New Dawn Risk

Technology brings new opportunities for India's crop insurance scheme

India's crop insurance programme embraces modern techniques and international (re)insurers

November 2020

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1. INTRODUCTION: THE ISSUES AND THE OPPORTUNITIES

India has had a government-sponsored agricultural insurance programme for over thirty-five years. Designed to make insurance payments to small farmers whose crops have failed, it began life as a world-leading project. However, over the years, the programme has come in for criticism around its structure, timeliness of payments and the inefficiency of its administration.

The latest incarnation of the scheme (PMFBY) has tried to address this. Whilst it undoubtedly has improved, India's government and the scheme operators need to continue to draw lessons from countries where crop insurance schemes have been hugely successful, such as the United States, China and Kenya.

In China and in US it has proved possible to rapidly expand similar schemes in a short time period through efficient easy-to-access administration, and government willingness to mandate involvement by farmers. India's scheme, which has been stalled in size for many years, could certainly also see new insurers entering the arena if the government were willing to support it by subsidising costs for insurers, who have previously borne heavy administrative and operating costs.

Currently the Indian crop insurance scheme is focused on digitisation, which will both help make it easier to access for users, but should also help reduce operating costs, with weather models allowing claims management to be done much more effectively, and without monitoring on the ground in all areas.

The introduction of a three-year contract for insurers is a step forward, but we wait to see whether the new standards on timeliness and monitoring are strictly adhered to by the states involved. This is critical to ensuring the PMFBY remains a viable scheme for foreign reinsurers to participate in. Reinsurers have legitimate concerns about bureaucracy, lack of transparency and potential corruption in the operation of the scheme, and there is work to be done to change this perception.

"With the advent of new concepts in agriculture, the scope for crop / agriculture insurance in India is vast."

Ashok Yadav,
Agricultural Insurance Company of India

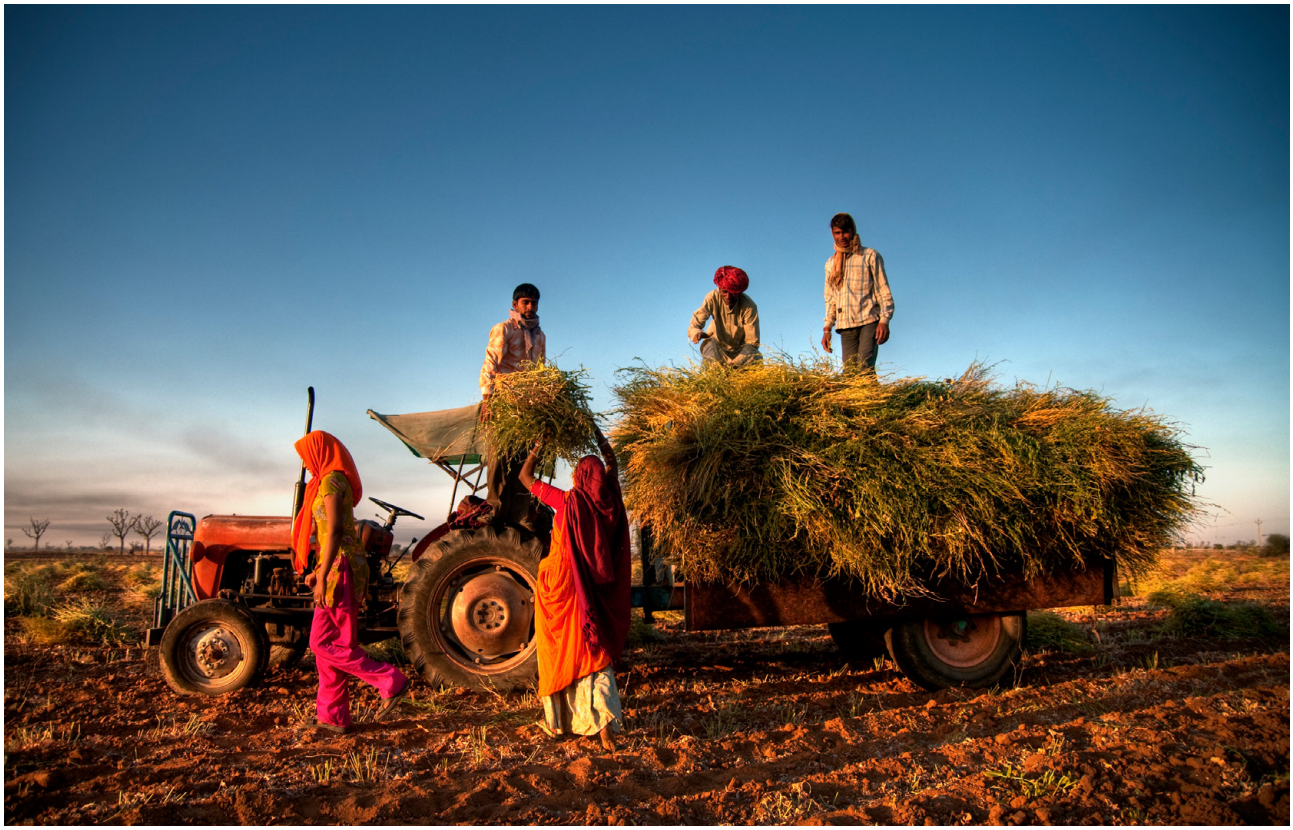
Despite the current challenges, however, the silver lining lies in the increased use of satellites and drone imagery technology which the government is promoting. By adopting high quality mobile apps to carry out CCE's, remote sensing methodologies to assess crops and low-lying satellites (LEOs), India has taken positive steps towards increasing efficiency and reducing costs of administration, as the Kenyan model has shown.

