

Ran VulhtuteThian: The Smart Extension Services through Smart Phone in Picturesque Hills of Mizoram

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ABSTRACT

Agriculture is the prime source of livelihood for the majority (85%) of rural population in North-Eastern Region (NER). Apart from agriculture, livestock plays a crucial role in the lives of NER-citizens and are an important component of integrated farming system. Livestock are alternative source of income. Livestock especially pigs and poultry are important in rural economy as crops cultivation is difficult in steep hilly terrain of the state of Mizoram. They need information about farming practices, policy initiatives, best practices of other farmers, and information on market intelligence. There is a need for specific extension strategy at village level to improve the economy and living standards of farming community. The Project entitled **Mobile Based Agro-Advisory System in Mizoram** was taken up with the help of Ministry of Electronics and Information Technology (Meit-Y), Government of India, and implemented in collaboration with Digital India Corporation (DIC), New Delhi and College of Veterinary Sciences & Animal Husbandry, Central Agricultural University (I), Selesih, Aizawl, Mizoram for a period of three years (2019-22) to empower the farmers by providing 'right information at right time'. The project was given a local name "Ran VulhtuteThian" The paper reports the process and achievements of the initiative.

Introduction

The farmers are facing hardships in the farming activities. The major factors are no access to new technologies, inadequate and timely unavailability of critical inputs and services. The State is a hilly area and veterinary hospitals are situated far away from remote villages. It is quite difficult to reach in time if any problem arises in the farm. There is a need to make all out efforts to help these farmers to enable them to make the optimum use of new technologies. Farmers' needs are multi-faceted and they are not limited to technology alone. Therefore, timely availability of information is critical component in the

development of agriculture in NER. There is a need for specific extension strategy at village level to improve the economy and living standards of farming community. Mobile based advisory in local language was perceived as one of the alternatives which may farmers to take adequate measures on time. The project "Ran VulhtuteThian Ran" was taken up with external funding. Vulhtute means Livestock-animal farming and thian means-friend, i.e. Friend of livestock-animal farming. The project was launched in September, 2019 and aimed at empowering the farmers in taking up informed decision to enhance their livelihood in implementing Mobile Based Agro-Advisory System. The process and achievements of the project are follows:

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Establishment of ICT Lab

A state-of-the-art ICT lab was established in the College with Level-1 Experts from Animal Husbandry and Agri/Horti disciplines for rendering the agro-advisory services in local language (Mizo) in December, 2019. A Toll-Free help-line in Local Language (1800-102-3141) was launched for the farmers. Faculty members from the University, Subject Matter Specialists from KVK, and Veterinary Officers from State Department of Animal Husbandry and Veterinary, Government of Mizoram, acted as Level-2 Experts for providing farm advisories to the farmers as and when required. In the Lab, three Agro-associates (Level-I) are providing expert advices to the farmers' call, two Field managers assisted in content development, collection of information, and organization of awareness camps. As the system and methods were new to the farming community, 16-Field Coordinators were placed in different parts of the State to motivate the farmers and providing guidance to them in registering themselves in the system to get the Advisory. The 'Interactive Information Dissemination System (IIDS)' available with Digital India Corporation (DIC), New Delhi, was used as software platform for *Ran VulhtuteThian*. This IIDS is an integrated model largely integrating Toll free IVRS, Smart Phone Application and Interactive Portal. IIDS is a pull and push based system where livestock and agriculture related information can be pulled by the farmers using the mobile phones.

Registration of farmers

Each farmer is required to register himself/ herself to get the desired services by providing their details; for animal husbandry advisory services, they needed to provide their livestock details. Each farmer gets a unique ID number and all the transactions are recorded in the database. About 5000 farmers are registered from 9 districts covering 25 blocks and 166 villages. It is interesting to note that nearly half of the farmers registered are female.

Registration of Farm Animals

The history of animals was essential to provide the best treatment. The history contains the basic information about the animal. A protocol was developed to register the farm and pet animals separately (Pig, Dog, and Cattle) and a record book was maintained for each animal. Whenever the farmer calls for any problem related to the particular livestock/animals, he/she will be asked to identify the animal with identification number and the expert accordingly comes to know the details of the animal profile from the system.

Awareness and Training Programs

In order to make the people aware of the project activities and encourage them to avail of benefits of the project to the

maximum extent, awareness camps and need-based training programs were organized. Animal healthcare camps were organized in different registered villages for the benefits of farmers.

Delivery of Farm Advices (Pull Based)

To get the advice or information service, farmers call to the lab from their registered mobile number. Farmer's queries are answered by the experts from advisory labs who also record and tag the different types of queries for creation of IVR database. If the expert at the lab is unable to answer the query, he/she refers the query to the senior Subject Matter Specialist (SMS) at KVK centre of the University and the specialist concerned answers the query. It is observed that an overwhelming majority (93%) of queries were on Healthcare Management aspects of animals (Fig.1). On agriculture, it is recorded that 66.00 percent of farm advisories were given on pest and disease management (Fig.2).

