials help farmers insure the same land repeatedly. Apparently there appears to be a sense of the huge divide. These schemes have also broadly cleaved India into two parts with one set of states, which are under-penetrated, reporting lack of awareness among farmers about insurance even as multiple frauds are being reported from the second set of states that have better coverage.

The direct comparison between the crop insurance schemes announced by the Manmohan Singh-government and the one announced by the Narendra Modi government is reported in the Table. Apparently, the scheme is certainly the best for the farmer till date as it provides for localized events and removes the cap. Apart from this, another major aspect of the scheme is the better use of technology. The government will use remote sensing, Smartphone and other modern technologies for accurate and quicker information on crop yields and losses.

FOOD FOR THOUGHT

That farmers have to pay the premium has met with a backlash in multiple states with several farmer associations even writing to insurance companies to not debit the insurance premium. Given that the banks are under pressure to meet targets for the KCC, they decide to waive off the premium component. Crop insurance schemes were linked to farm loans to provide comprehensive coverage. But since the premium has to be paid by the farmers, they prefer to do away with the insurance component. If you tell the farmer that the crop insurance will stop if you default on loan repayments, how is this helping him during a crisis? This is important, given that the state decided to set up crop insurance schemes not only to help the farmer but also from a food security perspective. Giving aid to small farmers in terms of financial stability is one way of ensuring food security.

PUNJAB STIGMA:

Punjabi farmers known as the food bowl of the country, face grave crop losses this ***Rabi*** season following inclement weather, but the state has no crop insurance scheme in place to help those affected to tide over the monetary loss due to the shortfall in yield or crop damage. This despite the fact that this has been a standard promise made by the *SAD-BJP* combine in their manifesto released for every general election for the past 15 years. The Centre has introduced several crop insurance schemes over the past three decades but Punjab farmers are not covered under any such scheme which facilitates them to insure their crop against all kinds of damage, including those due to inclement weather. And there seems to be no immediate move either to implement such a scheme.

Punjab's climatic conditions, it's cropping pattern and extent of damage does not fall within any of the Centre's Scheme Criterion. However, Punjab implemented the ***Weather-Based Crop Insurance Scheme*** (WBCIS) in 2008 launched by the Centre in collaboration with private insurance companies in a block each in Rupnagar and Gurdaspur districts. The experiment proved costly for Punjab. In one year, the state paid INR 5.3 lakh as premium to the insurance companies in *Kalanaur* in Gurdaspur while the companies paid INR 67,000 as compensation for the claimed damage. It was a useless exercise. Had the schemes implemented across the state we would have paid Rs 1,870 crore as premium alone. Furthermore, in all the schemes the unit of calculating damage is taken as a village, which is wrong. It should be the smallest unit of land owned by an individual farmer. Even if a farmer loses crop on one *Marla* of land it should be covered. But this is not the case. The agrarian state wants it to be state specific, fully reflecting on the ground situation prevalent in a particular state and a unified insurance product for farmers instead of separate income. Farm insurance product should be plot-based, giving farmers' freedom of choice to seek insurance for their farms. Cover total output value of given crop, meaning the sum insured should be equivalent to expected crop value. Farm insurance companies should offer multiple areas, risk insurance products to encourage farmers to buy insurance for 3 to 5 years. Insurance premium should be commensurate with risk and not based on any general calculation. Farmers should be given incentive up to 75 per cent of insurance premium. Additional incentives like no claim bonus, life, accident insurance covers be provided. Companies should prescribe critical mass of area or farmers not exceeding 10 per cent of total area or farmers to protect risks. Besides using weather monitors, companies should rely on time-tested methods of crop estimation, losses.

Punjab is considering adopting the ***Pradhan Mantri Fasal Bima Yojana*** (PMFBY), *albeit* in a tweaked form. Centre is asking the state government to adopt this scheme for the cotton crop. However, the Punjab Government, having worked out its own economics on the premium to be paid, feels that not many farmers will be able to pay around Rs 1,500 per acre as premium for crop insurance.

The ***Pradhan Mantri Fasal Bima Yojana***, hailed as one of the most farmer-friendly crop insurance schemes of independent India, run into rough weather in Punjab. Initially, Punjab government was not too keen to adopt *PMFBY* and *Weather-based Crop Insurance Scheme* (WBCIS) as the state's production variability was very low due to assured irrigation. With crops been affected due to unseasonal rains in the recent past, Punjab government is considering adopting the ***Pradhan Mantri Fasal Bima Yojana***. Farmers were also not encouraged to take crop insurance as they could save their crops during drought through additional irrigation. Even the state government has been providing electricity subsidy to farmers for this purpose.

After seeing the damage due to recent unseasonal rains and hailstorm, Punjab has expressed its desire to implement PMFBY and WBCIS for crops which have very high production variability, particularly cotton and major crops, in the areas bordering Rajasthan. Initially, the state was at loggerheads with the Centre over the efficacy of the crop insurance scheme as the scheme provides an indemnity level of 90 per cent only. In Punjab, the average loss of major crops, ***wheat and paddy,*** is between two to three per cent. Punjabi farmers will not benefit from this scheme too. In a written submission to the Union Ministry of Agriculture, the State has sought the indemnity level be raised to 95 per cent. The scheme proposes the average crop size over the previous 10 years as the benchmark for indemnity; On the other hand, state government has requested the Centre to consider only the previous year's crop as a parameter. The new crop insurance is aligned to the needs of rainfed states. Punjab is never declared drought-hit and farmers are provided assistance in the form of free power to exploit groundwater to save crops. Last year, Punjab Government spent an additional Rs 1,400 crore on power subsidy to agriculture to save the ***Kharif*** paddy. Punjab average power subsidy to agriculture is an estimated Rs 5,000 crore, which helps us maintain the nation's food security. The harvest lying in the field is covered by weather insurance. In Punjab, due to mechanical harvesting and efficient transport, the harvest reaches the market in 48 hours. The state wants that the insurance scheme should also cover the produce lying in market yards, waiting to be bought by agencies. Punjab also wants the insurance premium to be scaled down to one per cent as farmers in the state have huge debts and many cannot afford the insurance premium.

Though the Centre is insisting that the PMFBY be implemented in its present form, Punjab is not inclined to implement the *Pradhan Mantri Fasal Bima Yojana* as it does not suit its farmers. Punjab has proposed a *Crop Compensation Fund* as an alternative. PMFBY in its existing form was not beneficial to Punjabi farmers. The crop insurance scheme devised by the Centre could not be implemented across the country due to various factors, including weather variations, different cropping patterns, irrigation facilities and other ground realities. In view of these factors, the Centre should come out with state or region specific crop insurance schemes. For instance, yield level is not affected even after severe drought or deficit rain because of the available infrastructure in Punjab.

In the case of hail storm or other vagaries of nature, the damage to crops is by and large plot (field) specific and not area specific. Hence, the proposed scheme should be modified in view of the suggestions forwarded by the officials concerned. However, there is no response from the Centre to the suggestions made by the state government so far. Centre wanted to cover 50 per cent farmers in the next three years. For this, the Centre would have to contribute about Rs 250 crore as premium per annum in case of Punjab. The state has proposed that instead of giving premium for the insurance scheme, the Centre should give the same amount for the proposed crop compensation fund and an equal amount would be contributed by the state. Some money could be contributed by farmers, who are also supposed to pay a certain premium under the Bima Yojana. Such a revolving fund would be enough to fully compensate farmers in case of crop damage due to hail storm or other calamities. Furthermore, such damage is not caused every year. The damage to crop on average is never more than 10 per cent and it happens once in three or four years. The product should cover the gross output value of a given crop, meaning that the sum insured be equivalent to the expected crop value. Another objection that the state has raised is that the insurance premium be commensurate with the risk and not based on any general calculation – 0.5 to one per cent in Punjab — and that farmers be given a ***No Claim Bonus*** for the years when they do not suffer any crop loss.

To prevent suicides, farmers must be provided just compensation. Those who get burdened by debt must be given “debt counseling” to prevent possible suicide. There should be a law that would allow a debt-ridden farmer to file for bankruptcy in extreme situations. Furthermore, PAU faculty was highly diversified during 1960s and 1970s. A large number of faculty members were trained in the US, Canada, Australia, or England. However, currently there is much inbreeding, with more than 95 per cent faculty having received their basic and doctoral degrees from PAU. For novel ideas to be infused into the educational system, training in advanced countries is a must. The state government should provide regular funding for sending Assistant Professor-level scientists for receiving at least one-year post-doctoral training in cutting-edge technologies in advanced countries. Henry Ford once said, “If you always do what you've always done, you'll always get what you've always got.” Business as usual will not help solve the agrarian problems.