We hope that, with such positive news, this guide will provide international (re)insurers who might consider participating in a refreshed scheme with the detail that they need to proceed to the next step.

2. HISTORICAL OVERVIEW

India's variable and sometimes extreme climate means that it is particularly exposed to the impact of crop failure. India suffers from extremes of rainfall (both flood and drought), and in as many as one year in five the nation experiences extreme drought or flooding.

To protect the livelihoods of India's many subsistence farmers, there has been a long-term concern to develop a sustainable crop insurance programme that is accessible to all, including the very poor. The first papers on the subject were published in 1915 but debate continued until 1974, when the first pilot scheme was introduced.



THE COMPREHENSIVE CROP INSURANCE SCHEME

In 1985 the government of India launched the first nationwide crop insurance scheme: the Comprehensive Crop Insurance Scheme, which ran until 1999.
The CCIS was operated by the General Insurance Corporation (GIC), with the assistance of India's regional state governments.

Because the plots of land involved were (and remain) so small, and because the landscape and weather vary so widely, the CCIS relied on creating groupings of farms, deemed to have similar conditions and topography. These 'defined areas' could be a district, a block, or any other geographically similar grouping; and the coverage limit was set at 60%, 80% or 90% depending on whether it was deemed a high, medium or low risk area. Claims were based on the expected yield for the block, which was ascertained by taking samples of crops from an area – a practice known as Crop Cutting Experiments or CCEs.

In addition, as much of India has two distinct growing seasons: the wet (monsoon or kharif) season and the dry (rabi) season; the scheme has always been run in two halves, with premiums paid for kharif crops and rabi crops, and loss rates calculated separately.

The scheme, as with all of it successors, was primarily built around 'loanee' farmers. These are farmers who take out annual crop loans – the crop insurance is included in a package with the crop loan and provides a convenient way to facilitate payments. Claims were paid to the credit institutions that the farmer had borrowed from and credited against the farmer's outstanding crop loan, with any left-over amount paid out to the farmer. So-called 'non-loanee' farmers could also buy into the scheme, but it proved challenging to attract them into the system, and this remains true today.

NAIS REPLACES CCIS

By 1999, the CCIS was insuring 76.3m farmers, with a premium value of 4bn rupees (around $0.5bn USD), but in 1999, the scheme was expanded and replaced by the National Agricultural Insurance Scheme. The new scheme covered a much wider range of crops, including some horticultural crops, (eg coriander, cumin, ginger and chilli pepper). The scheme also moved to a dual-assessment method, designed to allow it to respond to localised catastrophes, such as landslides and hailstorms. The 'defined area' approach remained in place, but it was supplemented by an ability to make individual claims when a specific local catastrophe occurred – implemented initially in limited areas and on an experimental basis.

The new scheme set out to implement a more actuarial approach to sharing the cost of claims, varied by type of crop, but the excess, as whatever level it kicked in, was shared 50:50 by the government and the state involved.

NAIS grew rapidly and by 2005-6, was insuring almost 79m farmers. During this period, the Agriculture Insurance Company of India Limited (AIC) was formed to take over the implementation of NAIS from GIC.

MOVING ON FROM NAIS

The NAIS scheme ultimately began to come under fire for the low 60% 'high-risk' indemnity level, its inability to deliver the scheme to non-loanee farmers, and the inflexibility of the large 'defined areas', which did not always reflect the yield experience of individual farmers. Delays in payments and in reporting results from Crop Cutting Experiments (CCEs) were also a problem – significantly holding up claims in many cases.

At the same time NAIS began to draw more and more fire for the inefficiency of its payment regime, and when a new Government was elected in 2014, it was decided to retire NAIS.

> "The main challenge is consistency. The scheme has changed drastically in a very short space of time. Reinsurers believe there is ample opportunity but only if they decide to commit to this product for the longer term and take a long-term view despite the changes."
>
> Ashok Yadav,
> Agricultural Insurance Company of India

THE LAUNCH OF PMFBY

The NAIS scheme was replaced by the PMFBY (Pradhan Mantri Fasal Bima Yojana): introduced with the intention of providing better coverage to farmers and improving claims efficiency. The government wanted its new scheme to expand and has begun addressing the many structural and organisational challenges that exist.

PMFBY GOES DIGITAL

In July 2020 it was written into the PMFBY operational manual that insurance companies, credit unions and the states involved must all invest in digitizing the scheme. This includes digitizing customer and claims data, as well as the installation of digital weather stations to allow for weather-based claims triggers and piloting the use of satellite photography and drone-based CCE assessments.

