

RESILIENCE



NIBIO
NORWEGIAN INSTITUTE OF
BIOECONOMY RESEARCH



BUILDING RESILIENCE AMONG THE SMALL HOLDERS THROUGH DIGITAL TOOLS

A Learning Module



Prepared by
M S Swaminathan Research Foundation



Norwegian Embassy

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ROLE OF DIGITAL TOOLS IN BUILDING RESILIENCE

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FOREWORD

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ACKNOWLEDGEMENT

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ICT SUPPORT TOWARDS BUILDING RESILIENCE OF RURAL COMMUNITIES - A LEARNING MODULE



“To promote equitable access, knowledge centres were established at village level as Village Knowledge Centres (VKCs)”



A felt need of farmers is timely availability of information on technologies, monsoon behaviour and market opportunities. Regular extension services usually do not reach the farmer at the right time. Deployment of digital tools by harnessing the advancement in the Information and Communication Technologies (ICTs) provides a platform to offer demand based, timely, locale specific and dynamic information services to the farming community to build their resilience capacity to combat climate risks. Inadequate and imperfect information leads to poor decisions, poor farm performance, yield and income loss. Systems to provide good and up to date information and knowledge to the farm women and men are therefore extremely crucial for improving the livelihoods of farm families by enhancing their farm productivity as well as the performance in the agriculture sector.

In this context, M S Swaminathan Research Foundation (MSSRF), based on its pro-poor, pro-women and pro-nature orientation is committed to help the farmer in overcoming the information gap by taking the best available technologies to farm families. This has helped in the area of both production and post harvest management.



“

Information and communication technologies (ICTs) are appropriated effectively to support agriculture development from seed to market

”



Information and communication technologies (ICTs) are appropriated effectively to support agriculture development from seed to market. Farmers can access accurate value added local specific information on climate smart agricultural technologies, good agriculture practices (GAP), new varieties, post-harvest technologies, weather advisories, entitlement schemes, market prices and demand etc. are communicated to the desired users through ICT platform. Required information, advisories and necessary knowledge delivered through various innovative digital technologies facilitate farm women and men to take informed decisions; awareness enables them to stay up to date on the latest agricultural practices and technologies. Farm women and men are able to closely monitor crop cultivation, optimise use of agrochemicals, natural resources and adapt to changing climatic

“

The empowerment of women farmers with knowledge and information at the right time will help to improve the productivity and profitability of farming

”



condition. Awareness and application of suitable information/technology have resulted in increased efficiency and cost reduction.

The great advantage of ICT is that it is gender neutral. With necessary capacity building women are able to master the technology quickly. Women farmers use cutting-edge technologies like tablet-based android applications proficiently for diagnosing plant health issues in diverse crops through plant clinic initiative and provide appropriate and environmentally and economically viable solutions to the fellow farmers. The gender needs of information can also be taken into account since women play a leading role in the post-harvest management of crops and animal husbandry. Engendering technology development and transfer becomes much more possible in the case of ICT, since women play such a key role in the agriculture. The empowerment of women farmers with knowledge and information at the right time will help to improve the productivity and profitability of farming.

During the last 20 years, great changes have taken place in technology and in partnerships between the public and private sectors. Government has also promoted several initiatives particularly with reference to the information empowerment of Panchayati Raj institutions.