Delivery of Information Services (Push Based)

The system also aggregated location specific data from various reliable information sources (Input Dealers, Financial institutions, and IMD etc.) and disseminated it to the registered users depending on the user's specified time and mode [as mentioned at the time of their registration]. Through the system, 68.00 percent messages were sent to farmers on advisories and informative messages (Fig 3).

Development of Content

Location-specific contents on animal husbandry were developed and customized by the multidisciplinary team of experts from the college as per the requirement of the farmers. Small Videos, Voice Messages, and SMS were prepared for the farming community and pushed to the farmers for their information and use.

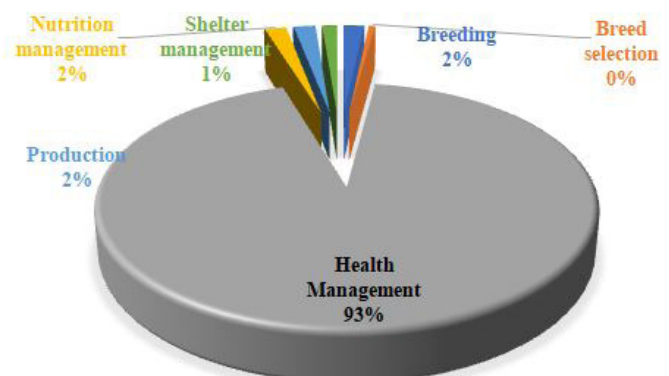


Fig. 1 Livestock Problem-wise Advisory given

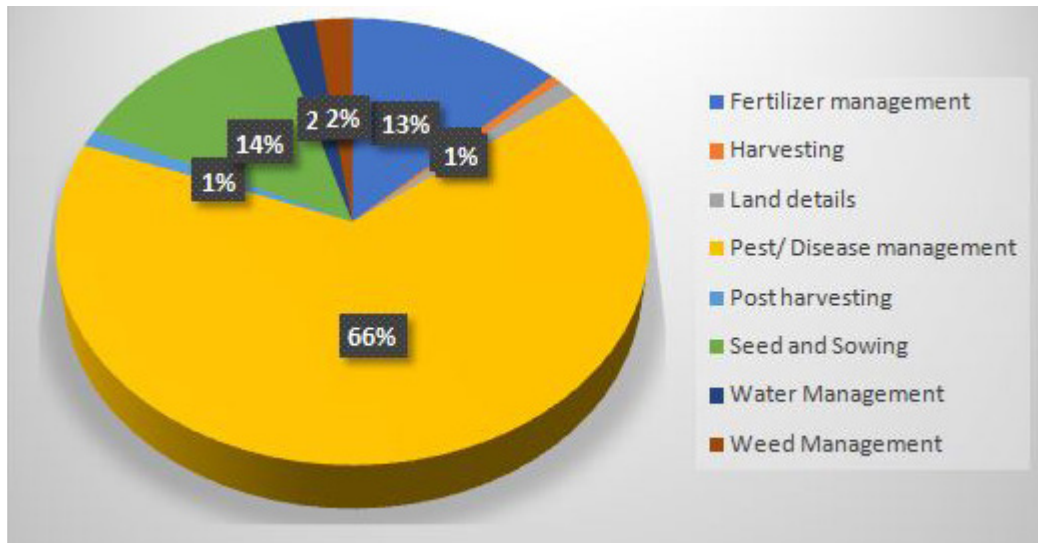


Fig. 2 Percentage of Agricultural Advisories

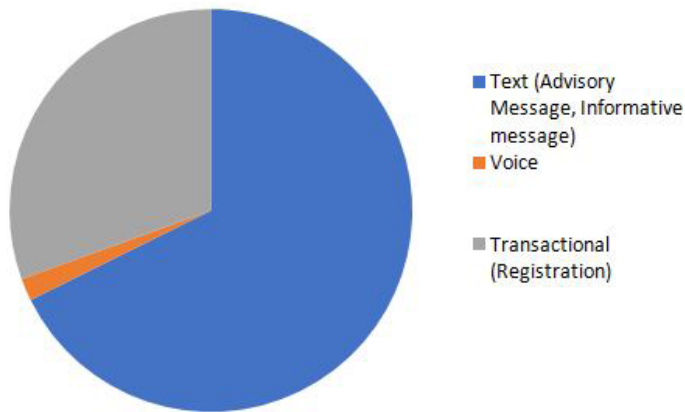


Fig. 3 Category-wise Message pushed to registered Farmers

Team Field Visit

Teams of experts from the College frequently visit fields in different villages of the project areas. The purpose of such visits is to spread awareness of the project, gain acquaintances with the farmers, assess their problems and needs, encouraging them to make queries, and demonstrations of Toll-Free Number etc. Beside this, the teams also visit farmers to treat their livestock and pet animals, render advices on management of livestock, and help the farmers in procuring bio-organic formulation etc.