The 'basic cover' that is at the centre of the scheme remains yield-based, with Crop Cutting Experiments (CCE) still the primary trigger for claims, although this is now supplemented by a range of optional 'add-on' covers. In some areas, the scheme has also adopted weather-based triggers. This has occurred primarily in areas where there is good crop/rainfall data, but the AIC has ambitions to expand this further, as the costs of administration are much lower. The prospect of an efficient digitised system, using satellite and weather technology as opposed to manual Crop Cutting Experiments, has made PMFBY increasingly attractive to insurance companies, who are now encouraged to tender to implement state-by-state schemes on a three-year basis. The multi-year contract now offered to insurers also helps to make this a much more viable option for insurers to invest in.'

The remainder of this document gives an overview of the latest (July 2020) crop insurance scheme, considers how international reinsurers can participate, and examines the claims ratios of the states involved.

3. OVERVIEW OF THE CURRENT CROP INSURANCE SCHEME (PMFBY)

The current scheme, PMFBY, retains many of the principles of NAIS. Each state operates its own scheme, but within central guidelines, which give the states some options to vary the scheme to suit their own region and budget.

Small farmers (loanee and non-loanee) still access insurance through local banks and credit providers, although their information is now held and shared digitally with insurers through an online portal (called NCIP), which gives all parties access to scheme information, including crop yields and claims data.

RISKS COVERED

The crops covered under the current scheme have widened and include most food crops (cereals, millets, rice and pulses), oilseed crops and many annual commercial and horticultural crops (such as chilli, ginger and coriander).

The basic scheme still covers the risk of loss of yield to standing crops; and is still calculated on a 'defined-area' based approach, meaning that individual farms are grouped together into larger areas that share similar topography, and a claim is based on average yield for that area. However, the new scheme asks states to replace assessment by Crop Cutting Experiments with assessment via satellite imagery, drone footage and weather data. States that participate in the scheme have been mandated to pilot new technologies that can improve yield estimations, and help all sides move towards the ending of the laborious CCE-based claims system.

Individual states may now also opt to expand the cover for their scheme in order to add on any or all of the following:

- Weather-prevented planting or germination
- Post-harvest losses (covering a maximum of two weeks when the crop is cut, but remains stored outside)
- Localised calamities (fire, flood or weather affecting individual farmers)
- Crop loss due to attack by wild animals

For claims arising out of crop damage due to localized risks and post-harvest losses, assessment of the crop damage is made on an individual farm basis.

COVER DETAILS AND PROCEDURES

All farmers growing the crops included in the scheme are eligible for cover, but they must have documentation to prove they have documented ownership of the crop in question (some farmers may not own the land they work, but still have rights to the crops from it).

The premium charged to the farmers by the state-selected insurance company is based on an agreed rate, on a sliding scale depending on the type of crops that they grow.

Most farmers do not pay more than 2% of the total premium themselves, with the rest being subsidized on a 50:50 split by the government and the farmer's home state.

Farmers who participate in the various government-sanctioned agricultural loan programmes (loanee farmers), are automatically enrolled into the scheme, but do have the right to a written opt-out. Banks approving loans in a notified area must collect premia for the scheme unless the individual farmer has chosen to opt out of the scheme.

In 2018, as part of the digitisation programme, the Government of India designed and developed an online gateway to the system, the National Crop Insurance Portal (www.pmfby.gov.in). This has brought in better transparency, improved administration and coordination amongst stakeholders (farmers, states, insurers and banks) as well as ensuring real-time dissemination of information. It is now a condition of the scheme that insurers who participate must be willing to use new technology (with an emphasis on smartphones), and must work with the NCIP platform and the newly developed CCE-Agri App.

Implementing states and insurance companies are required during each crop season to digitise and upload basic information (eg notified areas, crops, sum insured, government subsidy, and premium to be paid by farmers) on the portal within a prescribed timeline.

IMPROVING TIMELINESS

Timing is a critical area of improvement in the new scheme. Previously delays in recording data, and extensions to cut-off deadlines proved a significant barrier for insurers and reinsurers to engage with the scheme (as well as for the farmers, who faced long waits to receive compensation for lost crops).

Under the updated scheme guidelines States must commit to conduct a set number of CCEs and upload data on the NCIP to enable auto-calculation of claims within two months of the CCE date.

States are also now required to pay insurance companies within two months of the claim date.

Selection of insurance companies

Insurers cannot tender for a PMFBY contract until they have been centrally approved and put on the panel by DAC&FW (India's Department of Agriculture, Cooperation and Farmers' Welfare). The panel selectors have stated that they want to work with insurers with existing agricultural experience as well as proven infrastructure, financial strength and operational capabilities. Insurers on the panel cannot outsource their 'core' services, including underwriting and claims.

Once an insurance company has been empanelled, it can bid to be selected by a state to implement the PMFBY in a particular region. Each insurer is required to bid for contracts across a range of states, including four in the North East Region, two 'Hill States' (areas in the northern Himalayan border region) and two Union Territories (directly administered regions, such as the Andaman Islands).

CLUSTERING OF DISTRICTS

In order to share and diversify risk, state governments are required to group their districts so that each group contains a mix of districts with different risk profiles.