#good agriculture practices

#market prices

#new varieties

#weather advisories

Voice Call

Audio & Video
Conferences

Video Based Learning

Helpline Service

Phone in Programme
& Whatsapp

Plant
Clinic

post-harvest
technologies

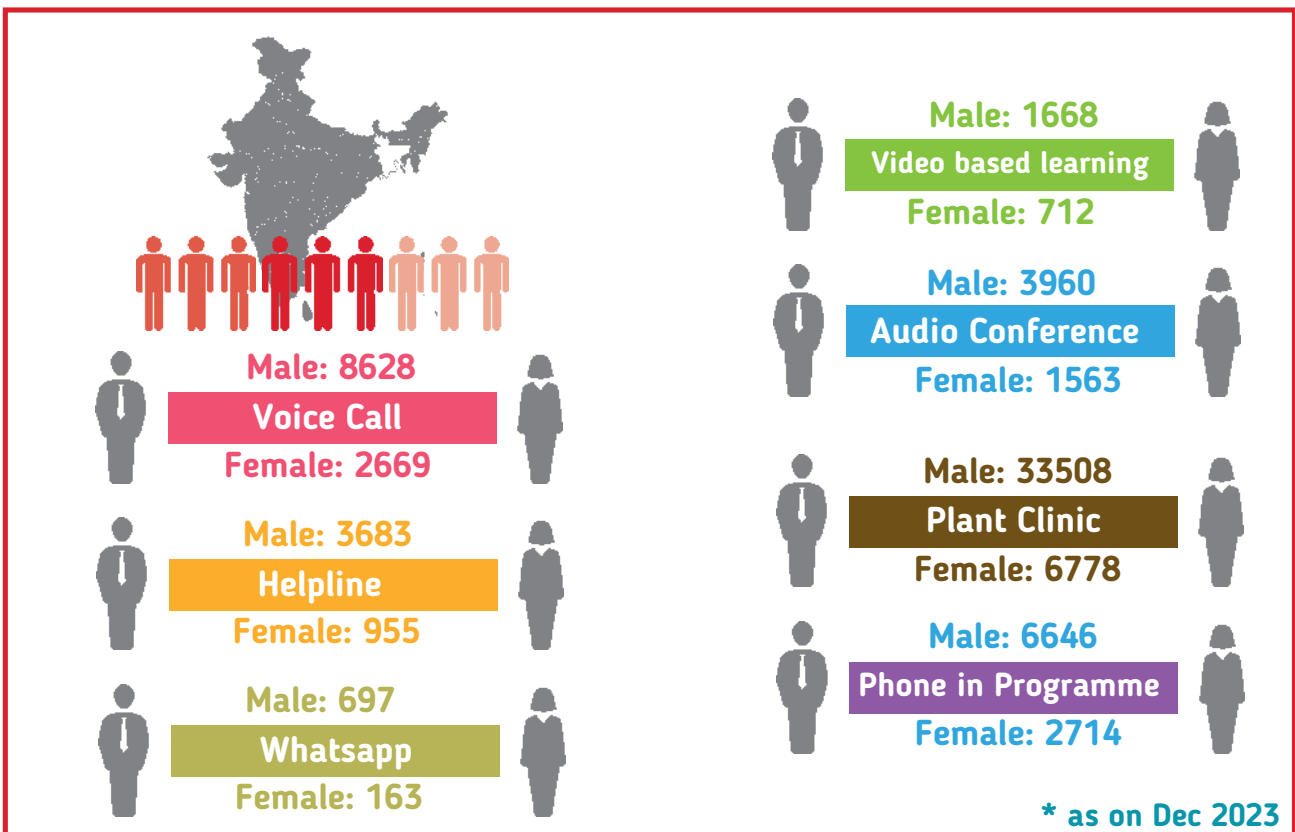
#demand

#pest & disease management

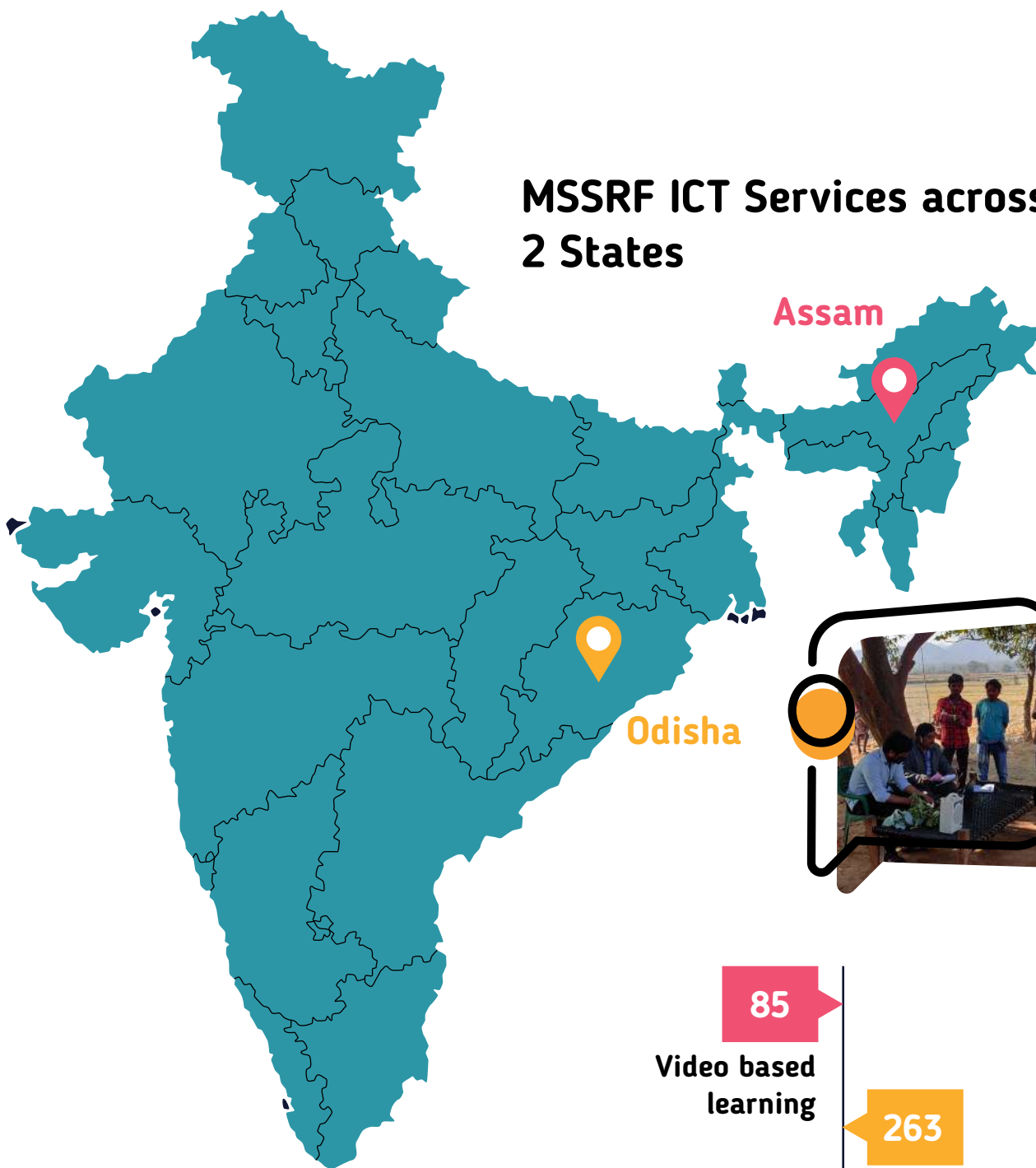
#entitlement schemes



OVERALL REACH ON USING MSSRF ICT



MSSRF ICT Services across 2 States

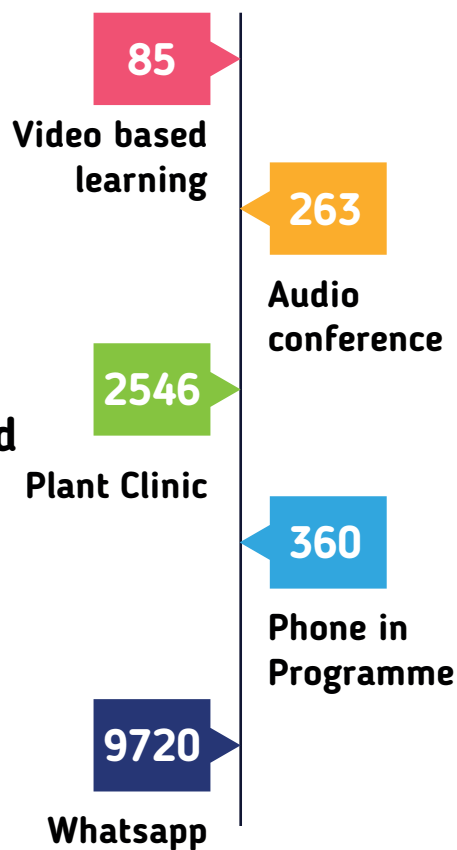


Assam

Odisha



No of programmes conducted



* as on Dec 2023

ICT TOOLS EMPLOYED BY MSSRF

This learning module explains standard operating procedure used by MSSRF for different ICTs tools such as Voice call, Helpline service, Video based learning, Audio & video conferences, Plant clinic, Phone in Programme and WhatsApp in providing agricultural and allied sectors related advisories/services to the farming community. Farmers including women from across the states of Tamil Nadu, Assam, Odisha and Union Territory of Puducherry receive advisories.

There are some common procedures adopted prior to introducing and disseminating timely and appropriate information (such as on agriculture, animal husbandry, fisheries, health and nutrition, government entitlement, etc.) through any particular tool to the rural farming women and men including agricultural labourers. In addition to the common procedures followed there are also few procedures that are specific to a particular tool such as Voice call or Phone-in-programme or other tools.

Common procedure followed for the ICT tools adopted by MSSRF

1 Gendered need assessment

Need assessment is the most crucial exercise to understand the requirement of the farmers to provide demand-based contents through any of the ICT tool in an efficient manner. Need assessment is generally carried out using the methods of Participatory Rural Appraisal (PRA) and focus group discussions (FGD) with the help of experienced facilitators. This exercise is conducted in a common place convenient to both men and women, and the participants are encouraged to express their needs in agriculture and allied subjects. Such assessment is generally carried out prior to the cropping season such as kharif, rabi and summer so as to help the women and men participants to recollect easily the issues they faced during the previous cropping season. The outcome of the need assessment is carefully compiled and segregated theme-wise by the concerned professionals. The needs are then grouped subject-wise, month-wise, week-wise and possibly season-wise also. The collected needs are then verified with the participants at the end of the session. The content is disseminated based on the prioritized needs.

2 Content collection and validation

Providing relevant, authentic and validated content is very important. For ensuring this, it is important to collect the content based on cropping season and prioritized needs of the users. The knowledge workers, MSSRF staff, champion farmers, volunteers, and others gather the details of needs from the women and men farmers on regular basis. After organizing the relevant content, it is necessary to validate the content for dissemination with the support of subject experts.

Identifying experts to validate the content

Identification of appropriate experts is a crucial task. The experts should have the expertise in the subject and be willing to provide support and validate the content for dissemination. The expert panel consists of agriculture scientists from Odisha University of Agriculture and Technology (OUAT) Krishi Vigyan Kendras (KVK), Departments of Agriculture and Animal Husbandry and other related institutions.

