

# Capacity Building Seminar On Crop Insurance

## Sea Princess Hotel, Mumbai

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## Claims management for client satisfaction

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# Agenda



- **PMFBY Features**
- **Basic cover –CCE based claim settlement**
  - Coverage and process
  - Constraint
  - Suggestive measures
  - Case study on technological intervention
- **Add on cover –prevented sowing/mid season/localised/post harvest losses**
  - Coverage and process
  - Constraint
  - Suggestive measures
  - Case study on technological intervention
- **Claim calculation**
  - Constraints
  - Suggestive measures

# Pradhan Mantri Fasal Bima Yojna: PMFBY

## Holistic coverage of risks



- Pre sowing/germination stage
  - Prevented sowing/planting/germination due to adverse climatic condition(based on actual sowing estimates arrived via survey)
  
- Standing Crop(Sowing to harvesting)
  - Coverage of yield losses due to non- preventable risks , viz. Drought, Dry spells, Flood, Inundation, Pests and Diseases, Landslides, Natural Fire and Lightening, Storm, hailstorm, Cyclone, Typhoon, Tempest, Hurricane and Tornado - basis CCE based yield estimates
  - Localised risk cover for occurrence defined perils: ***hailstorm, landslide, inundation, cloud burst and natural fire due to lightning***
  - Mid season adversity for payment of 25% on account claims of expected losses during adverse climatic condition wherein expected losses are >50%
  - Add on cover of crop losses due to wild animal attack(guidelines to be formalised)
  
- Post harvest stage
  - Post harvest losses cover for 2 weeks after harvesting due to defined risk of ***hailstorm, cyclone, cyclonic rains and unseasonal rains***

# PMFBY: CCE Based loss estimation

## Scope of guideline and process

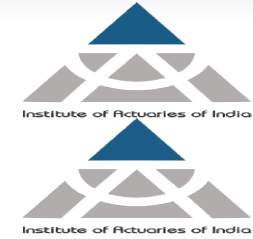


- Eligibility criteria
  - All notified crops and insurance units
  - Farmers who have paid/debited premium from their account before cut off date to be eligible
  
- Process
  - State Government to conduct yield assessment via CCEs at notified unit level to establish actual yield
  - State government to declare certified yield data to ICs for notified crops and notified units with in the cut off date as notified
  - Claims will be calculated at notified unit level basis defined parameters
  - ICs will complete claim calculation with in 7 days of receipt of yield data
  - ICs to settle claims with in 3 weeks of receipt of yield data subject to receipt of subsidy

CCE – Crop Cutting Experiment

# Claim settlement constraints

## Pre and Post Phase of Crop Cutting Experiments



### Pre Phase

- Large no of CCEs in small time window(>5mn in 45-60 days)
- Lack of adequate manpower at district level
  - Subcontracting of CCE activity beyond revenue/agriculture officials
  - Huge quantum allocated to limited manpower
- Challenges in planning of CCE monitoring due to Non availability of CCEs calendar

### Post phase

- Low usage of mobile application and manual recording of CCEs affects transparency of the activities
- Delay in submission of yield data to Implementing agencies
- Non conduct of CCEs due to administrative reasons leading to non representative claim settlement

Above factors leading to delay in CCE reporting which further delays claim settlement

# Claim settlement : Crop Cutting Experiments

## Pre and Post Phase: Suggestions



### Pre Phase

- Usage of smart sampling technique based on remote sensing study during crop cycle stages reducing the no of CCEs
- Structured CCE schedule tracking at district level and Gram Panchayat level
- Involvement of experts in Agri field – e.g retd. Officers , Agri research Institutions & surveyors

### Post Phase

- Conducting regular training programme for primary workers entrusted with CCEs enabling them to maximise the usage of CCE app for CCE
- Back up resources should be aligned well in advance to ensure timely conduct of CCE leading to lesser dispute

# Smart sampling based on remote sensing

## An illustration

- Created in-house remote sensing capabilities for CCEs and yield loss estimation
- Helps us rationalize the sampling based on expected crop performance
- Only insurance company to have in-house RST capabilities
- Have been able to monitor ~95% of sensitive area CCEs vis-à-vis minimum requirement of 30%