Very high-risk districts may be divided into clusters, combining few blocks as a cluster. Prior to the bid invitation, details on the cluster formation may also be made available to the insurance companies

THE TENDERING PROCESS IN THE STATES AND HOW COVERED AREAS/FARMS ARE DIVIDED

The new system requires the states who run the PMFBY to run a tendering process for insurers every three years. The government-set tender document is available on the NCIP portal. Each state's crop insurance committee is required to finalise local terms and conditions (eg notified crops, threshold yield, sum insured and indemnity level for each crop, and desired risk coverages), and then issue the bid notice.

Empanelled insurers are eligible to bid for state tenders via an e-tendering process and the chosen insurer should be issued with a work order within two weeks of the tender date.

TENDERS: THE INSURER VIEWPOINT

"We have specialist remote sensing, crop underwriting and marketing teams for active participation in tenders. We prepare the historical agricultural drought report based on remote sensing of rainfall along with ground information."

"We participate in tenders based on current season weather forecasts, agricultural drought and historical crop loss reports. in the last three years we have kept our exposure balanced and have not targeted much growth but smoother services."

V. Rajaraman,
Executive Vice President, Iffco-Tokio

States are required to provide a set range of information to bidding insurers, including details on the areas to be covered, historic crop yield and claims data and information about automatic weather stations and rain gauges in the region, as well as which districts are rain-fed and which are irrigated.

State governments assess the bids and may at this stage drop particular crops from the tender if the actuarial rates offered are very high. Normally if rates are above 30% the central government will not provide subsidies, thereby encouraging risk management amongst farmers, such as better crop selection). All participating insurance companies must provide loss cost calculations on the NCIP, for evaluation of the premium rates, within three days of the opening of the tender.

The winning bidder will be chosen on the basis of the lowest weighted average rate considering last year insured area as weight.

REQUIREMENTS FOR REGIONAL STATE GOVERNMENTS RUNNING THE SCHEME

States must commit to deploying requisite infrastructure and resources for the timely implementation of PMFBY, including co-observing CCEs and efficiently managing disputes with insurers and farmers over claims and yields. To ensure this, a series of non-negotiable deadlines must be set according to the scheme's operational guidelines. States must also ensure the settlement of claims as per set timelines.

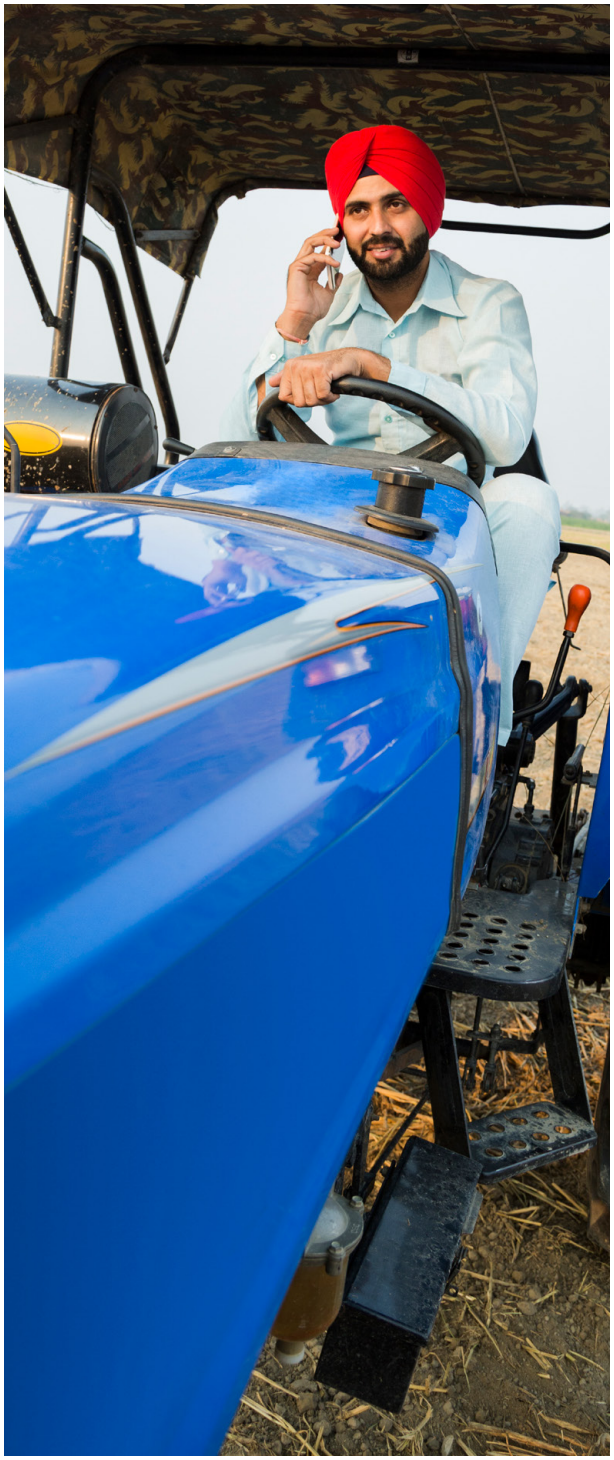
The State Level Coordination Committee on Crop Insurance (SLCCCI) is responsible for the monitoring of the scheme in its state. States are mandated to increase non-loanee take-up of the scheme, with a 10% growth target.