3 Content planning

Content planning is another important task to be kept in mind for dissemination of crop or allied activity advisories. It is always better to plan day-wise content for a week. If there is any other important information to be disseminated on a particular day that day's content can be changed. Content delivery or dissemination is planned as per the geographical preference, cropping pattern, crop phase, endemic and epidemic outbreak, government forecasts on pest surveillance, government schemes, insurance, etc. The content should be crisp for audio and voice call advisories. It should have four segments- issue, prevalence, advisory and availability of input. Every word is properly uttered and there is no place for unnecessary explanation. At the end of the message, a helpline number should be given for further clarifications.

4 Documentation of farmers' feedback

Farm women and men's feedback is very important to understand their views about the advisories received by them through different tools of ICT so that mid-course corrections can be done to ensure quality in all aspects. Feedback of the usefulness of the advisories disseminated through using different digital tools, extent of usage, application problems and also listening difficulties, voice disturbances, friendliness of the voice, time of delivering in the case of audio and video calls and other relevant details should be gathered to carry out mid-course corrections based on farmers or users feedback.

5 Documentation of case studies and success stories

Documentation of case studies and success stories is essential aspect of all the tools used for delivering information. The main purpose is to provide real-time and need-based advisories or contents to the farming community. Hence it is necessary to understand the usefulness of the content or advisory received by farmers. In order to understand the outcome and impact, it is necessary to identify farm women and men and document their experiences as case studies and success stories. Dissemination and sharing of case studies or success stories will help in knowing the experiences of a particular person in applying the advisories and the benefits of using such information or technology. This will motivate other farmers to receive the advisories and apply them in their respective fields. Case studies and success stories should be documented through proper scientific methods.





Glimpses of actions using digital tools in building resilience





Tool 1: VOICE Call

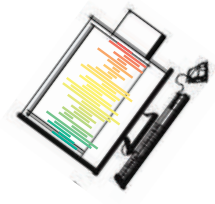
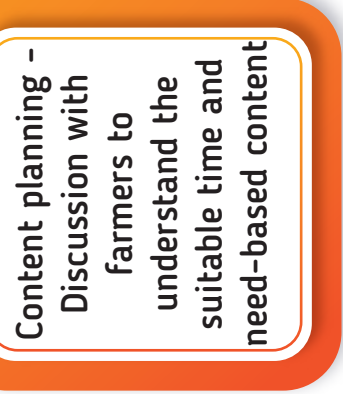
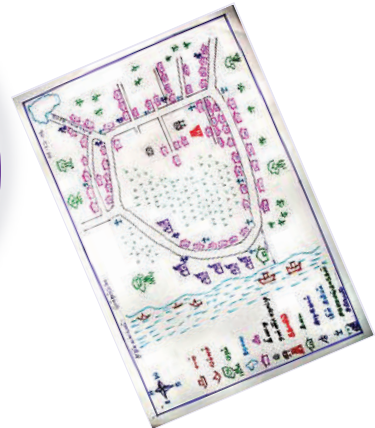
MSSRF is using voice calls to provide advisories on agriculture, animal husbandry, fisheries, health and nutrition, government entitlement, etc

A voice call is a pre-recorded one minute audio message sent to the registered farmer's mobile. Like other calls, the mobile rings, and a person receives a voice call in the form of voice message. MSSRF is using voice calls to provide advisories on agriculture, animal husbandry, fisheries, health and nutrition, government entitlement, etc. The registered farmers can receive the voice call in their respective mobile phone at a time convenient to them. The messages are sent to the farmers based on their demand and the quality is improved based on their feedback.