Sample crop signatures having good crop and high NDVI



Smaller no of CCE by mapping good yield area to be monitored across crop type and Insured Unit area



Sample crop signatures having poor crop and low NDVI



Larger no of CCE by mapping effected yield area across crops and within the Insured Unit areas

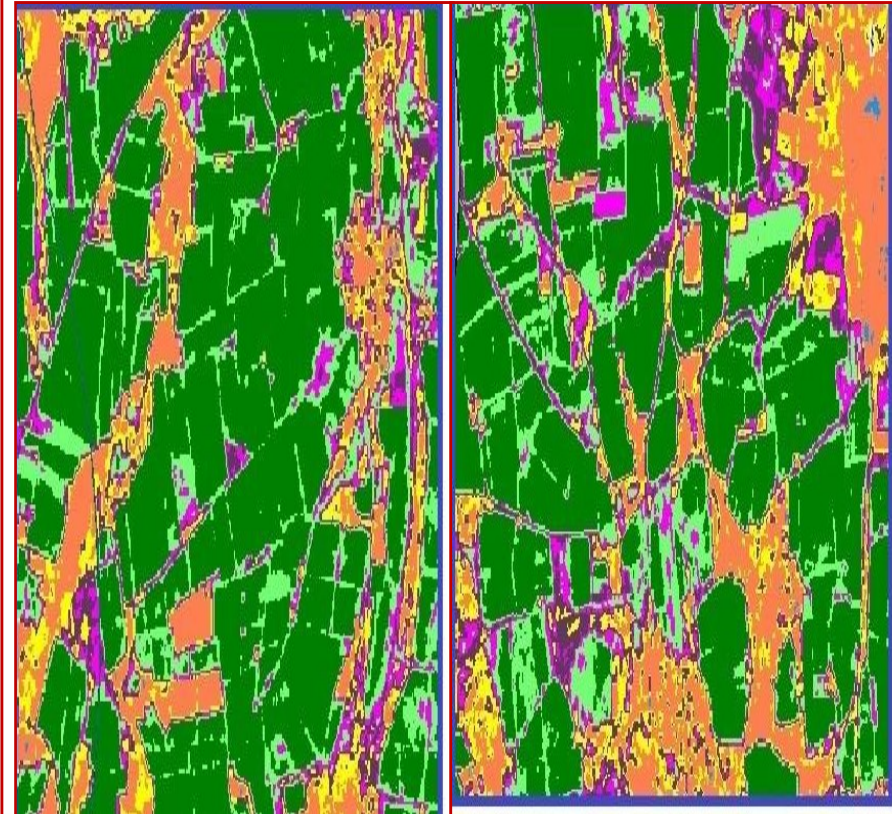


## Case Study:

### Usage of remote sensing to address yield discrepancy

#### Yield discrepancy study

- Yield variance in two adjacent villages were 4731 and 90 Kg/hectare respectively
- Satellite image (Inset) taken just before maturity stage of crop for both village
- NDVI points for both village are in the range of 0.8-0.9
- NDVI based study reveals estimated yield between both the villages should be in same range however the data indicates a huge differential in both the villages



Inset image- Samor Village

Inset- Hansthal village



# PMFBY: Prevented sowing cover

## Scope of guideline and process



- Eligibility criteria
  - Applicable for major crops in notified units wherein >75% of normal sown area remained
    - unsown/prevented sowing/failed germination due to adverse climatic conditions
  - Provision invoked by State proxy indicators like rainfall, satellite data etc
    - within 15 days of cut off date for enrolment
  - Eligible for farmers whose premium is paid/debited from account within cut off date
  
- Process
  - Declaration of Notified unit and crop by State Government
  - Lump sum amount of 25% of sum insured to be paid by insurance companies
  - Policy terminated within 30 days of invoking the clause by State Government

# PMFBY: Mid season adversity cover

## Scope of guideline and process



- Eligibility criteria
  - All notified units and crops wherein expected losses are >50% due to adverse climatic situation
  - Provision invoked by State Government based on proxy indicators such as weather data, satellite data
    - 15 days before the crop harvest time
  - Farmers who have paid premium or premium debited from their account before state govt notification will be eligible for claims
  