REINSURANCE AND STATE COVER

Insurers are encouraged to reinsure their portfolio. However, if the premium to claims ratio exceeds 1:3.5 or percentage of claims to sum insured exceeds 35%, whichever is higher, at the national level in a crop season, then the Indian national government will provide protection to insurers.

"Learning is an ongoing process for all stakeholders in this market. The crop portal is a good step taken by the Government of India. The government is planning to settle all the claims through this portal, which will create more visibility and trust for farmers."

Satyendra Mishra,
Asst. Vice President – Crop & Rural Underwriting, Future Generali



Calculations for basic 'threshold yield' cover

The core of the current scheme is a 'basic cover' programme, which assesses claims based on average yields, and which sets three levels of indemnity: 70%, 80% and 90%. The state insurance committee sets the indemnity levels for each notified crop at the district level.

The threshold yield must also be set out in the tender and will be used for claims calculation for that season. The average yield of a crop in each set area is set as the average yield of the best five years out of the last seven. The threshold yield is equal to the average yield multiplied by the indemnity level.

The threshold yield for any crop in a particular set area must be part of the notification for the contract period. In case of multi-year contract, the threshold yield for subsequent years can either be fixed, or a laddered system can be applied. In the laddered system, should the yields drop below the original average yield, then the same fixed price will apply. However, if yields increase, the seven-year average can be updated with the most recent years' data to allow it to increase to reflect this.

The indemnity level of the district crop combination is prescribed in the tender and will remain the same during the entire contract period.

CALCULATION OF SUM INSURED

The state managing the tender process will select one of two nominated pricing methodologies for crops[1], which will allow a calculation of the sum insured for each district and crop combination for the period of the contract.

This value can be changed in subsequent years, although the method of calculation, once selected, must remain consistent. Changes in pricing are capped at 10%.

1. The two methods are a) Scale of Finance, or b) Notional Average Value (= Notional Average Yield * Market Standard Price or Farm Gate price)

ASSESSING YIELD LOSS UNDER BASIC COVER

If the average yield per hectare for a defined area falls short of the specified threshold yield for the season, all insured farmers growing that crop in that area are deemed to have suffered the same loss of yield.

The claim is calculated at the area level as per the following formula:

$$\frac{\text{(Threshold Yield – Actual Yield)}}{\text{Threshold Yield}} \times \text{Sum Insured}$$

A calculation of threshold yield for Rabi 2014-15 season is given in the table below.

Year	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14	2014-5
Yield (kg/ha)	4500	3750	2000	4250	1800	4300	1750

The years of 2012-13 and 2014-15 have the lowest yields.

The total of yields of seven years is 22350 kg/ha and that of two lowest yield years is 3550kg/ha i.e.(1800+1750). Therefore, according to the provision, average of best five years excluding two lowest yield years will be (22350–3550=18800/5) i.e. 3760 kg/ha. Hence, threshold yield at 90%, 80% and 70% of indemnity levels will be 3384kg/ha, 3008kg/ha and 2632 kg/ha respectively.

Source: Operational Guidelines for Pradhan Mantri Fasal Bima Yojana (PMFBY), July 2020