Among many ICT tools available to provide timely and appropriate services to the farming community and other sections of the population the voice call is one of the farmer-friendly ICT tools.





Process

1 Creating awareness and registration of farmers

It is important to raise awareness among men and women farmers about the voice call services through different modes. It is necessary to obtain the basic information of the farmers and consent to receive the voice call. Any person who expresses his/her willingness and gives acceptance can receive the voice call.

Registration is the first step for farmers to receive the voice call. Those identified should preferably be small and marginal farmers who are willing to receive farm advisories and other need-based information over phone. Before enrolling the farmers, it is important to explain about the working system of the voice call, such as the time of receiving the call and its duration. The farmers can be informed that they would not have to dial any numbers but can directly receive the information on pressing the receive button. It is necessary to get the consent of the farmers to get the voice messages and to inform them that they can discontinue this service at any time if they do not wish to receive the voice call.

2 Data collection

During the enrolment of the farmers, basic data is collected in a structured format. The data includes details of their land-holding, irrigation source, sources from which they are getting advisories at present, the number of animals they possess, cropping system, the type of phone, issues faced by them during the previous cropping season and any preferred themes on which they like to receive the voice call.

3 Converting the content from text to voice

The role of the voice provider is very important for the successful listening of voice calls by the farmers. The conversion from text to voice is done with utmost care. The theme of the content should not be diluted and diverted. The voice provider can edit the content to the required time without compromising on the subject matter. Hence, it is important to identify suitable men/women to convert the text to voice before disseminating the information.

4 Training the staff for voice modulation and other tasks

The voice provider should have creativity and be capable of modulating his/her voice according to the content. The voice artist should pronounce the words and letters very clearly. The presentation should have diversity of style and not like a monologue. The scientific content should reach the

listeners in a simple and interesting way. The dissemination may be through different modes like interaction, announcement or other means for rural people to make sense. Pronunciation is extremely important for maximum reach of the content.

5 Content planning

Content planning is one of the important tasks in a voice call. It is always better to plan the day-wise content for a week. The content should be crisp and the duration should be strictly less than 1 minute. It should have four segments such as issue, prevalence, advisory and availability of input. Every word is to be properly uttered and there is no place for unnecessary explanation. At the end of the voice message, a helpline number should be given for any clarification.

6 Discussion with farmers to understand the suitable time and need-based content

This is another crucial aspect, since the main objective is to achieve the maximum listening rate. Hence a detailed survey and discussion with the farmers is important to understand their convenient time and the types of content they like to receive. This may vary depending on the demography and other activities of the farmers like animal husbandry, festivities, cropping season and market avenues. The dissemination time may vary for different clusters, and proper care should be taken in the timing of delivering the content. A common consent should be obtained from the listeners before delivering the voice calls.

7 Monitoring

The server has an in-built monitoring system. The organisers can find out the receiving status as soon as the voice call is delivered from the server. The server can clearly provide details on varied aspects like picking up the call, listening time, disconnecting in between and so on. These details will be helpful to monitor the receiving status and further actions to be taken for improving the listening rate, if needed.

Equipment required for voice calls

The basic equipments required includes computer/laptop, voice recorder, audio editing software and voice dissemination server and a PRI line (60 lines connected at a time)