- Process
  - State Government will issue damage notification with in 7 days of occurrence of event
  - Joint survey by ICs and District Administration and loss report finalisation with in 15 days
  - 25% of expected claims will be paid by upfront by ICs with in 1 month of State Government invoking the clause
  - Adjustment of midseason claims to final claims calculated based on CCEs data

# PMFBY: Localised risk/Post harvest losses covers

## Scope of guideline and process



- Eligibility criteria
  - For localised risk cover, all notified units and crops affected by named risk of hailstorm, landslide, inundation, cloud burst and natural fire due to lightening
  - For post harvest loss cover, all notified units and crops affected by named risk of hailstorm, cyclone, cyclonic rains, unseasonal rains resulting into damage of crop lying in field in cut and spread/small bundle condition for maximum 14 days from harvesting
  - Proxy indicators such as local media , weather data or reports by revenue/agriculture department to be used
  - Farmers who have paid / debited premium from their account before State Govt notification will be eligible

# PMFBY: Localised risk/Post harvest losses covers

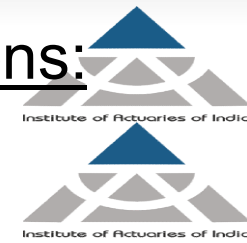
## Scope of guideline and process



- Process for claims
  - Claim intimation with in 72 hrs of occurrence of event via direct/bank/local agriculture department, district officials or central govt toll free
  - Premium payment verification via portal or bank to be done with in 48 hours of intimation
  - Loss survey will be done at individual plot level with 10 days
  - Localised risk based claim calculated based on % losses adjusted to cost of input till the occurrence of event
  - Claims payment to be done with in 15 days subject to receipt of farmer premium
  - Final adjustment of localised risk based claims to final CCE based claims

# Claim settlement impediments and suggestions:

Add on cover



## Constraints

- Incomplete data available at portal for identification of insured farmers
- Delays in receiving confirmation of coverage of farmers from Banks for non portal data
- Delayed submission of sown area data (for prevented sowing risk cover)
- Lack of adequate manpower at district level for survey
- Limited time window available
- Bulk intimations in short time window due to lesser awareness among farmers

## Suggestions

- Large scale awareness programme jointly by ICs and District administration for making farmers understand claim intimation and settlement process
- Ensuring completion of portal data entry with in cut off date by banks
- Bank confirmation on coverage of farmers intimating claims with in defined timelines as specified in the guidelines (for non portal entry cases)
- Exploring usage of remote sensing/drone based technology in case large no of surveys to be done for in short span of time
- Timely payment of subsidy pre and post season commencement

# Prevented Sowing Case Study:

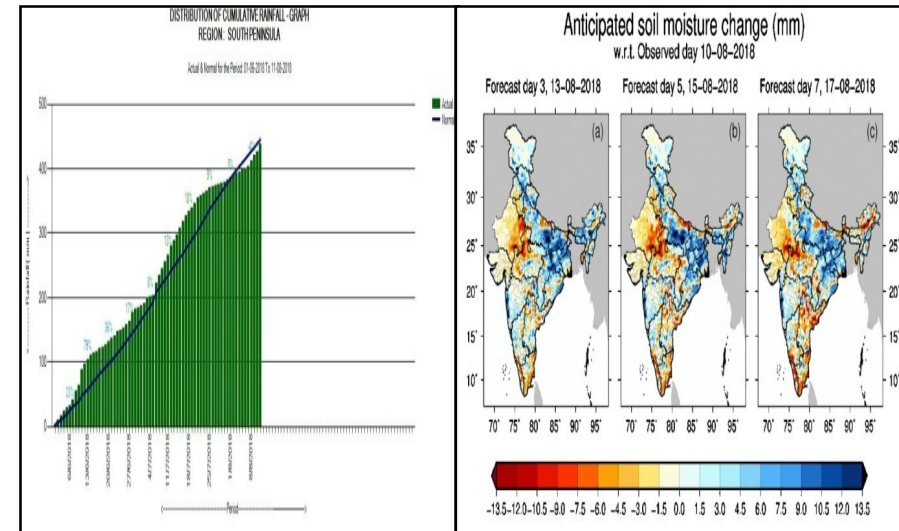
## Usage of remote sensing for acreage estimation