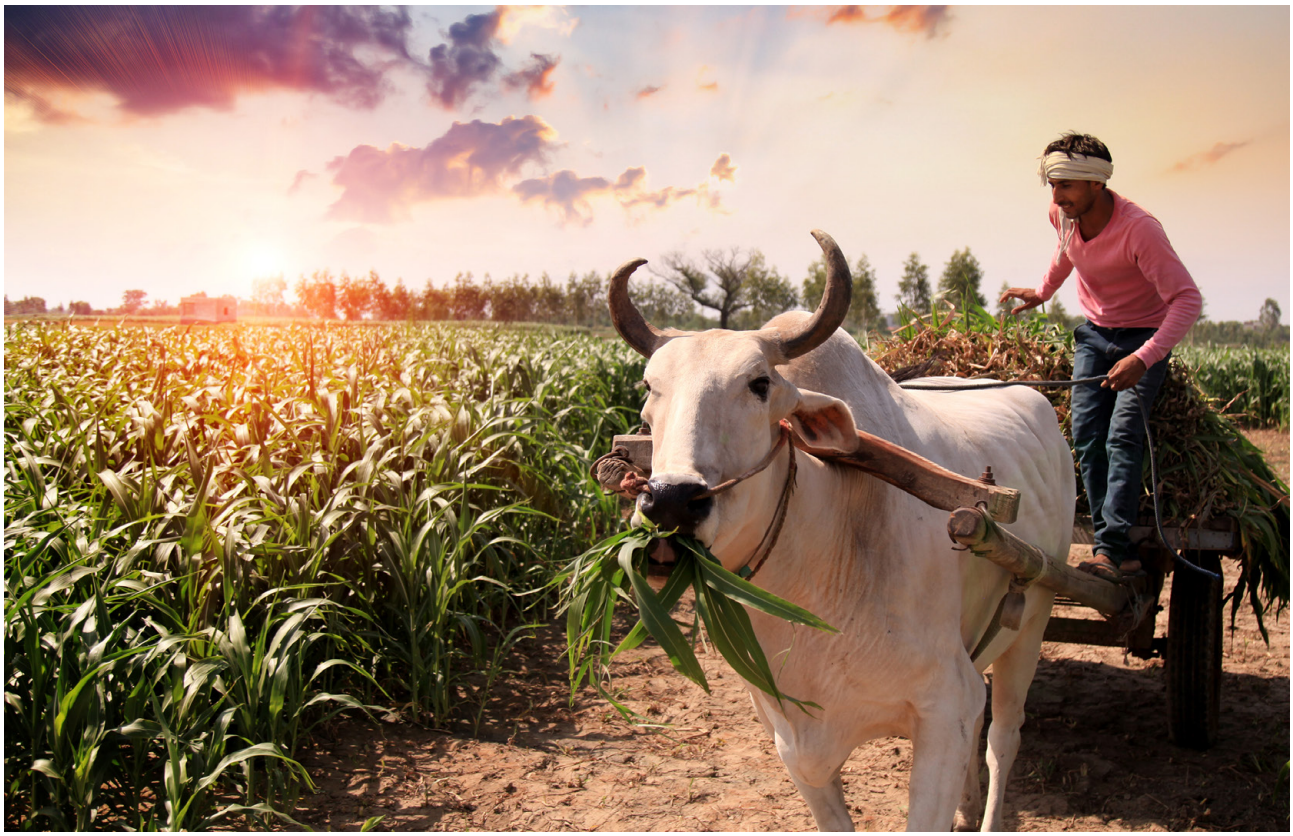
The growth of weather index insurance

India's agricultural insurance schemes were originally entirely designed to pay out around the concept of 'average yield'. However, 65% of Indian agriculture is heavily dependent on rainfall and rainfall accounts for nearly 95% of claims. [2]

Weather index insurance estimates the reduction in crop output due to known weather conditions. There are statistical techniques to work out the relationships between crop output and weather parameters (for example, multivariate regression can be used to explain the impact of weather variations on productivity). This makes it much cheaper to use than yield-based insurance, because claims are paid based on central data, rather than on CCEs.

The Agricultural Insurance Company of India (AIC) introduced its first version of weather insurance (known as 'Varsha Bima') in 2004. Varsha Bima provides for a variety of rainfall-based insurance options in areas where there are rain gauges in place and where crop loss data is available to allow statistical calculation of losses due to known levels of rainfall.

Over time Varsha Bima has been extended to 150 locations in 15 states. It currently sits alongside the main PMFBY scheme and is used in areas where rainfall is critical for the sown crops, and where rainfall can accurately be measured. Its use is limited by the availability of statistical data for the impact of rain on certain crops and within some weather patterns.



2. Source: Crop Insurance in India Agriculture Insurance Company of India Limited (AIC)

Add-on covers

There are several add-on insurances within the scope of the scheme. States can opt in and out of these. Most of the add-on covers do not have yield-based triggers and the government allows local states to set their own triggers for them, while suggesting use of indicators such as rainfall data, satellite imagery, drought assessment reports and crop condition reports by district officials. Triggers must be notified as part of a tender document.

The most used add-on options are as follows:

1. Sowing and germination cover

Sowing and germination insurance is triggered if a notified risk impacts crops in more than 75% of the area, leading to the total loss of crop before germination; or where farmers are not in a position to sow or transplant the crop.

2. Localised calamity

States can also add on localised calamity cover at the individual farm level for local perils such as hailstorm, landslide, inundation, cloud burst and lightning strike.

Maximum liability is limited to the proportionate sum insured of the damaged crop's area and the payout is in proportion to the cost of inputs incurred up to the occurrence of the insured peril.

3. Post-harvest Losses:

Post-harvest losses may occur when crops are stored in open fields for up to two weeks after harvest and are still vulnerable to bad weather and pests. This is assessed on an individual farm basis.

4. Wild animal cover

Finally, states in relevant areas can add on a cover for crop damage by wild animals.

TECHNOLOGY CASE STUDY: RIICE

RIICE is a public-private organisation that aims to reduce the vulnerability of small rice farmers in low-income countries in Asia, including Bangladesh, Cambodia, India, Indonesia, Philippines, Thailand and Vietnam.

RIICE has partnered with the European Space Agency (ESA) and other providers to scan the earth surface using radar-based sensing technology.

The radar based-remote sensing data, used in RIICE can detect the growth of rice at a resolution of 3x3 metres every few days as it circles around the earth. The data is stored in a map format and in numerical tables, with the administrative unit at village level. With this technology, it is easy to identify the extent of damage of crops caused by droughts and floods.

The claims process

As stated above, PMFBY has various different insurances on offer, with varying claims triggers. For individual losses and weather-index covers, claims are triggered by pre-agreed indices (such as satellite photography or rainfall measurements).

However, under the main 'basic cover' scheme, claims for widespread crop losses are decided by adopting a two-step yield estimation methodology.

The process of assessing yield starts with a round of Crop Cutting Experiments. The state government must set up a steering committee in each district to plan, conduct and supervise CCEs and to provide reports of yield data. If the required number of CCEs cannot be conducted, the yield estimate can be generated by (i) adopting yield estimate of next higher unit, or (ii) adopting the yield of the neighbouring area with the closest correlation.