The agrarian crisis in Punjab cannot be tackled if the governments continue to entrust those who are responsible for creating the problems in the first place with finding solutions. Many are ready to take credit for the "Green Revolution," but no one comes forward to accept the blame for erroneous policies. A visionary plan is needed. Punjab needs to increase per acre income; the only way of doing so is by going up the value chain. We need to diversify into orchards, floriculture and vegetables... Preferably to cater to the European and American markets. Instead of trying to retrain PAU officials, the state needs to do a contract with an institution like University of California, Davis to provide technical knowhow in terms of best Irrigation practice's (drip and sprinklers) set up labs to check toxicity or other variables from the produce and an integrated cold chain and delivery warehouses so that our produce can be shipped abroad and support dairy by stopping production of fake milk.

INSURER ROLES:

With the launching of new crop insurance scheme from next ***Kharif***, the industry hopes that the move is likely to more than double the agriculture insurance business within very first year of implementation of the scheme. Insurance Companies, which offer agri insurance business, have business of around Rs 5,000 crore and it is likely to cross Rs 13,000 crore by the end of the current fiscal year as many new players entering the fray in an aggressive manner. It is high time that India should think in terms of setting premium rates and allow the insurance companies to compete for service. The scheme is highly ambitious and achievable. *IRDA* has promised to make it successful. Also AIC, 10 private and four state-owned non-life insurers have evinced their interest to participate in the scheme. The various empanelled private insurance companies so far are: 1) *ICICI-Lombard* General Insurance Company Ltd. 2) *HDFC-ERGO* General Insurance Company Ltd. 3) *IFFCO-Tokio* General Insurance Company Ltd. 4) *Cholamandalam M S* General Insurance Company Ltd. 5) *Bajaj Allianz* General Insurance Company Ltd. 6) *Reliance* General Insurance Company Ltd. 7) *Future* General India Insurance Company Ltd. 8) *Tata-AIG* General Insurance Company Ltd. 9) *SBI* General Insurance Company Ltd. 10) *Universal Sompo* General Insurance Company. However, only one company will be allowed to serve one area and that area is decided by the Ministry of Agriculture, Government of India through bidding. A tender is opened for each district of India and companies are allowed to bid in that. Obviously there is much competition, to win the tender companies usually quote lower bids which in turn are very helpful for the farmers. These companies have started their operations. In fact ICICI- Lombard is the first company to launch weather based crop insurance. Already the largest non-life insurer *New India Assurance*, which is a fringe player in the crop insurance front, has decided to grow the book aggressively. The agriculture insurance is the largest insurance portfolio after motor and health so it can be easily tapped by the companies too.

The scheme has a host of features which makes it a perfect solution tailor made to suit the needs of the Indian farmer. Most of the insurance companies feel that success of this program lies in increasing awareness amongst the farmers about this scheme. Only premium reduction would not help much in increasing coverage of farmers under the scheme. There is also an urgent need to launch campaigns to educate farmers and create awareness about the scheme among them. Since the schemes are government run, they have limited scope to spread awareness. But the insurance companies have to play a vital role in bringing about awareness among farmers on the scheme and its details. Today they hide behind the banks. The banks are the front-end transaction faces for crop insurance. Farmers are not even aware that premium is being deducted for insurance from their crop loan amount disbursals. The banks currently manage the process of enrolment of farmers on behalf of insurance companies. Farmers taking loans take insurance by default, but a majority of those who haven't taken loan from banks are not even aware of crop insurance scheme. Among the insured farmers only 10 per cent of them haven't taken loan from banks.

Insurance companies though differ with the view that there are a lot of constraints when it comes to crop insurance. Sources among insurance companies said that lack of e-records on land is a big constraint for crop insurance. Only few states in India possess e-records for land owned by farmers. They believe if crop insurance is made mandatory, it may improve the coverage significantly. The insurance companies providing the cover play an important role in executing the scheme and thereby it's successful implementation. However they felt need to see the detailed rules about the scheme to understand it better. Like vehicle insurance, in case of not availing the insurance benefit by farmer in the first year, there should be provision of reduced premium in the succeeding year – ***Non Claim Allowance***.

In almost all countries with government support, premium rates are set by the government, and all the participating insurers have to follow these rates and can market the product wherever they want to, primarily competing with other insurers on qualitative parameters like level of service, quick settlement of claims, value added services provided etc. However, in India the crop insurance being mandatory for borrowing farmers there is a difficulty to involve all insurers everywhere. For this reason, the government decided to have a single insurer in any district to avoid duplication in coverage etc. The selection of insurers is based on the premium rates rather than qualitative parameters or both. Consequently we have seen in the recent past some insurers having bagged the district at a lower premium rate either had difficulty in finalizing the claims or avoided marketing the product in relatively high risk areas.

This scheme will let farmers pay a very low premium to insure their crops**.** Farmers will have to pay a premium of only 2 per cent of the sum insured for ***Kharif*** crops, 1.5 per cent for ***Rabi*** crops and 5 per cent for horticulture and cash crops. Currently, farmers pay around as high as 15 per cent of the sum insured as premium under the existing NAIS and the MNAIS. This scheme also promises to provide prompt and easy settlement of claims through the use of technology like GPS, smart phones, remote sensing and drones to access actual crop damage. The claim amount will be directly transferred to the bank accounts of the farmers. The scheme also provides for coverage of post harvest losses and localized crop losses like hailstones etc. In addition, banks will be willing to lend more to farmers as the risk of lending to them will reduce due to insurance.

Well, we can't blame the insurers. As long as the premium rates charged are reasonable and claims are assessed and paid transparently they are doing their job. However, the government has to make sure that the insurers are there to underwrite the product at a reasonable targeted loss ratio (say, 80 per cent) and carry a reasonable risk in their books. In the absence of a mechanism to monitor, many a insurer getting into government subsidized crop insurance to book reinsurance commissions (rather than underwriting the product), which is evident from very low level of risk retention in their books. The government has been talking about creating a *Technical Support Unit* (TSU) to take care of the technical side of the scheme as well as guiding and monitoring the insurers, but very little progress has been made so far. As of now, it is mandatory for the loanee farmers to go for crop insurance. However, the government's focus will be to bring more and more non-loanee farmers, which comprise merely 5 per cent of total farmers at present, under the scheme. In future, a total of 5,000 automated weather stations will be set up across the country under PPP model for the successful implementation of the scheme.

AMBIGUITY:

Insurance based on input-cost mechanism is not going to help. The policy should be to protect the income of farmers from agriculture risks. Besides land record digitization, satellite images should be used for quicker assessment of crop damage and settlement of dues to farmers. Declaring village as a unit for crop insurance would hardly fulfill the basic spirit behind introducing the scheme. Rather it should ensure that plot was considered as a unit to compensate the farmers for their loss. Moreover, insuring the crop only if whole village pays its premium, was also an "impractical assumption.

Prima facie, the ***PMFBY*** appears to be very attractive, but unlikely to bring in any significant relief to farmers; even as it increases the governments spend multifold. The framers of the scheme don't seem to have understood that the insurance protection by itself is not going to address the biggest problem — ***Farmers' Poor Incomes***. Surveys and studies have affirmed that the incomes of farmers are unsustainably low. The NSSO 70th round, for instance, shows that those operating on less than a hectare — that's 70 per cent of farmers — are earning much less than their minimum consumption expenditure. In fact, the Socio-Economic and Caste Census 2011 has stated that the per capita earning of the main members of 75 per cent of all rural households is less than INR 5,000 per month. Apparently, making the insurance business sustainable with actuarial premium rates is not going to help raise farmers' incomes.

Another anomaly of the scheme is that the unit of insurance is going to continue to be *'Area-Based'* — village/village Panchayat for major crops and the area above that level for other crops. Individual farmers suffering losses are not going to benefit unless the entire area gets affected. Another glaring omission is the fate of tenant farmers whose number is substantial. There is no clarity on whether they come under the ambit of the new insurance scheme or not”. Model would not work given the measly budget allocations made to agriculture by the State governments. It would have been better if the Central government had taken the entire responsibility as the estimated expenditure of Rs. 9,500 crore was not a big amount. India needs an “effective, inclusive and universal” crop insurance scheme to act as a safety net for farmers as frequency of extreme weather events due to climate change, is likely to increase in the future.

ATTRACTIVE BUSINESS:

The balance between the actual premium charged by the insurance companies and that paid by farmers is met by the government, no matter how big the gap; may be 90 per cent, as asserted by the government. Insurance companies can fix their own rates without a ceiling to avoid any loss. That means the new crop insurance is going to be an attractive business. There will not be a capping on the insurable sum. The scheme also envisages using technology, including smart phones, to capture and upload data of crop cutting to reduce delays in claim payment to farmers, and remote sensing to reduce the number of crop cutting experiments. A closer scrutiny of the details shows that the benefit to the farmer isn’t commensurate with the cost to the exchequer. The Central and State governments are going to give premium subsidy in equal proportion upfront — the estimated combined expenditure is INR 17,500 crore a year — whereas the insurance companies are allowed to fix their own rates of premium taking into account costs, risks and margins.