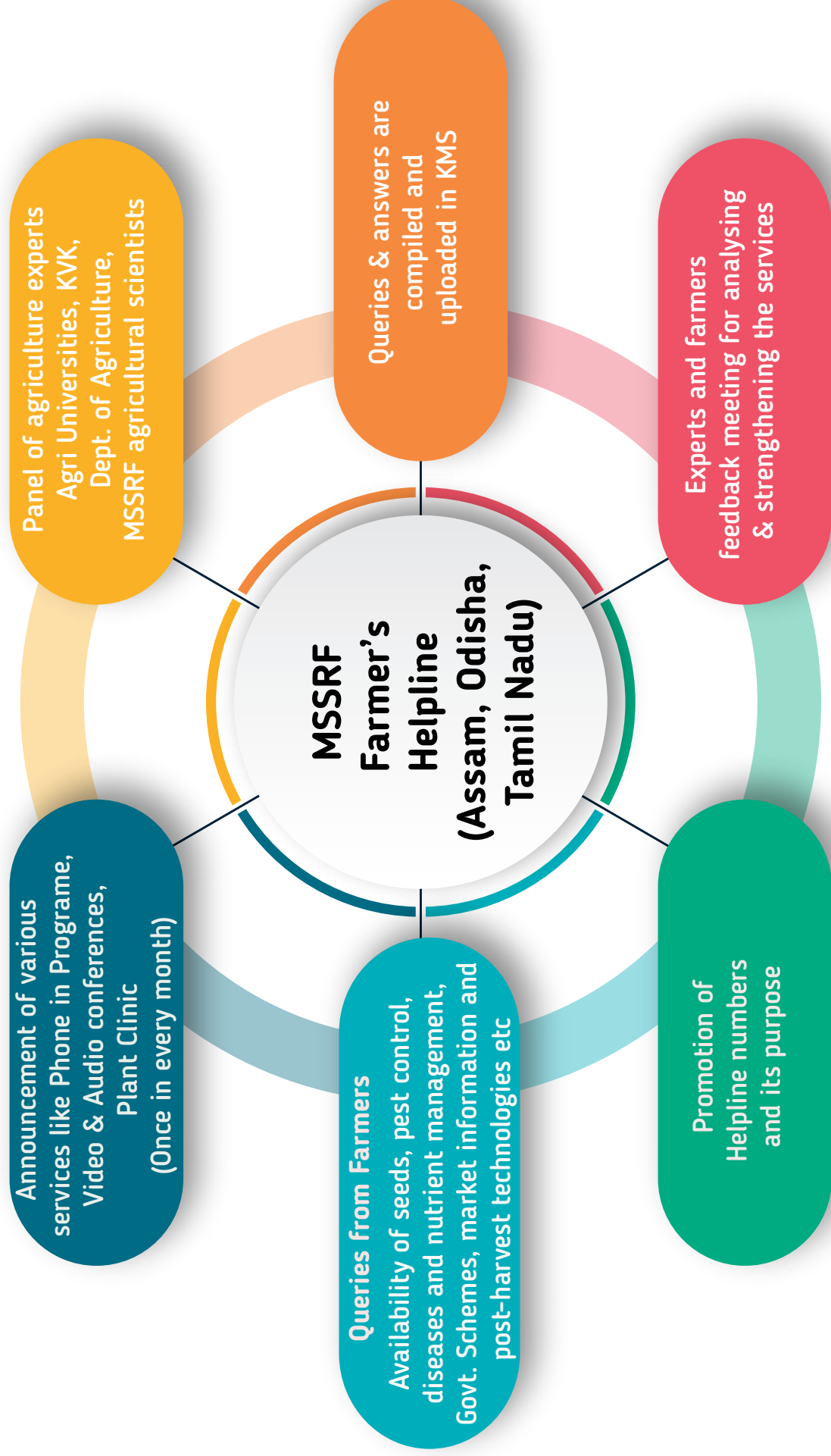
Tool 2: Helpline Services

The Farmers "Helpline" services is one of the key digital tools to address the individual farmer's queries concerning agriculture and other services in time through mobile phone.

The Farmers Helpline service plays a significant role in the lives of the farmers. It is one of the key digital tools to address the individual farmer's queries concerning agriculture and other services in time through mobile phone. This service reaches a large number of audiences in a short span of time compared to the traditional extension approaches. It is important that exclusive staff is allotted to handle helpline calls. A farmer can call helpline number as and when she or he has queries to be addressed in relation to agricultural and allied activities; the farmer is connected by the staff handling helpline service to an appropriate expert to get clarification or crop advisories without going to the extension service centre. Thus, a farmer also saves his/her time, energy and money.

A farmer can call helpline number as and when she or he has queries to be addressed in relation to agricultural and allied activities;





Promotion of helpline numbers

Helpline services are the important platforms in providing information or clarification sought by a farmer; two mobile numbers have to be made available exclusively to cater to their needs. It is important that the farmers are aware of the helpline numbers to get immediate solutions or guidance on timely basis related to their agriculture issues through credible source. Use of Helpline numbers are promoted among the farming community through different modes such as voice messages, hand bills, farmer's interaction meetings, newspapers, Radio including FM and social media. A helpline card like visiting cards is very much useful to popularize the helpline numbers among the farmers and encourage them to use the farmers' helpline service when he or she confronts problem with any aspect of farming. Depending on one's needs he/she is connected to the concerning expert; the guidance or advisories enables them to take suitable and timely steps.

ପ୍ରିୟ କୃଷକ ବନ୍ଧୁ !
କୃଷି ସମ୍ବନ୍ଧୀୟ ତଥ୍ୟର ବାବେ ଯୋଗାଯୋଗ କରବ

HELPLINE

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NATIONAL INSTITUTE OF
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MSSRF
MIDLAND STATES
SARVODAYA SOCIETY OF
RESEARCH & TRAINING

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ପ୍ରୀୟ ଚାଷୀ ଭାଇ ଭଉଣୀ ମାନେ ଆପଣଙ୍କ ଆବଶ୍ୟକ ସୂଚନା ପାଇଁ ଏହି ନମ୍ବରରେ ଯୋଗାଯୋଗ କରନ୍ତୁ ।

