कृषि, सहकारिता एवं किसान कल्याण विभाग
महलानोबिस राष्ट्रीय फसल पूर्वानुमान केंद्र
नई दिल्ली
Dept. of Agrl Coop. & Farmers' Welfare
MAHALANOBIS NATIONAL CROP FORECAST CENTRE

# मासिक प्रगति रिपोर्ट: मई, 2018

# Monthly Progress Report: May, 2018

## मुख्यविशेषताएं/Highlights

- **24 मई 2018 को प्रधान एडवाइजर, डीएसी और एफडब्ल्यू की अध्यक्षता में फसल परियोजना समीक्षा बैठक आयोजित की गई।**
- **फसल परियोजना विवरणिका तैयार और जारी किया गया।**
- **राष्ट्रीय/ राज्य स्तर पर वर्ष 2017-18 के लिए प्याज के क्षेत्र और उत्पादन अनुमान का पुनर्मूल्यांकन।**
- **देश की कृषि स्थिति का अप्रैल 2018 के महीने का फसल क्रॉप वॉच बुलेटिन तैयार किया गया।**
- **सूखा डैशबोर्ड के लिए वनस्पति सूचकांक डेटा लाने के लिए एपीआई को कोड किया गया और आईटी डिवीजन के साथ साझा किया गया।**
- FASAL Project Review Meeting was organized under the Chairmanship of Principal Adviser, DAC&FW on 24th May 2018.
- FASAL project Brochure was prepared and released.
- Reconciliation of Onion estimation for the year 2017-18, and finalization of state and national level area and production estimate
- FASAL Crop Watch Bulletin prepared for the month of April 2018
- API was coded and shared with IT division for fetching Vegetation Index data for Drought Dashboard

## Forecasting Agricultural output using Space, Agro-meteorology and Land based observations(FASAL)

- A one day FASAL Review Meeting was organized under the Chairmanship of Principal Adviser, DAC&FW on 24th May 2018 in MoES, New Delhi. Delegates and officials from DAC&FW and various organizations (ISRO, IMD, NSSO, ICAR, SAU) participated to review the FASAL project. Scientists and Officials from MNCFC, ISRO, IMD State Remote Sensing Centers and State Agriculture Department present their status of work.
- FASAL Brochure containing one year of work done under FASAL project was prepared and released on 24th May 2018.
- Comparative analysis (RMSE and Correlation) was accrued out between RS based estimates and DES crop estimates, at State level (with 2nd advance estimates) and District level (with three year average) was made of major 8 crops kharif and rabi rice, jute, cotton, sugarcane, wheat, rapeseed & mustard, rabi sorghum and rabi pulses production forecast for the year 2017-18.
- National/State/District level Crop Cutting Experiments and Ground truth data analysis (uploaded on Bhuvan geoportal) for all crops, for last 4-5 years, are being analysed.
- MODIS, INSAT-3D and Gridded temperature data are being preprocessed regularly for semi-physical yield forecasting.
- Revised estimate of State level yield for rabi pulses were computed using MSBD wise weather data (from October 2nd fortnight 2017 to March 1st fortnight 2018) using regression models for 6 States.
- District wise yield analysis for Rabi pulses (Gram) has been carried out using Satellite (MODIS 250 m resolution) derived Vegetation indices (NDVI, NDWI and VCI) from October 1st fortnight to February 2nd fortnight.
- Crop Cutting Experiment data received for Rabi Rice, Wheat and Mustard are being processed.

## National Agricultural Drought Assessment and Monitoring System (NADAMS)

- Resourcesat 2 AWiFS NDVI (Normalized Difference Vegetation Index) data and Weekly IMD Rainfall data was processed for the month of May 2018.
- Inputs (Rainfall, NDVI and Temperature) were prepared for the GEOGLAM Crop Monitor for the month of May 2018.
- District level shapefile updated for the whole country, for drought assessment during Kharif, 2018. Taluk level shapefile updated for 14 states.
- Webpage was designed for downloading NDVI/NDWI & PASM (Per cent available soil moisture) data and also for the visualization of NDVI/NDWI, PASM and Rainfall in graphical form.
- A database for drought related data viz. NDVI, NDWI for previous years and current year was developed and an API was designed and developed for sharing of data with IT division. The API is hosted on a system in MNCFC with a public

IP address provided from NKN. Data from MODIS for previous and current year was already populated in the drought database.

- Scientists regularly participated in the weekly meetings of Crop Weather Watch Group (CWWG) and CWWG-DM and provided inputs.