INSUFFICIENT REACH:

There is also the issue of penetration. According to reports and the government’s own claims, only 25 per cent of the cropped area of 194.40 million ha has been covered under the insurance scheme so far and the goal now is to extend it up to 50 per cent in three years. According to NSS 70th round survey only very small segment of agricultural households insured their crops against possible crop loss (e.g. for instance, 95.2 per cent paddy farmers in 2012 and 96.1 per cent of them in 2013 did not insure. Likewise 95.3 per cent of wheat farmers in 2012 and 95.9 per cent in 2013 did not insure their crops).***PMFBY*** appeared shortly after the RBI-appointed committee on medium-term path on financial inclusion had a suggestion for phasing out the agricultural interest subvention scheme and ploughing the subsidy amount into a universal crop insurance scheme, which means a likely increase in the cost of farming. The Centre should, therefore, re-examine this insurance scheme and all other farm policies and revise them in such a way as to cut the costs of farmers' inputs, raise their revenue and thereby increase their income. It cannot afford to allow the agriculture sector — the principal source of food and employment in the country — to be controlled by so-called '***Market Forces'***. Crop loss occurs due to many factors including weather not being conducive, pest not eliminated despite application of pesticide etc.--not just draught, floods etc. Crop loss due to any reason other than sheer negligence or acts of bad faith on the part of the farmer should be covered by crop insurance. If the premium of insurance is too high, some of the subsidies like on fertilizers may be reduced and deployed as subsidy on insurance. Negligence and acts of bad faith, including those perpetrated by neighbours, friends etc. may be brought to light through remote sensing devices, local enquiries etc. The farmer may not paying greater portion of the premium if his realization on sale of his produce is higher through online marketing directly to the consumers--large-scale consumers like Restaurants, caterers and/or cooperatives of small-scale consumers which may be none other than Residents' welfare Associations/Panchayats. The government needs to legislate on the subject, making insurance cover compulsory. The government should pay the premium for small farmers. Holding agricultural as well as bank officials accountable for process pertaining to crop insurance should also be a part of the legislation.

ACREAGE DISCREPANCY

Some areas in the past have reported excess insurance coverage vis-à-vis planted acreage, leading to "over insurance". Ideally the discrepancy should be handled at farm level to protect the interest of farmers with genuine insurance coverage. However, in the absence of digitized farm records on a GIS platform, it would be cumbersome to physically verify each farm. For the time-being, it is to be addressed as follows:

- Wherever the "*acreage discrepancy*" is likely, the acreage insured at IU level shall be compared with average planted acreage of past three years, and the difference will be treated as " excess insurance coverage".
- Sum insured may be scaled down in the ratio the average of three years' actual planted acreage bears to the insured acreage for the given crop.
- Claims shall be calculated on the scaled down sum insured.
- Premium shall be retained by the insurance company for the portion of sum insured scaled down.

Once the individual farms (plots / survey numbers) are digitized and available on a GIS platform, it is possible to overlay the crop cover as derived using satellite imagery on the GIS platform to identify the crop and estimate the cropped area on each farm. This should lead to identifying the acreage discrepancy at individual farm level.

THE CHALLENGES

The coverage of crop insurance schemes has been too low due to lack of awareness among the farmers. The coverage at present is as of low and stands at just 23 per cent. The government is aiming at 50 per cent coverage with the new scheme. This, *prima facie*, is going to be the biggest challenge for the government. Secondly, crop insurance sector is bogged down by frauds. Bank officials, insurance officials and farmers are hand in gloves to siphon off insurance money. How is the new scheme going to address this? Third, it is not yet clear what will be the yardsticks the revamped crop insurance scheme will use to assess crop losses. Although the low premium will drive penetration and enrolment and make the insurance scheme viable for insurers, it remains to be seen if the unit for assessing crop loss has been reduced to the village level.

COVERAGE

The coverage under the scheme is most important because well planned insurance has no meaning if it fails to cover a significant farming population. The benefit of all the crop insurance schemes was availed by farmers of Gujarat, Maharashtra, Andhra Pradesh and Madhya Pradesh. Their share was nearly 80 per cent of the claims paid in the country. On the other hand, Bihar, Assam and north-eastern states lagged behind in availing the benefits of crop insurance. However, the scheme covered mainly large farmers but small farmers did not get benefits all the insurance schemes of the scheme. The share of Bihar was about 4 per cent of total claims paid in the country. The performance of National Agricultural Insurance Scheme has also been unsatisfactory in Bihar During last 6 years number of farmers covered under crop insurance scheme including weather based in both crop season increased from 0.08 million in 2001-02 to 0.36 million in 2011 - 12 which constitute about 5 per cent of farm families in Bihar and participation of semi- marginal farmers was limited. In ***Rabi*** 2011-12, only 21 thousand farmers participated in crop insurance scheme including weather based which is less than number of villages in Bihar (about 45,000). In terms of numbers the scenario is still worse. Majority of the farmers are not under insurance coverage. For instance, 95.2 per cent paddy farmers did not insure their crop in 2012 and in 2013 their number increased to 96.1 per cent. Similarly, a high percentage of wheat farmers — 95.3 per cent in 2012 and 95.9 per cent in 2013 — did not insure their crops as per NSSO's 70th round survey.

It is clear from above facts that the farmers of Bihar are still much behind in getting benefit of crop insurance scheme. The main reasons for poor participation of farmers in crop insurance scheme are poor awareness of farmers, non – cooperation of concerned officials, inefficient, un-reliable and untimely availability of crop cutting data. The non-coverage of most of horticultural crops was also responsible for poor progress of crop insurance scheme in Bihar. Low level of credit flow to agriculture sector in Bihar has also contributed to unsatisfactory progress of the scheme

For many states it would be highly challenging to provide the necessary premium subsidy budget. Already states are worried about the increased budget (at present level of penetration) with the cap on premium rate removed and farmers' share of premium reduced. Unless the subsidies are released on time, would seriously challenge the government's avowed objective of quick settlement of claims, adversely impacting the credibility. Presently there are instances where claims are pending for over 12 -18 months due to non release of premium subsidy. Cent per cent subsidized insurance could be provided for farmers that do not have loans so that they learn from experience and their willingness to pay for insurance increases overtime.

TENNANT INSURANCE:

The commercial farming taken up by tenant farmers, are grossly left out of the programme, in states where it is not legally protected. As such a good section of real farmers are denied of the facility. We should have strategies to address these issues. Tenant farmer can insure his crop subject to providing legal documents of tenancy. But, in Indian context, farmers rarely go for formal agreements while leasing in/out land as sharing arrangement is based on mutual trust. In most states formal tenancy agreement is not a practice. The reason is that there is fear of losing the ownership on land in case of prolonged tenancy. There is a discussion going on in Parliament to change this situation and protect the ownership rights. Yes, this is a constraint for those who are not owning land but cultivating. Though officially this number is low but it appears to be more as people do not give right information on land lease.

But, it is a fact, majority of landlord of farm is away from farming due to lack of agriculture labour and available agriculture labour cost is very high after coming *MGNREGA*. All farms are handed over to agriculture labour for farming on certain term and condition. This labour is illiterate, economically very weak. It is big challenge to why they can be benefited from this marvelous scheme. In Eastern India, there is almost no landlord. In Bihar, 0.52 per cent farm holdings own more than 4 ha land and in India also, only 5 per cent farm holdings belong to this category. The majority of farming families are labourers. However, it is almost impracticable to handover land or even cultivating right to labours. It will have a great political consequence. Promoting contract farming may be a better alternative.

With such tiny holdings: Is insurance the best policy option? Should the government not spend to set up non-farm? That will be the best insurance for such marginalized farmers. Are we pushing the pedal too hard trying to cover everyone through crop insurance? Should we not link it to diversification of income? It seems actuarially very difficult to implement this in a place like Bihar. There are many missing markets for rural settings All these products be it insurance, credit, information need to be bundled otherwise they will be outcompeted say even by informal insurance sector. That's a reality of rural setting if you need a sustainable product bundle it. Now the question arises: ***Are we bundling insurance with something***? However, insurance and non-farm need not be mutually exclusive. Both are needed. A tiny farmer needs insurance against crop failure, as much as income diversification through non-farm. Bundling is a certainly a good idea and needs to be explored.

Bundling is a necessity for increasing the uptake of an insurance product. In terms of non-farm activity, these are not mutually exclusive. But insurance product be designed in a way that some diversification occurs, for example by making premiums a function of it and payouts also adjusted. But it is feared that a well functioning insurance will have benefits but can also prevent diversification of income sources. Exclusion of tenant farmers from insurance benefit is an issue in some states. A better approach for making small farms commercially viable would be through aggregation and contract farming where insurance benefits can be ensured.