Outcome of the project:

- a. Empowerment of agricultural extension functionaries –
 - Establishment of ICT Based Agro-Advisory Lab
 - Train experts to handle IT based advisory system
- b. Empowerment of Farmers with Increased awareness and confidence level residing in remote areas:
 - Train Field Extension Workers and Progressive Farmers on different aspects of Livestock
 - Need Based Content Development in local language (Mizo)
 - Personalized agro-advisory services on their fingertips through Toll-Free & Mobile App
 - Toll-Free IVRS in Local Language: To interact directly with the respective Subject Matter Specialist
 - At least 10,000 farmers benefited indirectly
- c. Robust Mobile-based Veterinary Extension Model
 - To suit the local requirement of Livestock Farmers of Mizoram
 - ‘Any Time Any Where’ Mobile Application for ‘Subject Matter Specialists’ to access the client’s query with their profiles and cater to the needs of farmers call.
 - SMS: Need Based Text & Voice SMS based on the subscriptions
 - Farm Database of 5000+ farmers with farms and animals.
 - App for the field extension workers to register the farmers as well as to raise multimedia queries on behalf of farmers.
- d. Call Monitoring Dashboard & IT Help Desk
 - Development of a centralized monitoring system to oversee the progress and transactions made on the system to overcome with the various issues being faced by the implementing units.
 - Centralized application to monitor the entire implementation to follow-up with the users (experts and farmers). This helps in improving the services and building confidence of the users in the system.
 - A tracking module developed for monitoring & managing the technical issues and problems raised by various implementing agencies.

Activities during COVID-19 pandemic

Nearly, 90% of India's agricultural sector is made up of small and marginal farmers. These farmers are particularly vulnerable to economic shocks including those sparked by COVID-19 lockdowns. COVID-19-related lockdown exacerbated the vulnerabilities of small and marginal farmers by disrupting the supply of agricultural inputs, the harvesting, and marketing of outputs. The activities under *Ran Vulhtute Thian* came to give a big relief to the needy farmers who were affected by the lockdown and other restrictions. Activities of the project during lock-down period are mentioned below:

- (a) Registered farmers were advised as per their requirements throughout the lockdown period. Advisories were given to them on livestock and agri/horticultural crops as per their requirements
- (b) Pushed need-based Text Messages and Voice Mail Services on Livestock diseases and animal healthcare management, Disease and Pest Management on Agriculture and Horticulture to the registered farmers of different districts of Mizoram.
- (c) Continuous proactive calls to the farmers on regular basis for awareness and sensitization about the project and COVID-19 pandemic.
- (d) Text & voice messages on National and State agro-advisories to the registered farmers
- (e) Link to "Recommend Aarogya Setu App to Fight against COVID 19" for installing by the farmers in their mobile phone pushed as text and voice messages to all registered farmers under the project.
- (f) Text & voice messages sent about the "Kisan Rath" Mobile App to facilitate transportation of food grains and perishables.
- (g) Link to 'Recommend CAU Advisories' for the farmers in their mobile phone pushed as text and voice messages to all registered farmers under the project in six districts of Mizoram.

Lesson learned and the way forward

Poor livestock farmers are generally staying far away from the Veterinary Hospitals. When their livestock are sick; it is very difficult for them to approach the veterinarian for treatment.

But through the *Ran Vulhtute Thian* project, the farmers are getting complete advice and suggestions and they can just buy the medicines from the nearby dispensary shops. It is completely a new approach for the farmers of Mizoram State. They were skeptical initially about the benefits of the project. It was difficult to convince and motivate them to get registered and make queries. It required a lot of efforts on the part of the team to motivate them. Experts should be very attentive in listening to the queries of the farmers and should collect as much as information including photographs. Advices provided required to be authentic and meet the location specific needs. During the process of implementation, various technical as well as socio-psychological issues cropped up in the way of raising queries and providing advisory services which will help to make the project user-friendly. Local leaders mainly Village Council Office bearers and local NGO like YMA need to be informed and they should be taken into confidence before entering a village to make the project effective. Once some of the farmers in the village get beneficial information, it creates ripple effect on other farmers to register and make calls. Regular teams' field visits are important to build rapport, win farmers trust, and assess their needs.

Problems faced during implementation

Some of the remote villages have poor road connectivity especially during rainy season where the team had to travel by foot for Registration, Awareness, and Training and by the time team reaches the site most of the farmers would have already gone to their field or to some other places. Unstable Internet connectivity due to the topography of the area in villages is a problem. COVID-19 pandemic severely affected the implementation of the project activities. Project teams were not able to visit the farmers for registration due to prolonged lockdown and fear among the villagers of outside visitors. Due to this reason, awareness camps, training programs, and Animal Healthcare camps could not be organized during this period.

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