## Co-ordinated Horticulture Assessment and Management using geo-iNformatics (CHAMAN)

- Reconciliation the estimates of area & production of Late Kharif & Rabi onion for the year 2017-18 was carried out, in the major growing states, i.e. Bihar (5 dist.), Gujarat (7 dist.), Maharashtra (9 dist.) & Madhya Pradesh (10 dist.), with the involvement of respective State Horticulture Departments and NHRDF, Nasik during 14-15th May, 2017 at MNCFC. Based on reconciliation, a state and national level Onion Acreage & Production for 2017-18 was estimated.
- Quality check and evaluation of banana (2 dist) and citrus (2 dist.) in Maharashtra state was organsied out at RRSC-C/NRSC, Nagpur on 18th May, 2018 with the participation of State Agriculture Department and State Remote Sensing Centre, Maharashtra. The team reviewed that overall methodology and finalized the statistics and output maps.
- Tomato estimation of 3 districts (Keonjhar, Kalahandi, Mayurbhanj) and Chilli estimation of 2 districts (Balasore and Kalahandi) for the state of Odisha were finalized.
- Comparative analysis of remote sensing based area and production estimation of Potato, Onion, Citrus, Chilli, Tomato and Banana crop at district/state/ national level was carried out vis-a-vis HAPIS and DAC&FW (Hort.).
- Modified national level horticulture area and production crop maps were produced for Almond, Aonla, Apple, Banana, Brinjal, Cauliflower, Citrus, Cumin, Garlic, Grapes, Green Chilly, Guava, Mango, Okra, Onion, Papaya, Pine apple, Potato, Red Chilli, Tomato, based on district level statistics of crop area and production for the year 2015-16.

## Crop Insurance (KISAN): Support to PMFBY

- Taluk wise CCE discrepancy analysis was carried out for Karnataka state. Analysis of yield for the taluk's having less CCEs or Less pickings was done using Historical weather data and Remote sensing (NDVI and NDWI) data. Taluk level yield estimation models were developed.
- Kharif Rice 2017-18 Crop Cutting Experiment analysis report for Odisha state was prepared.

## Crop Intensification: Rice fallow

- Land Surface Wetness Index (LSWI) map was prepared using Landsat-8 OLI satellite image for the month of December 2016 (2nd fortnight) and January 2017 (1st fortnight) for Jharkhand State.
- Satellite data based Jharkhand *rabi* cropped area for the year 2016-17 was verified. Landsat-8 OLI data satellite image were used to verify the rabi crop

area and in generation of surface water bodies for the state of Bihar and Jharkhand.

- Rectification of soil pH map and its digitization for the state of Jharkhand is being done.
- Gridded Temperature data is being used to prepare temperature map for Jharkhand state.
- Physical Progress report of the crop Intensification project was compiled using two years of work done under the project.

## SCATSAT-1 Utilization Program

- A Yearly Progress Report was prepared for the work done in SCATSAT project.
- Yield modelling for UP is done using SCATSAT data, the yield result was also compared with the yield estimates from FASAL Agrometerology models which is operationally provided by MNCFC
- CCE yield for Haryana was extrapolated to generate a yield map; the results were also compared with operational yield results.

## Report/Publication


- Rawat, K. S., Sehgal, V. K., Pradhan, S. and Ray, S. S. (2018) Semi-empirical model for retrieval of soil moisture using RISAT-1 C-Band SAR data over a sub-tropical semi-arid area of Rewari district, Haryana (India). Journal of Earth System Science. 127: 18
- Roy, Shreya, More, Revati, Kimothi, M.M., Mamatha, S., Vyas, S.P and Ray, S.S. (2018) Comparative analysis of object based and pixel based classification for mapping of mango orchards in Sitapur district of Uttar Pradesh. Journal of Geomatics, Vol12 No.1, pg. 69-76.
- Neetu, Singh, V. K. and Ray, S.S. 2017, Crop discrimination using multi-date RISAT-1 SAR single and dual polarization data. 38th Asian Conference on Remote Sensing - Space Applications: Touching Human Lives, ACRS 2017, 2017-October
- Choudhary, K., Bisen, P.K., Saxena, R., Tahlani, P., Ray, S.S. 2017, Assessing the drought situation of India as per the new drought manual 2016 38th Asian Conference on Remote Sensing - Space Applications: Touching Human Lives, ACRS 2017, 2017-October
- Dubey, S.K., Gavli, Ashutosh, S.K. Diwakar, Neetu and Ray, S.S., 2017. Use of Vegetation Condition Index for Rice Yield Forecasting. 38th Asian Conference on Remote Sensing - Space Applications: Touching Human Lives, ACRS 2017, 2017-October
- Mamatha, S. and Kimothi, M.M., 2017. Mentha Crop Assessment using Multidate Remote Sensing Data: A Case Study for Barabanki District, Uttar Pradesh. 38th Asian Conference on Remote Sensing - Space Applications: Touching Human Lives, ACRS 2017 , 2017-October