POST HARVEST LOSSES

Low premium, covered prevented sowing, post harvest losses and coverage of most of horticultural crops are important new issues in ***PMFBY.*** But if not mistaken post harvest losses issue is little complex in ***PMFBY*** - something likes damages within 14 days. Also is there an issue of what is classified as preventable and what is not. Post harvest loss only considers physical damage and not loss of value. Is that correct? , the post harvest loss could be in terms of quantity as well quality. Logically, reduction below MSP/farm gate price multiplied by loss in weight should be the basis for compensation

In post-harvest losses, coverage will be available up to a maximum period of 14 days from harvesting for those crops which are kept in "***cut & spread***" condition to dry in the field. Loss / damage due to occurrence of identified localized risks such as hailstorm, landslide, and inundation affecting isolated farms in the notified area would also be covered.

Under the PMFBY, heat wave, cold wave and frost are not covered as natural calamity for giving compensation which will lead farmers to suffer great loses in ***Kharif*** and ***Rabi*** seasons. Government must plans to protect the interests of the farmers suffering losses on account of heat wave, cold wave and frost. PMFBY doesn't cover quality losses. Only the physical losses are covered. For example a rice field measuring 2 h. is insured for Rs. 80,000 and the harvested crop (lying in cut and spread condition) on 0.75 ha is damaged. The damage is estimated at 50 per cent (50 per cent of the crop is totally damaged either because of discoloration or rotting etc). The loss payable is Rs. 80,000 * 0.75 * 50per cent/2 = 15,000. Many of the special benefits of PMFBY (prevented sowing, post harvest losses, on-account payment of claims, indemnity based assessment in case of localized calamities have not been handled by insurers, except say, AICI. It would require some expertise and dedication to build the capacity for efficiently handling these.

DATA CONSTRAINTS

There are data constraints that also greatly limit the use of insurance. Additional yield data and farm gate data, data on land holdings, crops grown and damage calculations are needed. The scheme now covers most of the crops and with small areas in particular crops, loss may not be assessable via remote sensing or drones. Lack of adequate databases for determining premiums and indemnities and lack of adequate infrastructure create constraints in implementing crop insurance in India, particularly in backward states. The procedure is complicated for fixing the farm gate price for non-MSP crops, which may give rise to disputes. It was also suggested that modernization of the land records should be promoted by the states and provisions of including land tenants be considered.

Over nearly 25-30 years of implementation of crop insurance, adequate data base for determining premium rates and indemnity levels have been built up at area (Tehsil/block/circle etc) level. But the fact remains that certified yield data at gram Panchayat/village level are unavailable for most of the areas. Hence, there is inadequate database for doing competitive actuarial pricing of crops

One of the biggest constraints is data at farm gate level on land holdings, crops grown, and damage calculation. This challenge is aggravated due to small land holding which increases the transaction cost. There is no land title to share croppers as well as women farmers. But these constraints give rise to opportunities to develop proper cadastral maps, recognizing share croppers as producers if not land title holders, creating tech like UAVs to generate ground level data. This also corroborates earlier mention about collaborative community models with key stakeholder roles to be played by FO/FPOs.

Further FPOs generally do have records of their members. This can be aggregated through them. Though the task is humongous but can be a good start. For fruit crops remote sensing can be used to determine the crops grown, its progress and damage caused. Currently few companies are using these technologies but to a very limited geographical area. The damages are lot of times very localized, in those scenarios it will be quite challenging if one has a community based model.

There is also a lack of public awareness of agricultural insurance. In particular, backwards regions are still facing lack of development in getting the benefits of government programs since they lack awareness and non-corporation of concerned officials, as well as unreliable and untimely harvesting information.

There is high expenditure from the public sector, as the scheme is not based on commercial viability, but depends on large subsidies, which may become problematic in the long run. To reduce competition, the government decided to have a single insurer in any district to avoid duplication in coverage. The selection of insurers is based on the premium rates rather than qualitative parameters which can be restrictive in terms of growth. Political pressure and interference can also lead to complications.

SEGREGATION:

One macro challenge remains on how to segregate insurance and disaster relief. Insurance products have a commercial basis whereas the disaster relief for small and marginal farmers has a social implication. This poses structural challenges. However, for India it becomes important to distinguish between subsistence farmers and the commercial farmers. Insurance should be designed as a social protection policy rather than as a commercial risk management tool for subsistence farmers with no or very low chance to become commercially viable. On the other hand, insurance should be designed as commercial risk management tool for commercial farmers with chances to expand? Apparently, there is a challenge to distinguish between commercial farmers and subsistence farmers from policy point of view. However it should be possible to do this in case of high value and horticultural crops (crops not directly under purview of Minimum Support Price). There some insurance products can be designed for commercial farmer's basis commercial risk management.

In addition, there exists a concern about budgetary arrangements coupled with removal of cap of premium rates along with reduced farmers' premium share, releasing subsidies on time, difficulty in enrolling non-borrowing farmers, and inadequate yield estimation surveys. Existing infrastructure and capacity is also inadequate to quickly monitor and disburse the claims at the required pace. In Eastern India, farmers do not practice commercial farming hence policies and programs of insurance should be formulated considering abundance of subsistence farming. To successfully implement a meaningful crop insurance scheme across the length and breadth of country like India requires huge infrastructure and excessive organizational network.

AREA APPROACH BASIS:

Another anomaly is that the scheme will continue to be on 'area approach basis' — village/village Panchayat for major crops and the area above that level for other crops. What it means is that individual farmers suffering losses are not going to benefit, unless the entire area gets affected. Going a bit into history, a government commissioned study in 1947-48 had come out with two alternative models — one, an individual approach in which the loss is to be assessed to the individual farmer and his holding; and two, a homogenous area approach which assesses the loss in relation to the given homogeneous agro climatic area like whole village/block/taluq.

The homogeneous area approach was preferred over the individual approach as the latter was understood to be not feasible in terms of the costs involved to manage the scheme and the 'moral hazard' —the possibility of wrong claims by individual farmers. Apparently, disbelief of our farmers and/or incapacity to meet the costs continues even seven decades after such things were mooted.

All said, not all the farmers are going to make use of the scheme. As per the government's own claim, only 25 per cent of the cropped area of 194.40 million hectares has been covered under the insurance scheme so far and the goal now is to extend it to 50 per cent in three years. But, that is with regards to the cropped area. As per the *Commission for Agricultural Costs and Prices* (CACP), the average Sum Insured (SI) per hectare under the existing national agricultural insurance scheme was just Rs 18,464 (Rs 19,141 in ***Kharif*** and Rs 16,927 in ***Rabi***) in 2013-14. This is too low if one compares it with the gross value of output (GVO) for most crops.

The government should therefore relook at its farm policies and reframe them to cut the farmers' inputs costs, raise their revenue and thereby increase their income to make farming sustainable. Instead, the current farm policy seeks to push crop insurance business propped up by actuarial premium rates, while scheming to withdraw interest subvention benefit.

Though there is a little improvement in the new crop insurance but it still doesn’t sufficiently address the basic problem that exists in the current schemes. “The basic problem is unless the crop insurance is for per unit or per farm basis, it has little meaning for farmers. The new scheme compensates farmers on the basis of damage caused to the village not as per the unit of a farmer. It is the biggest drawback. Farmer at best can get compensation for an average crop loss suffered in a block even if his own loss in his crop field is several times higher. This is primarily the reason why farmers have never been enthused to take a crop insurance package.

There are various operational issues such as slackness on behalf of bankers in extending coverage to all loanee farmers, delayed submission of declarations, non availability of an integrated database of loanee farmers of banks with the database of insurance companies, accuracy of data etc. All these impact the efficiency of the program implementation process.

Area approach works well only when correlation between farmers yield and yield at crop cutting experiments are high. But the condition is rarely met resulting in 'Basic Risk' i.e., farmer suffering crop loss but not receiving compensation. Lack of transparency in settlement of claims (including yield loss estimation)

OPERATIONAL ISSUES:

Though some media houses are portraying the new insurance scheme as a saviour of farmers, does not mean that the sufferings of farmers have ended because the Government and some media channels are praising the scheme. We all remember that how ***India Shining*** proved to be the biggest failure after getting an overwhelming media hype across the country. The scheme, though unlikely to bring in any big relief to the farmer, is undoubtedly going to increase the governments' spend multifold to make the insurance business viable.

But the details unmistakably suggest that the so called benefit to farmers is not going to be commensurate with the cost to the exchequer. The central and state governments are going to give premium subsidy — the gap between the rates fixed by the companies and the farmers' share — in equal proportion upfront, whereas the insurance companies are allowed to fix their rates of premium taking into account their costs, risks and margins. That means the government is going to spend heavily even when there are no significant claims from the farmers.

The combined expenditure of central and state governments is expected initially to be Rs.17, 500 crore per year. The state governments have already started objecting to the heavy burden placed on them. But that is another matter. States having more risky agriculture like Rajasthan have to bear heavy burden as compared to Punjab where agriculture is less risky. It's another matter that Punjab agriculture is highly subsidized by providing free electricity and so on. Informal discussion with Dr Ramesh Chand, Hon'ble Member NITI Aayog, more will be premium where agriculture is more risky and states have to contribute even up to 15 per cent of the premium share. Majority of the states will not be in a position to meet the financial needs as they are under financial red.