HELPLINE ଚାଷୀଙ୍କ ହେଲପ୍ ଲାଇନ୍ ନଂ

RESILIENCE

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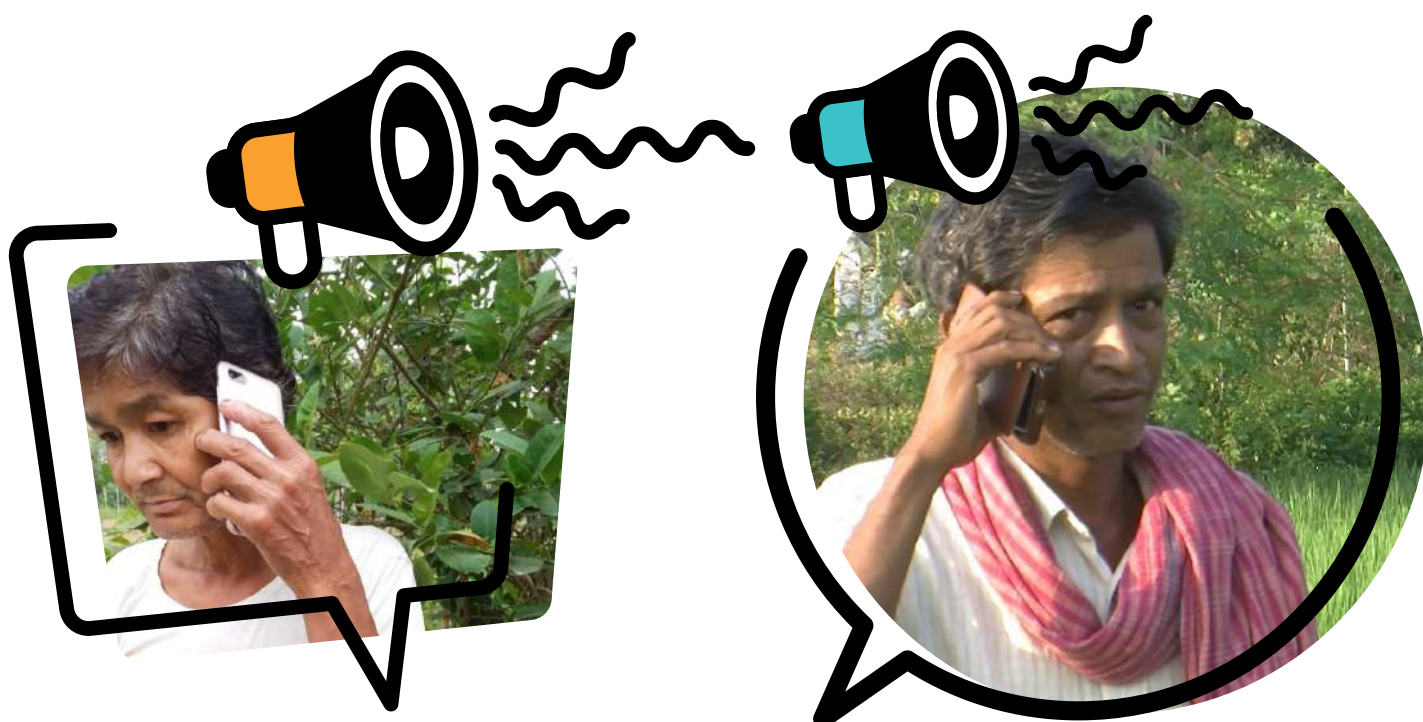
Formation of expert panel

An expert panel has been constituted comprising a panel of agriculture experts from Agricultural Universities, Krishi Vigyan Kendra (KVK), Department of Agriculture and MSSRF agricultural scientists to address the queries. The expert panel includes Entomologists, Plant pathologists, Agronomists, Agriculture Extension and Soil Scientists. Farmers can call helpline number round the clock to clarify anything related to agriculture such as availability of seeds, pest control, diseases and nutrient management, Govt. Schemes, marketing information and post-harvest technologies etc. The farmers are connected with experts through conference call and get their queries rectified. While selecting the specialists, it is important to identify the major crops in the working area and the issues on which the questions are likely to be asked. These specialists should be experts in their respective fields in such a way that they could provide suitable explanations to most of the questions that are likely to be asked by the farmers. It is advisable to select general specialists who would deal with various subjects that are likely to arise. The specialists should ideally be located within the city. They should have good communication skills and should be able to handle the local language. It is important that experts have interest and adopt farmers' friendly approach in providing clarifications or details to a query or a concern of a farmer.

The information provided by the experts helps the farmers to make informed decisions on matters such as the right crop and variety to plant, correct inputs to be applied to prevent and manage pest/disease attack, and right practices to follow so as to manage their farms successfully achieving the best productivity results and returns. The questions raised by the callers along with the answers are compiled and uploaded in Knowledge Management System (KMS).

Farmers and experts feedback meeting

Periodical meeting are conducted where farmers are encouraged to share their views and areas of improvement. In the same way, the experts also share their feedback. Based on the feedback of the farmers and also the experts midterm corrections are carried out; this helps in improving and strengthening the implementation part.



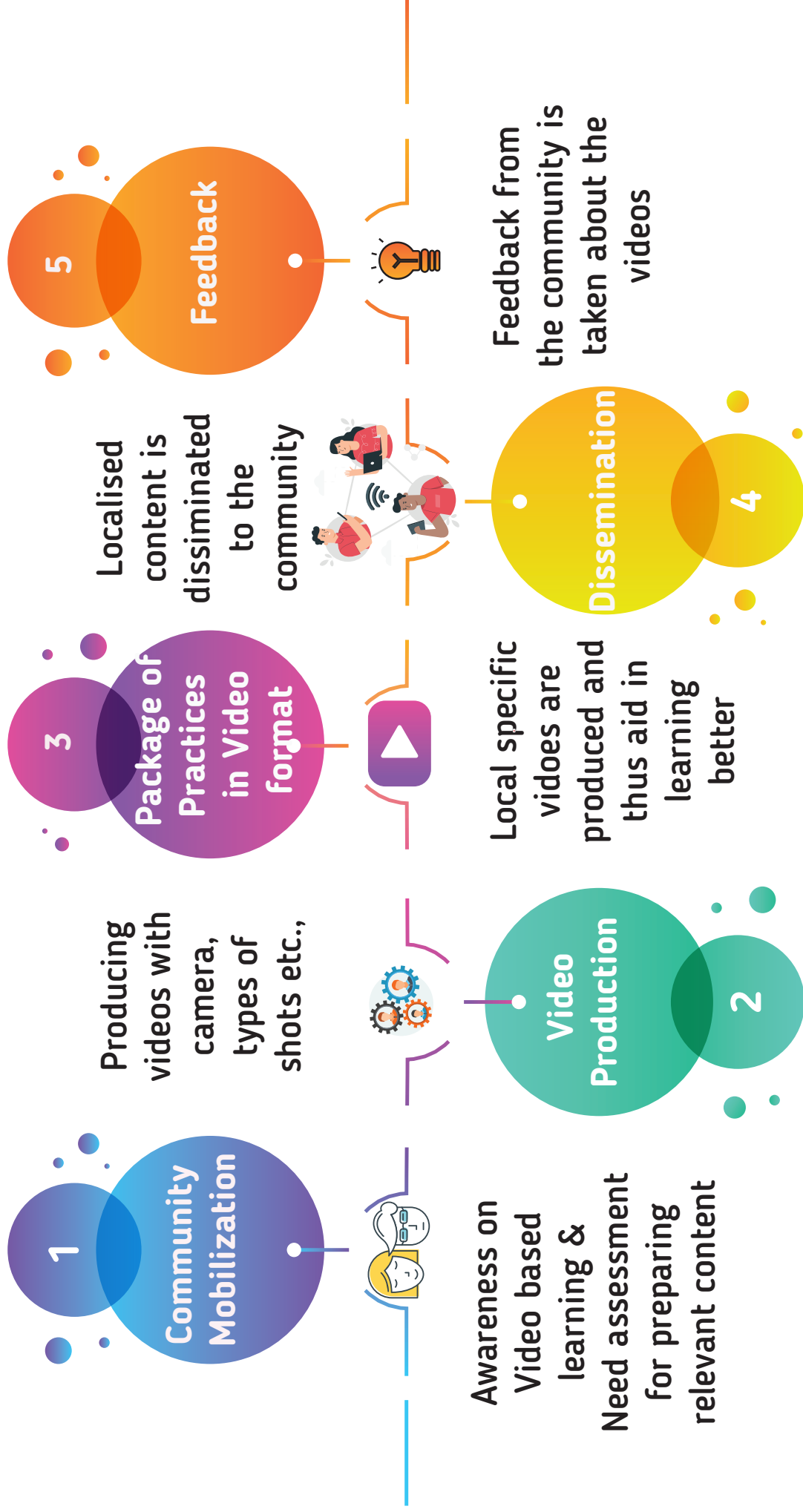
Tool 3: Video Based Learning (VBL)