Institute of Actuaries of India

### Rainfall study

- Daily rainfall tracking done was done for district and it was found that district was continuously in large deficit condition
- Deficit rainfall till 15<sup>th</sup> august was around 58%
- Soil moisture condition was also not good for growth of cotton crop available on 28<sup>th</sup> October based on NDVI based map
- Rainfall forecasting for coming week were also not good

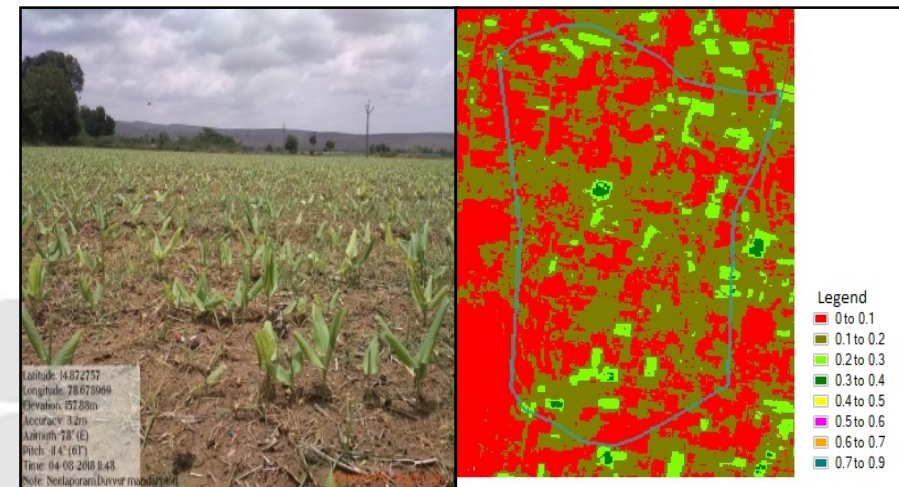


Rainfall pattern during season

Soil moisture study during season

### Satellite based data processing

- Collected 61 crop signatures geo tagged from the field
- Downloaded real-time satellite data (Sentinel 2A images ) downloaded between 18<sup>th</sup> June to 8<sup>th</sup> August
- Crop classification was done overlaying crop signatures on satellite data
- NDVI values were calculated at the village level based on color coding
- Estimation of crop acreage done at village level



Rainfall pattern during season

Processes satellite images



## Case Study:

### Usage of Drone based technology to assess flood impact



#### CAT Loss Monitoring (Drone Technology)

- Drone was flown in 2 major tehsils to ascertain losses due to flooding during October month
- Loss assessment based on images / videos captured by UAVs using extrapolation techniques at village level
- Highlights of Study done:
  - The values calculated basis images were extrapolated to the entire village
  - Actual Losses calculated ~ 40% of Insured area effected against initial loss estimates of 85%
  - Major losses observed in select locations near to river and canals
  - Report submitted to Government which helped them on providing details of expected losses

#### A sample drone image and cat loss estimation grid

Below mentioned picture taken for a village where loss affected area was around 9%



Particulars	% Area
Water	0.3%
Good Crop	28.9%
Partial crop damage	7.6%
High crop damage	1.4%
Others (Built Up etc)	61.8%

9%

# Claim calculation and settlement

## Current impediments and suggestive measures



### Constraints

- Delayed yield data submission to ICs
- Non availability of actual yield data at notified unit or crop level due to non conduct of CCEs
- Delayed data entry and reconciliation on the portal
- Erroneous Data entry in the portal while mapping IU and farmer bank account details required for DBT
- Small ticket claim payment (due to very small negative deviation of actual yield as compared to threshold yield) leading to bad media reports
- Delayed claim settlement due to delay in receipt of subsidy

### Suggestions

- Portal based claim calculation based on predefined threshold yield and exported data from mobile application
- Strict adherence and discipline on reconciliation of portal data with in defined timelines specially with respect to premium tagging
- Ensuring correct bank account data entry for individual farmers for DBT payment
- Minimum franchise component which will avoid small ticket claims payment to farmers
- Timely payment of subsidy pre and post season commencement



**Thank You**