For voluntary crop insurance, banks act as financial intermediaries. But, there is very little incentive for the banks to promote voluntary crop insurance. It will merely pile up the work load and only 4per cent of the premium is paid to bank as service charge, which is very low.

Delay in settlement of claims mainly due to loss sharing mechanism between center and state, which is time consuming process Insurance is a financial tool to manage risk and not an investment to increase income. So, awareness creation and training programmers plays a crucial role in convincing farmer to take up insurance. But, there is not enough thrust given to this aspect. Overall, the delivery mechanism needs to be modified if the crop insurance is to serve the intended purpose. Quick settlement of claims, loss assessment at individual level, reliable loss estimation, insurance product simple enough to be understood by farmer with lesser procedural formalities might work well.

WAYS FORWARD

The insurance sector, especially in agriculture, has huge potential but lack of right products and institutional arrangement is restricting active participation of farmers. More research may be done on product design, bundling the product (multiple choices), loss assessment, governance and institutional arrangements. Lot of research based information is available, and more will be coming. We can always make modification in the products as we get more information in future. The main opportunity is the huge farmer base which is largely uninsured despite the subsidy schemes being run by Government of India. This includes large chunk of non loanee farmers and even though, loanee farmers are by default covered in various schemes, still a big numbers of loanee farmers are still not covered under agricultural insurance. The biggest constraint is finding the right insurance product for the farmers. A lot of research is needed in this direction to work on the exact requirements of farmers within their area specific, crop specific requirements.

There is a strong need for awareness among farming families, particularly among marginal farmers. The private sector can play an important role in extension work for information dissemination about *PMFBY*. Banks and insurers too can play a key role in this case alongside government by appointing Agents/Business Correspondent (BC) who can motivate farmers, arrange insurance policy, payment of premium etc.

Damages by wild animals should be included because farmers are not cultivating many crops (pulses) in summer season due to concern about animal damages. It was also suggested that price risk be considered along with yield risks and that products such as insurance, credit, information be bundled otherwise they will be outcompeted by the informal insurance sector. If insurance and ad-hoc relief are run together, preference will be to avoid paying premiums if ad-hoc relief is offered. It was suggested these programs but implemented separately.

Large farmer base and low penetration of insurance is one of the greatest opportunities for agriculture insurance in India. And with the strong commitment of the present government as indicated by recently introduced *PMFBY*, removing the major constraints of previous crop insurance scheme is added advantage. Creating awareness is one of the key focused area in the scheme with non loanee famer as major focus .Introduction of insurance detail (Crop insurance) by government in its farmer portal indicate that a transparent regime is starting, to build up for all concern stake holder. Use of common service center as a non loanee window will increase the farmer penetration in India. New scheme have provision of making CCE's transparent involving all the stakeholder with use of technology for real time data transfer of CCE's so that manipulation can be minimized.

LIVESTOCK INSURANCE

Livestock is also an important sector of farm economy. Farmers' access to livestock insurance is still limited .Livestock insurance is tricky. Are there any suitable models in India or other developing countries? Damaged by wild animals is not eligible for coverage under scheme but there is substantial loss of crops due to Blue bull (Nilgai) in Middle and lower Gangetic plain). Regional Rural Banks also raised the issue of providing coverage to crop damage due to attacks by wild animals. Several cases of crop damage have been reported due to attacks on the farm land by elephants, which have destroyed the crops. Ministry must look into this issue.

It should be reconsidered because farmers are not cultivating many crops (Horticultural and *summer mung*) in summer season due to havoc of Blue bull. Coverage for animal diseases can lead to significant moral hazard. Livestock insurance is basically is life insurance. Some NGOs (like Dhan) are also engaged in health insurance of animal as well (including dairy and goats). There is already a program of Livestock insurance which covers only animals purchased through bank loan (but not all). There are some other provisions which are not farmers' friendly. This policy should be modified to have larger coverage. Now, animals are costly and poor farmers hesitate in purchasing good quality animals due to risk factor.

Claiming insurance at the time of death of the cattle's is biggest constraint for the dairy farmers, villagers are not well aware about the rules and regulation of the insurance procedure so it becomes difficult for them to claim insurance at right time.

Damage by wild animals is a big issue in north India. The impact on pulse cultivation is severe. If, insurance cover cannot be provided, then the government should come up with other measures to reduce this menace. There is negligible coverage of livestock farmers in Bihar. It is needed because farmers started keeping cross bred cow which requires investment of at least Rs 50 thousand and a poor farmer cannot bear burnt off loss of animal. If prevented sowing is insurable, why sterility of cow is not insurable? Livestock may be bundled with crop insurance. Maybe if some farmers take both their premium further ought to come down.

After looking into the experience of the present products, it looks better to have individual farm level insurance and indemnity paid on the basis of assessment of loss done at the farm by a team of five members. Two of whom shall be from the agency and two local officer from the agricultural department and one from the village Panchayat. If the loss is widespread across villages the team should report the loss to the higher authorities and indemnity be credited to the account of the farmer. Making it voluntary for participation is a preferred method.

That price risk of crops and livestock also need to be covered. The crucial issues are the correct identification of those affected (by calamity), quick assessment of the loss and speedy claim settlement. Correct identification involves identification of the actual cultivator, who has suffered the loss, and not the owner of land. This requires formal tenancy agreements and for this tenancy reforms are needed. The second is the modernization of land records, which needs to be speeded up by states. Right now only 12 states have managed to update land records to some extent. For quick assessment of the loss, modern technology such as drones, biometrics; LEO satellites (low earth orbit) may be explored. This is being done in some countries.

The third component is the speedy settlement of claims, which depends upon the first two - correct identification and quick loss assessment. Research has shown that farmers were largely unaware of the previous insurance programs in the country. Therefore, the task of disseminating information about PMFBY may need to be outsourced to private sector with clear targets, to achieve better results

INSURER:

In almost all countries with government support, premium rates are set by the government, and all the participating insurers have to follow these rates and can market the product wherever they want to, primarily competing with other insurers on qualitative parameters like level of service, quick settlement of claims, value added services provided etc. However, in India the crop insurance being mandatory for borrowing farmers there is a difficulty to involve all insurers everywhere. For this reason, the government decided to have a single insurer in any district to avoid duplication in coverage etc. The selection of insurers is based on the premium rates rather than qualitative parameters or both. Consequently we have seen in the recent past some insurers having bagged the district at a lower premium rate either had difficulty in finalizing the claims or avoided marketing the product in relatively high risk areas. The agriculture insurance is the largest insurance portfolio after motor and health so it can be easily tapped by the companies too.

This scheme will let farmers pay a very low premium to insure their crops. Farmers will have to pay a premium of only 2 per cent of the sum insured for ***Kharif*** crops, 1.5per cent for ***Rabi*** crops and 5per cent for horticulture and cash crops. Currently, farmers pay around as high as 15 per cent of the sum insured as premium under the existing National Agricultural Insurance scheme and the modified National Agricultural Insurance scheme. This scheme promises to provide prompt and easy settlement of claims through the use of technology like GPS, smart phones, remote sensing and drones to access actual crop damage. The claim amount will be directly transferred to the bank accounts of the farmers. The scheme also provides for coverage of post harvest losses and localized crop losses like hailstones. The other benefit of the scheme could be that banks will be willing to lend more to farmers as the risk of lending to them will reduce due to insurance**.**

Well, we can't blame the insurers. As long as the premium rates charged are reasonable and claims are assessed and paid transparently they are doing their job. However, the government has to make sure that the insurers are there to underwrite the product at a reasonable targeted loss ratio (say, 80 per cent) and carry a reasonable risk in their books. In the absence of a mechanism to monitor, many a insurer getting into government subsidized crop insurance to book reinsurance commissions (rather than underwriting the product), which is evident from very low level of risk retention in their books. The government has been talking about creating a *Technical Support Unit* (TSU) to take care of the technical side of the scheme as well as guiding and monitoring the insurers, but very little progress so far.

As of now, it is mandatory for the loanee farmers to go for crop insurance. However, the government's focus will be to bring more and more non-loanee farmers, which comprise merely 5 per cent of total farmers at present, under the scheme. In future, a total of 5,000 automated weather stations will be set up across the country under PPP model for the successful implementation of the scheme.

Honorable Prime Minister has set an ambitious target of bringing 50per cent of land under crop insurance in next three years from the current low levels of less than 10 percent. The new scheme offers heavy subsidy on premium (only 2per cent of the coverage amount) to make it more attractive to farmers. But the budget did not allocate enough resources to finance the subsidy. Rs. 5500 crore that the budget has provided will be too little if the scheme indeed becomes popular. With the present provision of Rs 5500 to cover even 50per cent of the farmers, per hectare allocation comes to Rs 564 only. Can we believe that this will be sufficient? Say only 20per cent farmers claim the indemnity and even then the sum payable becomes really paltry. I doubt with this allocation the protective umbrella can cover the large share of farmers. If you consider the allocation per hectares, large amount of the subsidies will go to the insurance agencies. The indemnity paid is much shortened and we are benefiting the insurance agencies in this process.