Video-based learning approach suitably complements existing Agricultural Extension services.

Video-based learning is a form of eLearning that allows its audience to acquire skills and gain knowledge via video. Video-based learning approach suitably complements existing Agricultural Extension services. Video viewing increases farmers including women farmers' knowledge and motivate them to adopt new agricultural practices in areas where traditional extension services are almost absent. The approach goes beyond videos, encouraging the community to co-create knowledge. Like in any other ICT tool, the video content must be based on farmers' needs and scientific principles. A video that introduces a new practice should involve farmers who have already tried the practice and made it farmer-friendly. The advantage of video screening is, it creates great impact on the viewers particularly women farmers; they remember more of what they see than what they hear. Presenting a technical message from a farmer perspective through video encourages innovation and trust, which increases the chances of technology being adopted by local people. It helps to standardise technical information for accurate transmission.

The approach goes beyond videos, encouraging the community to co-create knowledge. Like in any other ICT tool, the video content must be based on farmers' needs and scientific principles.





Screening videos

Prior to screening of video to the farming community efforts are taken to identify a suitable place, date, time and audience. Once it is decided, the farm women and men are informed about it five days in advance prior to the meeting so that they can make themselves free and comfortable to watch the video and learn. Pre-evaluation and post evaluation before and after the screening the video is conducted. Subsequent to this, follow-up of the evaluation is carried out within a week.

Pre and post evaluation

The knowledge of the viewers is tested with a simple questionnaire having a minimum of 10 objective questions. The existing practice of overcoming the issues and the awareness of the content of the videos are tested. Also, oral valuation can also be conducted.

Types of equipment/ facilities required for conducting VBL

- | |
|---|
| • Laptop/ Android mobile/tab |
| • LCD proctor |
| • Screen |
| • Videos to be screened |
| • Questionnaire for pre and post evaluation |

- | |
|---|
| • Questionnaire for pre and post evaluation is necessary. |
| • Time should be convenient for the participants and should be decided in consultation with the key persons |

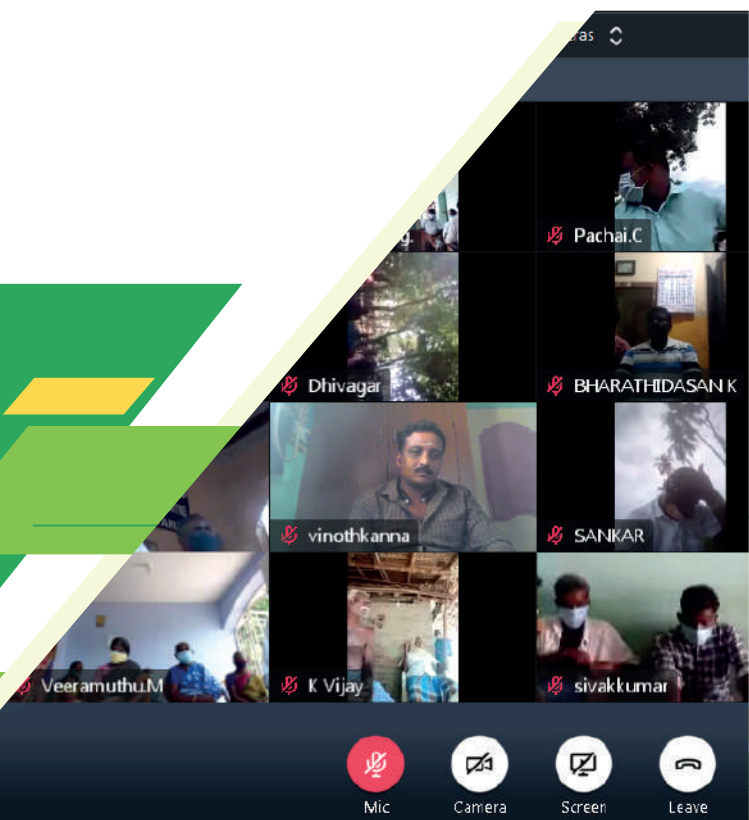


Tool 4: Video Conference

Video conference programme is a two-way interactive meeting between the subject expert and the farm women and men

Video conferencing, an internet enabled tool is one of the key interventions adopted by MSSRF to improve and strengthen the knowledge base of women and men farmers with up-to-date information relevant to the crops specific to an area. It is also a two-way interactive meeting between the subject expert and the farm women and men. When compared to audio conference the advantage in video conferencing is, it is visual; It gives a feeling of interacting with the expert face to face.

