

Concept Note on Forecast Application for Risk Management (FARM) in Agriculture Sri Lanka

Background:

Food and Agriculture Organization of the United Nations (FAO) and RIMES have entered into collaboration to provide technical and other assistances to the Department of Agriculture (DoA), for enhancing capacities through provision of customized Agro-meteorological services. The project, which targets to strategically enable farmers to access and utilize information of various timescales from Department of Meteorology (DoM) and other global sources and facilitate meaningful agro-meteorological information for preparedness. Agriculture is the main source of livelihood – being highly at-risk to climate variability, there is a need to capacitate farmers to better manage resources and risks through the utilization of climate information of different timescales.

FARM School in Sri Lanka:

The FARM School process will be customized to specific location in two pilot location i.e. **Maha Illuppallama** (for maize-based advisory) and **Batalagoda** (for rice-based advisory), taking into context local climatology and other characteristics, and farmers' perceptions and practices.

The Maha Illuppallama is falls under Northcentral while Batalagoda falls under Northwestern region of Sri Lanka. The both pilot locations were characterized by seasonally limited water availability, dry and bimodal annual distribution of rainfall. The major of precipitation occurred during two to three months of monsoonal rain annually between December and February. The monsoon rainfall distribution in a year is classified as follows.

March to April -- First Inter Monsoon (FIM) rains

May to September --South West Monsoon (SWM) rains

October and November -- Second Inter Monsoon (SIM) rains

November and February -- North East Monsoon (NEM) rains

The rice is major cereal crop in Sri Lanka. The other cultivation includes tea, rubber and coconut plantation. Fruit, vegetables, and oilseed crops are also cultivated in the country. Recently Maize cultivation has become increasingly popular among many farmers as a cash crop. The important cultivation seasons in Sri Lanka are as follows.

Season: 1. Yala (April to August; dry season)

2. Maha (main season/ October to March; Northeast Monsoon)

The FARM School Process:

The FARM School process is designed to demystify science and employ simpler methodologies to make scientific processes related to weather and climate understandable to agriculture extension officers and farmers. The Agriculture officers will be introduced to the functions and purposes of SESAME web tool and utilization of available forecast. The trained farmers from Farmers Training (FT) may be able to adjust their crop calendar to:

- Maximize the use of agro-advisories produced by SESAME Tool to increase the agriculture production using potential favorable climate during the season
- Manage potential risks
- Validate forecasts, for aiding their understanding of probabilistic forecasts and further strengthening application of climate information
- Better understand variability in weather and the uncertainty in forecasts

The major activities for FARM School implementation are**1. Inception /Planning workshop (video conference) on 28th May, 2019**

The video conference could be organized including participants from DoM, Sri Lanka, FAO and RIMES in the month of May to for discussion on venue, number of participants and other logistics for training workshop and customization of training module as per local context.

2. Training of Trainers (ToT) (4-days, 08-11 July, 2019)

Expected participants: 20-30 nos. including Agriculture Extension Officers, Agriculture experts from NGO's, progressive farmers and Met Dept. staff
Participants from ToT are expected to serve as trainers during Farmers' training.

3. Farmers Training (in-situ training, 3 days, covering both the locations)) in August, 2019

Expected participants: 30 nos. including selected farmers from pilot locations who will learn and utilize the knowledge gained in their farming activities and also teach their fellow farmers, NGO representative

Participation of representative from local agencies:

The National Resources Management Center (NRMC) and FAO could identified local agencies/NGO partner and progressive farmers to be involved in the Training of Trainers (ToT) workshop and in Farmers Training. The process is expected to provide a great learning opportunity for the experts from the partner NGO who will be involved in the FARM school process. The knowledge gained will be very useful for similar work in various other sectors. The NGO partner along with progressive farmers encouraged to coordinate and communicate with farming community and agriculture research centers.

The knowledge support is expected from the local NGO partner for the context of respective pilot locations. This includes some basic information related to:

1. Basic information about weather, climate and climate change
2. Crop-Weather Interaction
3. Soil and Water Management Practices
4. Pest and Disease Outbreak and Control Measurement
5. Climate-Smart Agriculture

Outcomes:

At the end of the FARM School sessions, the participants are able to:

- Understanding the outputs of the SESAME Web Tool and its practical usage.
- Appreciate the importance of collective and team efforts in addressing climate-related issues in their farming operations;
- Identify climate-related issues and constraints with respect to their annual farming operations;
- Familiarize themselves on various climate information/element and other climate-related terminologies including instruments;
- Fabricate simple weather instrument (i.e. simple rain gauge from recycled materials) and calibrate it with respect to standard instrument data;
- Understand the importance of climate information and forecasts in their annual farming operations and in addressing future threats such as extreme events and climate change;
- Understand the concept and make simple analysis and interpretation of historical climate information through field water balance;
- Develop location-specific and cost-effective strategies to mitigate the impacts of extreme climate events;
- Assess the economic value of climate information and forecasts; and
- Disseminate new knowledge and learning to facilitate broader adoption.