Another issue is the institutional arrangement. Since most of the farmers in India are small and marginal, this will increase transaction cost of the insurance industry. To reduce, the community insurance by promoting FPOs will be very helpful.

Indian insurance is bundled with credit as it is mandatory for loanee farmers. One key issue is to make sure farmers know that they insured and how the insurance work. With respect to marginal farmers we should insist on providing insurance as a risk management tool that can help them eventually expand their scale of operations and stop being marginal farmers or.... alternatively should we recognize that there is a marginal sector that should be targeted with beneficiaries of a safety net program being insurance one instrument around which the safety net strategy could be build on... for me this is still an open question

***CROP CUTTING EXPERMENT*:**

Indian agriculture is often termed as gamble of monsoon, and very rightly so, as there is high dependence on rainfed farming. The farming risks are set to increase due to the adverse impacts of climate change. Under these circumstance insurance, which is a proven risk transfer instrument, appears to be a logical strategy for providing food and livelihood security to rural population. But accuracy of historical crop yield data is a matter of great concern due wide variation in the yields for certain major crops. Performing and Monitoring of Crop cutting experiments in a limited time period to assess the loss is a major constraint from Insurer point of view. However, use of state of the art technologies like drone and satellite image which are deemed to be brought into practice in coming years will certainly make the process less cumbersome.

With respect to crop yield data is the historical data coming from cross cutting experiments available to anyone? If not it should as it could be an important sources of historical yield data that could be used to calibrate insurance products. In the case of India who centralizes that data?

There is system of conducting crop cutting experiments is all block of most of states, which are aggregated at district, state and national level. The crop yield data is centralized by Directorate of Economics and Statistics at India level and by respective by department of agriculture at state level. Yield data of horticultural crops are guess estimate. There is an urgent need to develop mechanism for estimation of yield of horticultural crops. For quick assessment of the loss, modern technology such as drones, LEO satellites (low earth orbit); Biometric may be explored. This is being done in some countries. The credibility of Crop Cutting Experiments (CCEs) should be improved using a digital confirmation and auditing process and the State should ensure the use of General Packet Radio Service (GPRS) enabled and camera-fitted mobile phones while conducting CCEs. Development of a web portal could make data on land records for all states available to financial institutions for speeding the insurance processing**.**

Yield estimation surveys (CCEs) have long been a contentious point for insurance industry. Not expecting any technology to replace manual CCEs in near future. The best bet is to improve the credibility of CCEs using digital proof and auditing process.

TECHNOLOGY:

Our Goal needs to enable all farmers to adopt risk mitigation measures in crop related activities using modern technology and e-governance mechanisms promoted by government and private agencies in India. On-account payment will be provided as a immediate relief to insured farmers in case of adverse mid- seasonal conditions during the crop season viz. floods, prolonged dry spells, severe drought etc., wherein expected yield during the season will likely to be less than 50 per cent of *Threshold Yield*. Likely losses are based on joint survey by insurance companies and state government official.

The new scheme envisages among other things that there will be use of technology. More technology and science will be encouraged. Smart phones will be used to capture and upload data of *Crop Cutting Experiments* to reduce the delays in claim payment to farmers. Remote sensing will also be used to reduce the number of *Crop Cutting Experiments*.

Making use of technology mandatory will also improve operational efficiency and will be beneficial to both - the farmers and the insurers, experts and insurance players say. Additionally, since farmer's premium will be down, the uptake of policies would be high. Moreover making the new crop insurance scheme mandatory for states will also mean there will be increase in the list of policy takers. Adding catastrophic events also to this cover to protect farmers against crop loss/damage due to incidents like cyclone would be beneficial to all stake holders yet again.

Though PMFBY is concerned the government intends to use technology in a big way, but am afraid the clarity is missing. Technology usage will be critical both for design and usage by farmers and India do possess strong IT capacity. Measures can be taken to improve weather insurance products including involvement of international experts, using satellite imagery with innovative computer models, and creation and usage of specialized indices like Normalized Difference Vegetation Index. Government is planning to use drone and remote sensing to assess the losses to crop due to various eventualities. Several academic institutions are piloting how the loss will be assed and claims will be quickly settled. Government is very pro-active in promoting the scheme and trying to reach most of the farmers. Government is leaving the door open to pilot new technologies to asses' crop losses. What will be crucial is the accuracy of the technologies in predicting losses to minimize basis risk!

A holistic marketing programme is required which highlights the aspects of new crop insurance scheme and educates the farmers in time. The best use of technology can be in terms of using mobile phone. India having the highest no. of subscribers of Smartphone's is the biggest strength in technology we have right now. The farmers can be taught all the aspects of crop insurance through this medium.

Technology can also be used to send SMS-based weather data to progressive farmers and farming groups, to provide training through videos or SMS communication about insurance, and to promote index-based insurance as part of a wider package of services, grafted into existing, efficient delivery channels with private sector engagement and with access to international risk transfer markets. The best way for creating awareness is through videos. Regular farmer meetings should be conducted and farmers are shown videos showing the impact of crop insurance in case of crop failure. Also technology like remote sensing can be used to detect losses as well as better weather prediction. Farmers could be sent SMSs about this scheme and field's officers can introduce these schemes to farmers

The scheme doesn't elaborate as to how the technology shall be used and within which the time-frame. Privately most of the government based experts on technology admit it would take many years before yield estimation / loss assessment through use of satellite imagery / drones become reality. For example NRSC believes the village / cluster of village level yield estimation through satellite imagery would take many years

For successful implementation of the scheme the supporting infrastructure such as weather stations, drones hovering the regions, satellites monitoring the areas will be must. Along with this, the other technology options like remote sensing, ground verification drone based data capturing can be used to provide the farmer the basic field level information about his farm and how his farm stands in current insurance scenario.

One critical aspect in which technologies can be very helpful is on communicating loanee farmers that they are insured and explaining how the insurance work. Apparently as crop insurance is mandatory with government loans some/many farmers don't even know that they are insured and hence they don't behave and don't make production choices as if they were.

Part of the new insurance scheme was the promotion of drones to provide this information to insurance companies. What is the extent of that type of technology use already?

A holistic marketing programme is required which highlights the aspects of new crop insurance scheme and educates the farmers in time. The best use of technology can be in terms of using mobile phone. India having the highest no. of subscribers of smart phones is the biggest strength in technology we have right now. The farmers can be taught all the aspects of crop insurance through this medium. Mobile Technology for information dissemination and money transfer both for premium collection and compensation payments. Development of special application that is suited for mobile/off network operations and using FOs as partners.

Along with this, the other technology options like remote sensing, ground verification drone based data capturing can be used to provide the farmer the basic field level information about his farm and how his farm stands in current insurance scenario. *Drones* are more formally known as unmanned aerial vehicles (UAV). Essentially, a *drone* is a flying robot. The aircraft may be remotely controlled or can fly autonomously through software-controlled flight plans in their embedded systems working in conjunction with GPS. And application of biometrics to assess crop health/losses- Is it possible from pictures to measure the height, density, and certain features of a crop that can tell us with high confidence about the health and predicted yield of the crop? To develop such technology could be crucial to quickly assess losses at plot level at low cost, if possible

HIGHER PROPORTION OF SMALL AND MARGINAL FARMERS:

The high proportion of small farms is perhaps the greatest challenge we have. The cafeteria of crops in one holding makes it further complex, especially in states like Kerala where it is very common. This is one of the main constraints in implementation (high transaction cost of the industry). It can be minimized through community based insurance. There are some models on community insurance which may be linked in the present scheme. FPOs should also be encouraged to go for large scale insurance with one policy. Community insurance is a good model to reduce transaction cost, but how to provide a legal base in case of disagreement in the issue?

COLLABORATIVE COMMUNITY MODELS

We can use dynamic Models for Revenue Insurance under an overall ambit of collaborative community models wherein FOs (Including FPOs) can provide an ability to create SPVs with shared risk liability. Revenue Insurance models theoretically score from the perspective of providing multi-peril crop insurance along with price protection. We can explore avenues for staggering the indemnities. Currently, indemnities are paid to farmers based on gross revenue shortfalls instead of yield or price shortfalls only. One can look at a model wherein the premium payments are shared between the farming community and the credit provider and each is protected for a specific component of the indemnity payout. For instance, the FO/FPO can be covered against crop failure, while the credit institution can protect itself against price fluctuations. Farmer Organization (FO) led Special Purpose Vehicle to provide Agricultural Extension Services using PPP which inter alia include implementation of PMFBY through Farmer Groups; Related training and certification to FOs who in turn can train large number of small and marginal farmers. FOs can be trained to become central repository of Agricultural Insurance service being offered by Government and private sector – develop specialized applications for the purpose.