The department overseeing CCEs will submit yield data, along with results of individual CCEs, via smart phone onto the NCIP portal. The yield data will be approved by the relevant state department and then made available to the insurer.

In case of multi-picking crops e.g. cotton, chilli, tobacco, tomato, pea, fruits (mango & apples) the state needs to specify the picking rate for irrigated and rainfed crops.

CLAIMS DISPUTES

During the early years of PMFBY, an increasing rush of yield disputes led to significant delays in claims settlement, but the latest operational guidelines have addressed this, setting out strict procedures for handling disputes between the state and the insurer over yield, as well as giving a structured and shortened timetable for a final decision to be made. Disputes must now be resolved in less than seven days by the responsible state department.

Technology has also been harnessed to break deadlocks. If yield estimates are abnormally low or high the insurer, in consultation with State Government, can now make use of satellite-based and weather models to confirm yield estimates.

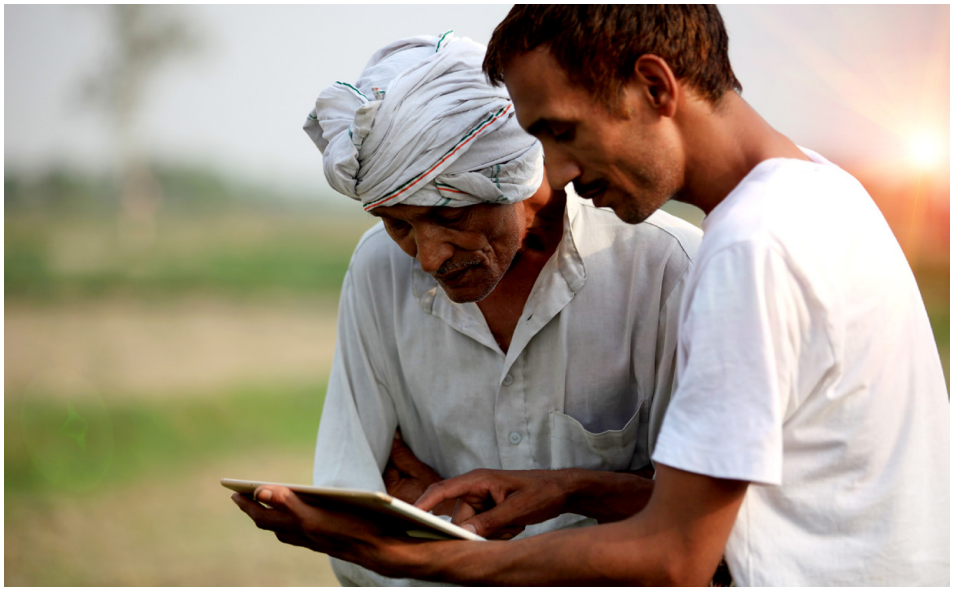
Introduction of new technologies

One of the major requirements of the scheme has always been using Crop Cutting Experiments (CCEs) for yield estimation. However, conducting such a large number of CCEs has become a very cumbersome task, considering the short harvest period within which they all have to be completed.

In order to overcome this, the government is trying to implement various approaches, such as smart sampling and the two-step yield estimation.

The government has recognized that to speed up adoption of these new approaches it needs to invest and has created a fund to allow states to invest in technology and training. The new operational guidelines for PMFBY stress that insurance companies and states should work with a stated list of national bodies (such as the government weather monitoring body) to adopt these techniques.

States are encouraged to use drones or LEO (low earth orbiting) mini-satellites to take low-flying images of crop damage caused locally, such as by hail, rain or insects. Drones fly below cloud level, avoiding problems with satellite imagery, while LEO satellites are small and fast-moving, providing rapid real-time updates.



SMART SAMPLING

Crop yield disputes have been a problem for the scheme and have been increasing. As a result, under the revamped PMFBY the phased implementation of smart sampling techniques has become mandatory.

Through smart sampling, the CCE fields in each insurance unit can be selected based on a yield proxy index. The primary advantage of this new technique is that it gives more representative yield estimates compared to conventional random sampling.

The add-on benefits of smart sampling include;

(a) notification of CCE locations just before harvest, minimizing the possibility of fraud

(b) identification of CCE locations through digital mapping, minimizing human bias

It is currently recommended that smart sampling technique are implemented for crops like paddy, wheat, mustard etc., where satellite-based crop mapping and multi-index based yield proxy layer generation are available from DAC&FW.

It is hoped to grow the number of crops included in the smart sampling category over time and ultimately the ambition of the government is to reduce CCE numbers by 30%-75% through the use of this technology.

TWO-STEP YIELD ESTIMATION

The other technique that is currently being trialled is 'two-step yield estimation'. The basic idea behind the two-step yield estimation is to initially assess crop loss using technical triggers (remote sensing, weather, field survey etc.) and then only carry out a large number of CCEs where the situation is 'severe' or 'moderate'.

Wherever the situation is assessed as 'mild' or 'normal', a reduced number of CCEs can be conducted. This approach requires agreeing the relevant climatic and pest-related disaster triggers and identifying threshold values to categorize a situation as 'Severe', 'Moderate', 'Mild' or 'Normal'.

