

Alerting farmers to adapt - an SMS alert system in Sundarbans

In changing climate conditions, it is the 'unpredictability' which makes the farmers most vulnerable. The KVK Scientists in Sunderbans are trying to help them by making certain predictions based on meteorological data. By this, farmers are not only able to foresee but also prepare themselves for facing such situations.

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Sundarbans, the largest delta of the World, belongs to CDR System which implies Complex Diversified and Risk prone area. It is characterized by salinity in both soil and water, heavy and prolonged rain (1700-1800 mm/yr.) along with poor drainage system accompanied with natural calamities like cyclone, tidal ingressions, embankment breaches, flood etc. The delta lies in close vicinity to the Bay of Bengal, with an altitude of below 5 mt from mean sea level. This poses immense threat of submergence of vast areas even with slightest rise in the water level.

About 70% of the total land is low lying in nature where more than 3 ft. water gets stagnated during rainy season. The soil is clay-loam with increased salinity mainly during rabi-summer season. The lack of drainage system again is one of the most important constraints in the region. During rainy season, paddy is the main crop. In the upland situation, some vegetables like okra, bitter gourd, tomato, bean etc. are grown. During rabi-summer season, cotton, green gram are grown in the partially irrigated low land situation. In irrigated uplands, vegetables like bean, tomato, cole crops and brinjal are grown. Though agriculture is the mainstay, animal husbandry and fisheries also play a pivotal role in the rural economy.

Impacts of climate change are being noticed. Disease and pest problems are increasing by the day, affecting crop production. It also increases the expenditure in terms of cost involvement to get the optimum productivity. The rainfall intensity was also comparatively less in Sundarbans this year, compared to the actual rain fall received in earlier years. It is therefore essential to analyse the critical climate change situation at regional level and develop livelihood strategies, based on the agro-ecological region.

The Ramkrishna Ashram Krishi Vigyan Kendra (RAKVK), Nimpith, situated in South 24-Parganas district of West Bengal, has setup a Disease-cum-Weather Forecasting Unit. Here, the different sensors help in understanding the prevalent climatic condition of a particular zone. After collecting, analyzing and verifying the data with the manual meteorological unit, the KVK scientists develop the crop protection measures for a particular disease or pest of a particular crop which may flare up in the coming days. The multi-disciplinary team of scientists and their good linkages with the farmers, help in developing both scientific measures as well as ITKs.

Alerting farmers through SMS

RAKVK has developed a unique method of SMS alert system. Farmers are informed about the impending pest or disease attack and the remedial measures for crops, animals and fish. The messages

are conveyed to the farmers over their mobile phones through SMS. Some of the types of alerts conveyed pertain to precautionary measures to be taken in case of high *Helicoverpa* infestation in cotton, green gram and sunflower crops; leaf-curl disease in chilli and tomato; protecting the freshwater prawn against huge foggy condition; better utilization of water in sunflower cultivation; weather related disease in animal and birds etc.

There is no fixed geographical boundary of SMS alert system. The farmers can receive the SMS from any corner of the State of West Bengal and can get access to the message. However, as the institute is situated in South 24-Parganas district, the technological messages are more relevant to the farmers of this district and neighboring district which has more or less same agro-ecological conditions.

A large database of farmers is maintained in the KVK. There is no fixed registration procedure but any one interested in getting information can add their mobile number to the database. Generally, the mobile numbers from farmers are collected when they come to KVK for any training programme. The project has no provision to provide mobile phones to the farmers. As majority of the farmers own mobile phones, they can make use of this system by including themselves in the database.

Farmers are expressing interest in knowing more information. They are already approaching the KVK after getting the short message in their mobile. While sending the message, a specific phone number of the KVK expert who can provide more details is also incorporated. Based on this farmers have been visiting KVK for getting more information on a specific problem.

It has also been noted that farmers who receive information through SMS are spreading the information to their friends and neighbors. This way, the message is spreading to those farmers who do not own a mobile phone.

The same message is also uploaded onto the KVK website. Though majority of the farmers are not able to access the website, yet a few progressive farmers are making use of it. Moreover, development agents may receive information from the website and share with their farmers. The number of hits on the website indicates that it is being increasingly used.

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