INDIVIDUAL INSURANCE

We are still hovering around the design that was traditional area based insurance. We need to think about individual insurance as done for the Four Wheelers. In India we have number of four wheelers far more than the farmers. A car gets involved in an accident and a claim is filed by the owner, the inspection is carried out fast and indemnity paid within the stipulated time. On the other hand, if crop fails the time taken to pay the indemnity is anywhere between six months to 18 months. Why can't we think of individual insurance for the farmers in the same way as that of Car insurance? Insurance and adhoc reliefs, which mostly benefits big farmers, cannot go together. Admittedly, the two are not comparable. Transactions cost for small farmers with multiple crops, the assessment of loss is difficult. The situation with cars is different.

Community-Based Insurance with farmer producer organizations (FPOs) needs to be encouraged to reduce the high transaction costs in the existing model. FPOs, through Private Public Partnerships (PPP) can promote mobile technology use for money transfer both for premium collection and compensation payments. Related training and certification of FOs who in turn can train large number of small and marginal farmers can also be made part of the system. A shift from Social Crop Insurance Program towards Market based crop insurance program should also be explored with time.

Another solution for scaling up is similar to program in Africa where farmers were allowed to pay out of their wages. The insurance helped them earn more income from farming. As their income increased, the farmers started paying a premium in cash. Banks should also maintain segregated records for the loans disbursed crop-wise and area-wise. Normally subsistent farming families, in due course graduate to profitable farming; and those who are already in profitable farming move to commercial farming. Insurance aimed at providing social protection to poor farmers under ***KILMOSAMA*** is a good example, where farmers graduated from wage premium to cash premium. Under ***KILMOSAMA*** the poor farmers, who could not pay insurance premium in Africa were allowed to pay out of their wages. The insurance helped them earn more income from farming. As their income increased, the farmers started premium in cash.

AWARENESS DRIVE:

Awareness is the most important ingredients to increase the coverage of ***PMFBY***. When farmers are aware of the insurance benefit they will surely ask for it. Bringing in non-loanee farmers to voluntarily adopt insurance will be a great challenge! If farmers are given for free (Cent per cent subsidized) insurance for one hectare or for a very basic coverage that could help farmers learn by experience and become more willing to adopt insurance on a voluntary basis, maybe....?

First of all insurance is seen as money back policy, one has to understand it only pays when financial loss are suffered and premium money is not a waste if in that year claim does not occurs as it covers the uncertainty . Awareness is not only the responsibility of government but it need collaborated effort by insurer, local government official, banks, primary agriculture cooperative society's etc to create the awareness among the farmer community, understanding basics of insurance will surely help in deep penetration and changing the mentality of our people. These include (i) awareness & insurance education (ii) creating convenience for non borrowing farmers to avail insurance (iii) convenient way of proving insurable interest to enroll (iv) state's budgets to provide and release monies as required (v) ease and quality of yield estimation service (vi) enabling environment from the government for insurers

The scheme now covers most of the crops and some of the crop may have very tiny area. The loss may not be accessed through remote sensing. Even drone may not assess the loss. Another problem may be political interference and pressure to make compensation. Flood, inundation, drought and dry spell should be defined precisely; as for example - dry spell (number of days continuous non rainy days), Flood and inundation (number of days of water stagnation and depth of water and drought). Prevented sowing and post-harvest losses are included under PMFBY. It is a good step but there should be reliable, honest and competent mechanism for identification of prevented sowing and post harvest losses. In PMFBY, production risk is being addressed but farmers are not getting remunerative/ procurement price in Bihar. It should also be considered because even high level of crop production may not make agriculture financially viable.

To create awareness among farming families, particularly among marginal farmers; arrangement have to be appoint agents like other insurance who can motivate farmers, arrange insurance policy, payment of premium etc. because many non - loanee farmers are unaware of crop insurance and do not know/understand the process. Insurers have tendency to harvest just the low hanging fruits (borrowing farmers for who it's mandatory), leaving out the non-borrowing where they need to work hard. If the government has to achieve 50per cent insurance target, it has to go after non borrowing farmers in a big way. Insurers should be made to target non-borrowing farmers while the government should run a dedicated awareness campaign. It's also equally important to explain how insurance operates (as often the expectation from crop insurance is very high!).

A majority of the new farms have to come from non-borrowing farmers. It's not easy to enroll the non borrowings farmers and the biggest challenge is lack of proper land records as a proof of insurable interest. With tendencies (seen in the past) of adverse selection & moral hazard, insurers may find handling non borrowing farmers challenging. Insurers would insist on land proof as well as crop sown proof. This could be a hurdle for genuine non borrowing farmers unless addressed in a convenient and easy way. Bringing in non-loanee farmers to voluntarily adopt insurance will be a great challenge! If farmers are given for free (100 per cent subsidized) insurance for one hectare or for a very basic coverage that could help farmers learn by experience and become more willing to adopt insurance on a voluntary basis, maybe….

Another big challenge is: What about given access to insurance to farmers who rent in land? Maintaining parallel 'political' programs (like disaster relief etc.) and more scientific programs (insurance etc) would be difficult in the long run, as well as un-desirable. If the government has the ***Political Will*** to streamline the various programs, will find enough budgets and funds to finance PMFBY. Also many a farmer often believes the political patronage like (ad-hoc relief, loan waiver etc.) are relatively freely obtainable compared crop insurance, for which they have to pay some amount of premium, though small. Poor penetration of crops insurance can be despite high subsidies equated to the existence of ad-hoc relief and some un-structured programs. In other words crop insurance is made to compete with such unscientific and unstructured programs.

PRIVATE CROP INSURANCE:

Private crop insurance can be observed worldwide, even though it is not highly developed. Private crop insurance has tended to cover more specific risks and not cover management-related risks. These insurance policies offered must fit needs of farmers and be beneficial--otherwise they would not exist. This is not necessarily the case with government sponsored crop insurance. Private insurance works in a wide range of countries for a wide range of agricultural activities. Insurance programs vary from tropical plantation crops in Latin America to tree crops in the USA.

Government crop insurance has proved to be a failure worldwide, but India seems to have ignored both its own failure and the failure of other countries. The NAIS will not fix the ills of Indian agriculture, nor will any other grand insurance scheme planned by the authorities. Private crop insurance may or may not develop if all government crop insurance is abolished. Abandoning insurance schemes does not mean abandoning farmers. Farmers could be given an income guarantee not based on yield, price, or area planted. Even now an income insurance scheme is being considered in India. Investment in agricultural infrastructure/research would be more equitable as opposed to subsidies to crop insurance and may yield more long-term benefits. Farmers deserve the chance to farm on their own. They know the weather better than anyone—it is their greatest foe and their greatest friend. The government should stop trying to play God and help farmers help themselves. The government has admitted that it lacks the resources to administer a proper insurance scheme at the individual level. For various reasons a second-rate scheme is deemed as necessary. A better option would be an income guarantee not based upon yield, crop grown, or farm size. Considering the various subsidies that are given to farmers through various means--fertilizers, seed, price supports, etc.--an income guarantee should not be an unfeasible option. Farmers need to be able to respond to market forces and develop their own risk-management tools.

MOVING FORWARD:

Globally, the value of crop insurance, private or subsidized, is much debated by academics and policy makers. The concept of index-based contracts for natural disasters in place of crop insurance has been recently introduced.

Farmers would purchase a contract and be compensated when a certain event or natural disaster occurs. Rainfall contracts are one example. Rain is relatively simple to monitor and the history of rainfall in most areas is well known. Farmers would be compensated if the rainfall in an area would go below a set level, with varying levels of payment depending upon the level of rainfall. The faults of this approach lie in its similarity to the area approach. However, the benefits are significant, including reduction of moral hazard, adverse selection, and transaction costs. This alternate model could be adopted as an improvement over the PMFBY but would still deter the private sector from entry into crop insurance. PMFBY have to be modified as per state specific - according to states needs Farmers could be given an income guarantee not based on yield, price, or area planted. Even now an income insurance scheme is being considered in India. Investment in agricultural infrastructure/research would be more equitable as opposed to subsidies to crop insurance and may yield more long-term benefits. Farmers deserve the chance to farm on their own. They know the weather better than anyone—it is their greatest foe and their greatest friend. The government should stop trying to play God and help farmers help themselves. Apparently, the present scenario called for a comprehensive policy support to revitalize agriculture in the face of increasing agrarian distress.