Indicators can include rainfall, dry spells, temperature, satellite-based crop condition, satellite-derived thematic maps, and using these decision rules can developed so that areas can be classified into Severe', 'Moderate', 'Mild' or 'Normal', with respect to any particular risk. This approach is similar to parametric cover and is used for drought, floods, cyclones, frost and unseasonal rains, as well as some pest and disease outbreaks.

4. KEY TAKEAWAYS AND OPPORTUNITIES FOR REINSURERS

Whilst the PMFBY has continued to improve and evolve over the last four years, it is imperative that the Government continues to draw lessons from practices followed in other countries where the crop insurance schemes have been hugely successful, such as the United States, China and Kenya.

The heavy premium subsidy programme started by the Chinese Government in 2007 enabled the expansion of insured farm area from 15 million hectares to almost 120 million hectares – if India was able to penetrate the crop market in a similar fashion and expand the insured area to 100 million hectares, this could potentially lead to a significant decrease in the actuarial rates and benefit the scheme and all its participants tremendously.

"As an insurer we are keen to work with new reinsurers with new technology and profit-sharing formulae".

Satyendra Mishra,
Asst. Vice President – Crop & Rural Underwriting, Future Generali

Similarly, the US has also managed to cover over 90% of its gross cropped area, making it one of the largest markets for crop insurance and reinsurance. This was only possible by ensuring the scheme was administratively easy to implement and making sure participation is mandatory. Needless to say, this is possible only when a government instills the farmer's faith in the current insurance system, and that is somewhere India can definitely improve.

Instability has been very damaging for reinsurers previously in the Indian market. Many reinsurers have commented that it is crucial that there is stability in the scheme so that they can view the business as a long-term strategy. Recent years have been loss-making (floods, heavy rain) so insurers and reinsurers have suffered financially. Whilst they understand that the government scheme is to help the farmers, there needs to be some margin, even if it is very small, so there is a win-win for all.

The government should not only subsidise premiums for the farmers but should also play an important role in reimbursing the insurers for the operating and administrative expenses borne by them. Revenue insurance protects farmers from fluctuations in both price and yield and has led to it becoming one of the most popular products in the USA. Crop insurance is sold as a retail product in the USA and analysis of claims is done on the basis of productivity of individual plots of land. This is possible only because the average size of landholding is about 174 hectares.

It would be in the Indian Government's best interest to set up an agency (under the the Insurance Regulatory Development Authority) to determine the premium rates and insurable crops in different parts of the country.

Another key example to draw from would be that of Kilimo Salama, which is a weather-index based insurance product developed and launched in Kenya in 2009. By insuring farm "inputs" such as seeds, it provides coverage for the entire crop cycle against any natural calamities (such as drought or excess rainfall).

By developing an application that uses Safaricom mobile technology (M-Pesa) to transfer money for premium and claims payouts, it leads to almost no transaction costs in issuing a policy or settling claims. The system of claim disbursement via mobile technology also ends up making claims payouts timely and incredibly efficient.

Since the government of Kenya does not provide any subsidy to the farmers, the use of such 'smart technology' also ensures that premium rates are kept at an affordable level (between 4 to 13 per cent) and serves as a key example of how a country's crop insurance programme can succeed despite little to no government support.

While the revision of the tendering process (which is now on a three-year basis) can be seen as beneficial by certain state governments, it is important that the scheme is strictly monitored and adhered to, in order to make sure the PMFBY continues to remain attractive to foreign reinsurers.

In our interaction with reinsurers, we have always observed that their primary concerns tend to be around the lack of transparency, the bureaucratic/ regulatory challenges, and the potential moral hazards in the business, especially during this time of a global pandemic where reinsurers are more cautious about who is taking control of farming if many farmers have been forced to isolate. Given the labour-intensive and bureaucratic nature of the agriculture sector in India, it is often very time consuming, especially for London reinsurers, who prefer something more 'low touch'.

Despite the current challenges, however, the silver lining lies in the increased use of satellites and drone imagery technology which the government is promoting. By adopting high quality mobile apps to carry out CCE's, remote sensing methodologies to assess crops and low lying satellites (LEOs), India is definitely on the right path towards eventually making the scheme 'efficient', and we hope to see a positive outcome for all parties involved over the next few years.

5. CONCLUSION

India's agricultural crop programmes provide a critical safety net for millions of smallholder farmers in a continent with extreme weather and many farmers living below the poverty line.

However, over many years, the scheme has become burdened with complexity, delays and a reputation for inefficiency, which the scheme operator is now beginning to realize and address.

New technology brings an opportunity to correct much of this, and the new operational guidelines published by PMFBY also do much to help bring administrative rigour into the scheme to help faster management of claims.

Further, the awarding of multi-year contracts to insurers gives them an opportunity to 'grow into' the schemes they manage and begin to offer real expertise to their local state partners. Insurers are responding to this with enthusiasm, and this, in turn offers an opportunity to international reinsurers, who can potentially now partner with local insurers on a longer-term and more profitable basis.

We hope this guide gives an introduction to the market and the parameters of the scheme, allowing international firms to consider further whether to enter the market.

If you would like to speak about India's agricultural insurance programme, please do contact our team.

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