- Project Proposal for CHAMAN (Coordinated Horticulture Assessment and Management using geoiNformatics) -Phase-II (2018-2020), MNCFC/CHAMAN /2018/03
- CHAMAN Annual Action Plan, 2018-19, MNCFC/CHAMAN/2018/04
- Progress Report of Crop Intensification Project. MNCFC/Crop Intensification/ 2017-18/01, 39p. May, 2018.
- Progress Report of the Project 'Estimating Rice Productivity using Scatterometer data', 2017-18. MNCFC/SCATSAT/2018/01. 23p. May, 2018

## Other Activities

- Following Enhancements are under development in *Insight* (Intranet Portal of MNCFC)
    - Admin login is being added to facilitate entry of leave records of employees by Admin In-charge
    - Facility for online MPR submission along with daily work done entry is being developed. Database for all employees and their daily sheet entry is completed. Official hierarchy is planned to be introduced in online MPR submission system.
- Menu of MNCFC website is updated as per the current requirements and also pages were updated as per current scenario.

❖ **The Scientists of MNCFC participated in the following Meetings/Workshops/ Conferences.**

### Meetings/Workshops/Seminars Attended (Selected List)

| Date & Venue | Meeting/Conference | Participated by | Participation |
|---|---|---|---|
| 2nd May 2018, Udyog Bhawan, New Delhi | Meeting of the Jute Advisory Board, chaired by Secretary, Textiles | Dr. S. S. Ray, Dir.<br>Dr S. Saxena, AD | Participation & Feedback |
| 08th May 2018, Vigyan Bhawan | 2nd meeting of National Level Monitoring Committee (NLMC) under PMFBY/ RWBCIS | Dr. S.S.Ray, Dir.<br>Mr Sunil Dubey, AD | Participation & Discussion |
| 09th May 2018, MNCFC | Start- up Workshop | Dr. S.S.Ray, Dir.<br>Mr Sunil Dubey, AD | Organisation |
| 10thMay 2018, SAC Ahmedabad | Hydrology Training at SAC, Ahmedabad | Dr. S.S.Ray, Dir. | Lecture on Drought Assessment |
| 11th May 2018, DST, Technology Bhawan | Expert Advisory Committee Meeting on a Project Proposal | Dr. S.S.Ray, Dir. | Participation & Discussion |
| 18th May 2018, Mussoorie | National Level Conference on Pradhan Mantri Fasal Bima Yojana | Dr. S.S.Ray, Dir.<br>Mr Sunil Dubey, AD<br>Mr A. Gavli, ALP | Lecture on Space Technology for Crop Insurance |
| 18th May, 2018 Nagpur | Quality evaluation & Reconciliation of Citrus & | Dr. M. M. Kimothi, Consultant | Participation & Feedback |

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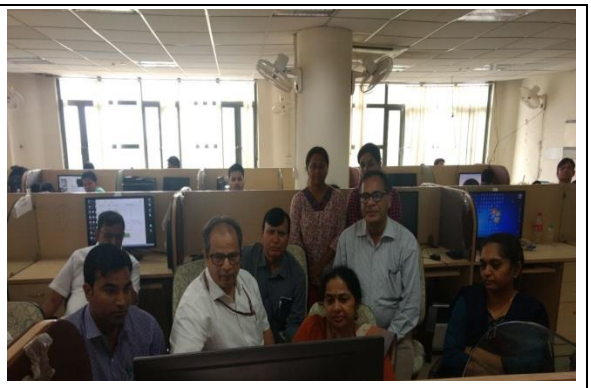
|---|---|---|---|
| | Banana of Maharashtra State | | |
| 21st May 2018, New Delhi | 2nd Sitting of the Public Accounts Committee (PAC)– to examine the "Performance Audit of Agriculture Crop Insurance Schemes' | Mr Sunil Dubey, AD | Participation |

Quality Check Meeting of Banana and Citrus in Maharashtra state at RRSC-C/NRSC, Nagpur on 18th May, 2018, coordinated by MNCFC



Reconciliation Meeting for the estimates of area & production of Late Kharif & Rabi onion for the year 2017-18, 14th -15th May 2018 at MNCFC

A one day FASAL Review Meeting was organized under the Chairmanship of Principal Adviser, DAC&FW on 24th may 2018 in Arnav Hall, Prithvi Bhavan, New Delhi.