Agenda

FARM School- Training of Trainers (ToT)

Office of Dept. of Agriculture, Peradeniya, Sri Lanka

08th -11th July 2019

Day 1 : 08 th July 2019		
Time		Coordination
09.00 -09.30	Registration of Participants	
09.30-10.20	Opening of the Event: Welcome Remarks:	

	Opening Remarks: Group Photo	
Tea Break (10.20-10.30)		
10.30-12.30	Session 1: Introduction <ul style="list-style-type: none"> • Introduction FARM School concept and Modules • Interactive way of introduction of participants (through climate pictures) • Identify and map climate related problem 	RIMES
Lunch Break (12.30 - 13.30)		
13.30-15.30	Session 2: Knowing Elements of Weather and Climate <ul style="list-style-type: none"> • Know about the elements of climate and weather, and differences between climate and weather Game1: Identifying weather/climate elements and non-weather/climate elements Game 2: Distinguishing between weather and climate • Get to know the sources of information about weather, climate and their importance • Weather/Climate scale products available from DoM, Sri Lanka 	RIMES and DoM
Day 2: 09th July 2019		
Tea Break (10.00 – 10.30)		
09.00-10.30	Session 3: Introduction to Weather/Climate Measuring Instruments <ul style="list-style-type: none"> • Introduction to Weather/Climate Measuring Instruments and further explanation on their uses to measure weather/climate variables • Interactive session on identification of weather measuring instrument and their uses (using pictures) • Field Visit to Agro-Met Stations (visiting Agro-met station early morning on the 9th July, if possible) 	DoM and RIMES
10.30 -11.30	Session 4: Understanding Weather and Seasonal Climate Forecasts produced by SESAME Web Tool <ul style="list-style-type: none"> • Understanding weather and climate forecasts and their importance to farming activities • Understanding the probability of forecast accuracy in relation to agriculture activities • Understanding practical application of Agro-Met Advisory produced using SESAME web Tool 	DoM and RIMES
11.30 -12.30	Session 5: Field Inputs Balance Concept <ul style="list-style-type: none"> • Field water balance concept and its use to assess irrigation water requirement and minimize flood risks • Understanding the irrigation scheduling according to weather forecast • Understanding filtration capacity of different soil in the fields 	NRMC and RIMES

Lunch Break 12.30- 13.30		
13.30-16.30	Session 6: Understanding the Effect of Climate Factors on insects and pest. <ul style="list-style-type: none"> • Understand the Agro ecosystem and its analysis • Field observation on weather, plant and pest & diseases and growth conditions of plants(Field Visit) • Weather component affecting the growth and activities of insects • Relationship between weather and occurrence of pests/diseases 	NRMC and RIMES (Presentation from Entomologists, if available)
Day 3 : 10th July 2019 Tea Break (10.00- 10.30)		
09.00 - 11.30	Session 7: Understanding Agro-Ecosystem Analysis (GroupWise Presentation) <ul style="list-style-type: none"> • Identification of the insects and pest collected during the field visit. • Classification of the insects as beneficial and harmful for crops • Relationship between weather and occurrence of pests/diseases • Eco friendly management of the pest, diseases 	RIMES and NRMC
11:30 – 12:30	Session 8: How to Use Climate Information for Setting Up Planting Strategies <ul style="list-style-type: none"> • Explanation on preparation of crop-calendar • Benefits of the preparation of crop-calendar • Practical hand on training on crop-calendar • Group wise presentation and explanation on crop calendar 	RIMES
Lunch Break (12.30 – 13.30)		
13.30 - 16.30	Session 09: Discussion on Drought Control Program Using Low Cost and Location-Specific Technologies to Address Extreme Climate Events <ul style="list-style-type: none"> • Understanding various technologies that could be implemented to mitigate the impact of extreme climate events. • How low cost and location specific technology could be explored • Group Discussion 	NRMC and RIMES (Presentations on smart local techniques and how climate information add value)
Day 4 : 11th July 2019 Tea Break (10.00- 10.30)		
09:00 -11.30	Session 10: Assessing Economic Value of Climate Information <ul style="list-style-type: none"> • Calculation of the forecast value depending on the weather forecast provided to the groups • Understanding the economic benefits of forecast during farm activities 	RIMES and DoM
11.30-12.30	Session 11: Review and Feedback from participants <ul style="list-style-type: none"> • Feedback from the participants on FARM-ToT process 	

	Planning for Farmers Training <ul style="list-style-type: none"> • Discussion on the training curriculum for Farmer's Training • Schedule and finalizing locations • Logistic and other arrangements • Training material requirements 	RIMES, DoM, NRMC
Lunch Break (12.30 - 13.30)		
13.30-16.00	Valedictory Session	