Annex I

DO'S AND DONT'S FOR BANKS

Lenders have an important role in the success of recently launched crop loan scheme *Pradhan Mantri Fasal Bima Yojana* (PMFBY). Banks have a vital role to play in increasing the coverage under the scheme," RBI said in a notification addressed to bank chiefs. It said bank branches in the 45 districts, where the scheme is being piloted, will have to ensure 100 per cent coverage of loanee farmers. The scheme is compulsory for loanee farmers availing Seasonal Agricultural Operational (SAO) Loans or Kisan Credit Card (KCC). As the scheme is voluntary for non-loanee farmers, banks have to focus on supporting peasants, who have opened account under the *Jan Dhan scheme*, in getting crop insurance, including guiding them through the entire process,. The RBI also flagged lack of compilation of land details and crop sown details of the loanee farmers availing crop loan by the banks as a key issue. Absence of such details has resulted in non-availability of requisite data on real time basis for monitoring and planning purposes. The regulator said an integrated IT platform with data, which can be accessed by all financial institutions, can help in providing real time data. It proposed to initiate development of an integrated platform on a pilot basis. Approved by the Centre in January, PMFBY would replace the existing National Agricultural Insurance Scheme (NAIS) and Modified National Agricultural Insurance Scheme (MNAIS) from ***Kharif*** season (summer crops) of 2016.

- Banks will get 2.5 per cent in NAIS and 4 per cent in WBCIS of the total premium collected from farmers.
- Banks portfolio in farmers' lending will be secured, especially in the case of Small and Marginal Farmers
- Banks to maintain segregated record for the loan disbursed crop wise and area wise.
- Banks should not include consumption loan amount and insurance premium amount as part of sum insured. Only crop loans disbursed for notifies crops are insurable.
- In case of revolving credit to the farmers (***Kharif*** and ***Rabi*** limits), duplication of coverage of crops should be avoided.
- If farmer opts for higher sum insured, Proposal form from the farmer should be obtained
- PMFBY is a new construct on the old existing schemes and will involve selected insurance companies. The budgetary support will come from both central and state governments. The scheme has both compulsory and voluntary sectors and hence may fetch premium from the farmers and that will go to the participating insurance agencies. Our experience of the Crop Insurance Scheme hitherto has clearly shown that the indemnity payment exceeds the premium collected, and hence the budgetary resources have to meet the shortfall. This will vary over years and hence it will be better to get some estimates on the basis of the probability of loss and the expected values across crops and regions. In the current budget the Finance Minister has allocated Rs 5500 crores to support the PMFBY, which will have additional support from the state budgetary resources too.

Annex II

SWOT Analysis of NAIS

STRENGTHS

1 Lower premium
2. Higher payout
3. Cover more perils
4. Easy-to-design if historical yield data up to 10 years is available

WEAKNESS

1 Lack of objectivity
2.Lack of transparency
3. High operating (CCE) cost
4. Delay in receiving CCE data
5.Quality losses are beyond consideration

OPPORTUNITY

1. High awareness among farmers
2. Farmers friendly scheme

THREAT

1. Farmers may align towards weather insurance if remote sensing technologies introduced; because of objectivity
2. Loan waiver schemes of government.

Annex III

SWOT Analysis of WBCIS

STRENGTHS

1. High objectivity
2. High transparency
3. Less operating (No CCE) cost
4. Hassle free claim settlement procedure
5. Quality losses to some extent gets reflected through weather index

WEAKNESS

1.Higher premium
2. Cover only weather related perils
3 Technical challenges in designing weather indices and also correlating weather indices with yield losses.
4. Needs up to 25 years historical weather data
5. Distance from farm to weather stations, discrepancies may arise
6.High establishment cost
7. Lower and phase wise payout
8. Difficult to comprehend for a typical Indian farmer

OPPORTUNITY

1. For horticultural crops yield parameters can't be considered for claim settlement, as continuous harvest
2. Shift in climatic and weather patterns

THREAT

1. Insufficient awareness and understanding
2. Loan waiver schemes of government.

OUR PUBLICATIONS

BOOKS AND MONOGRAPHS

1.Gursharan Singh Kainth, ***Managing Rural Finance in India****, Concept Publishing Company, New Delhi(ISBN 978818069572) released by Dr Montek Singh Ahluwalia, Deputy Chairman, Planning Commission,2010*

2. Damanpreet Kaur and Gursharan Singh Kainth, 2011 ***Mobile Banking: A Boon for Unbanked****, Lambert Academic Publishing Germany (ISBN* 9783845436234*)*

3. Gursharan Singh Kainth, ***Next Generation Bio fuels-The Key to India's Sustainable Energy Needs,*** *Lambert, Academic Publishing Germany (ISBN* 9783845470061*)*

4. Gursharan Singh Kainth, 2011 ***Sustainable Development of Forest*****:** ***Some Issues****; Lambert, Academic Publishing Germany (ISBN* 9783846514399*)*

5. Gursharan Singh Kainth and Mandeep Kaur: 2011 ***Adoption of Technology in Teaching of Language: A Critical Assessment of Punjabi (Mother Tongue)****; Lambert Academic Publishing Germany (ISBN* 9783845420141*)*

6. Gursharan Singh Kainth, 2011 ***Aadhaar India: Brand for a Billion****; Lambert Academic Publishing Germany (ISBN* 9783845428031*)*

7. Gursharan Singh Kainth, 2011 ***Climate Change, Sustainable Development and India: Need for New Economic Thought,*** *Lambert Academic Publishing Germany (ISBN* 9783847317364)

8. Jyoti Soi and Gursharan Singh Kainth, 2013 ***Disclosure Practices in Indian Banking Sector: A Comparative Study,*** *Lambert Academic Publishing Germany (ISBN* 9783659219931)

9. Gurinder Kaur and Gursharan Singh Kainth, 2013 ***Job Satisfaction among College Teachers****, Lambert Academic Publishing Germany (ISBN* 9783659326837)

10. Gursharan Singh Kainth, 2014: ***Right to Education: Pathway Ahead****, Bharti Publication, New Delhi (ISBN: 9789381212578)*

RESEARCH PROJECTS

1.Gursharan Singh Kainth, 2012 ***Diagnostic Analysis of Financial Inclusion in Rural Punjab,*** *sponsored by National bank for Agricultural and Rural Development; Punjab Regional Office, Chandigarh*

2. Gursharan Singh Kainth 2013 ***Diagnostic Analysis of Mid Day Meal Scheme in Rural Punjab****, Indian Council of Social Sciences Research, New Delhi under ICSSR Senior Fellowship scheme.*

3. G S Kainth, ***2013 Diagnostic Analysis of Elementary Education in Rural Punjab****; Planning Commission, Government of India, New Delhi.*

4. G S Kainth, 2014 ***Adoption of Right to Education in Private Schools: Status, Constraints and Policy Implementation****, National Council of Education Research and Technology (NCERT), New Delhi*

SELF SPONSORED RESEARCH PROJECT

1. *Gursharan Singh Kainth and Rajinder Singh Bawa, 2012:* ***Productivity of Indian Agriculture: Growth and Determinants***

2. Gursharan Singh Kainth and Rajinder Singh Bawa, 2012: ***Are Disparities in Indian Agriculture Growing: Status, Constraints and Determinants.***

3. Gursharan Singh Kainth, 2012: ***Sustainable Agriculture and Food Sustainability: The Way Ahead,*** *www. eurasiareview.com, July 2013*

4. Rajinder Singh Bawa and Gursharan Singh Kainth, 2013: ***Can Punjab Mis FDI in Multi-Brand Retail.***

5. Gursharan Singh Kainth, 2012: ***Indian Seed Industry: Needs Policy Incentives***

6. Gursharan Singh Kainth, 2013: ***Anganwadi Centres in Rural Punjab: Status, Constraints and Policy Implications.***

7. Rajinder Singh Bawa, and Gursharan Singh Kainth, 2016: ***Reconfiguration of Indian Higher Education****, in hand.*

8. Gursharan Singh Kainth, Rajinder Singh Bawa and Mrs Jaspreet Kaur, ***Recycling of Waste Water and Reuse System,*** *2016(In hand)*

POLICY BRIEFS

1. Continuous and Comprehensive Evaluation A Critical Analysis

2. India's Education Sector: Moving toward a Digital Future

3. Can Right To Education a Reality

4. Universal Primary Education: Is It a Joke

5. MPLAD Scheme Needs Amendments

6. Elementary Educations: Needs Renewed Push

7. Punjab Drug Epidemic: Dark Days Ahead

8. Healthy Soils for Healthy Life

9. Better Sanitation for Batter life: Some R & D Issues

10. Technology in Education: Some Issues

SEMINARS:

IDSAsr has organized since its inception following three national/international seminars, that is, since July 2009.

1. *1st National Seminar on* ***Food Security and Sustainability in India*** during November 2009

2. *2nd National Seminar on* ***Management of Natural Resources and Environment in India*** during October 2010

3. 3rd International seminar on ***Water Security and Climate Change: Challenges and Strategies*** during November 2011

4*. 4th IDSAsr International seminar on* ***The Water Energy and Food Security*** *during February, 2013.*

5. 5th IDSAsr International seminar on ***Right to Education: Roadmap Ahead during*** *March, 2013.*

6. 6th IDSAsr International seminar organized on ***Energy for Sustainable Development in Asia Pacific*** *with effect from November29 to December 01, 2013*

7. 7th IDSAsr National seminar will be organized on ***Recycling of Waste Water and Reuse System slated for the month of*** *November, 2016.*