Satellite connectivity enabled video conferencing one of the key interventions of the VRC and VKC programme





As mentioned, video conference is internet based and conducted using generally a lap top/ computer, a projector and a screen. Sometimes, instead of a screen a plain wall of a house is also used as a screen. When the projector is connected with a larger screen it enables more farmers to participate. Like audio conference, video conference is also organised and conducted on specific themes relevant to the area and season. The area for conducting the programme is identified in consultation with the farmers. Similarly, a time suitable is fixed in consultation with the farmers. In the video conference another advantage is, it helps the farmers to concentrate on the issue being discussed. This programme provides a platform for sharing and learning from each other's experience and issues faced by them.

Conducting video conference

Video conference is arranged based on the needs of the farmers of a locality or a village in a common place at a convenient time to the farmers by using a lap top and a projector. The issues that need be addressed are collected from the farmers and the same is conveyed to the expert concerned in advance. On the day fixed for the programme, the expert is connected through video call. The farmers are encouraged to interact with the expert and ask or raise questions. The experts provide suggestions or prescriptions and clarify the farmers' doubts. The programme goes on for one to two hours; sometimes it extends beyond two hours also.

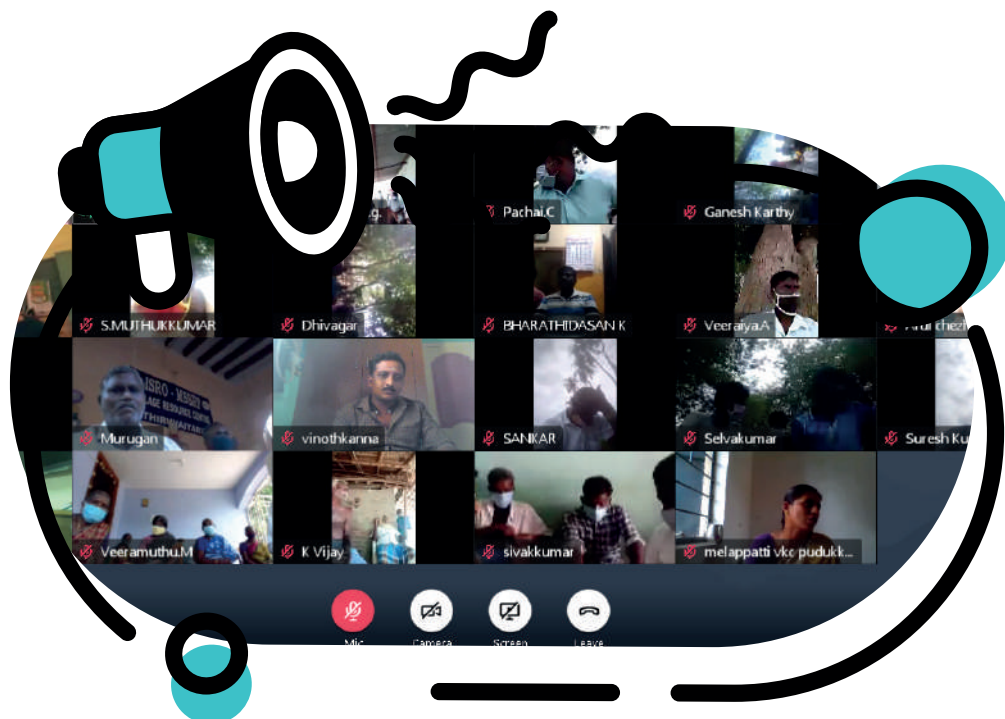
Feedback from the farm women and men are collected to understand the level of application of the prescription/suggestions of the expert and its usefulness in helping the farmer in reducing or preventing pest/disease or to improve the yield and so on.

Equipment required for conducting video conference

- | | |
|---|--------------------------------|
| • | Computer/laptop/android mobile |
| • | Web camera |
| • | Internet connection |
| • | Screen / TV |

Equipment required for video conferencing

Video conference is also conducted using various apps like Zoom, Google meet, Goto meeting, Skype, Whatsapp and other video conference softwares.



Tool 5: Audio Conference

Audio Conferencing is one of the simple and effective ICT tools for two-way interaction between the experts and the farmers enabling telephonic conversation.

Information and Communication Technology advancements have played a crucial role in providing timely information and advisories to the farmers by means of interaction with the experts. Audio Conferencing is one of the simple and effective ICT tools for two-way interaction between the experts and the farmers enabling telephonic conversation. . Since audio conferencing does not require internet connection, it can be conducted anywhere even in remote villages where the mobile network is more than sufficient to carry out the programme. Audio conference provides opportunities to the farmers / villagers to interact with experts from their respective village at their convenient timings.

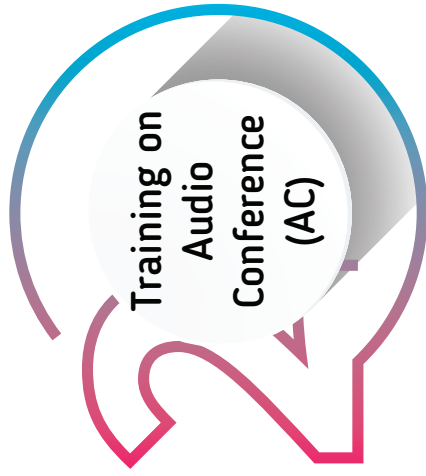
It is a two-way interaction which is equipped with sound systems attached to the expert's mobiles to receive the communications, advisories related to the farmers' clarifications for which the expert opinions is communicated back simultaneously. It supports to link the farmers and experts to connect virtually from remote and distant places.

Two-way interaction which is equipped with sound systems attached to the expert's mobiles to receive the communications, advisories related to the farmers' clarifications for which the expert opinions is communicated back simultaneously.

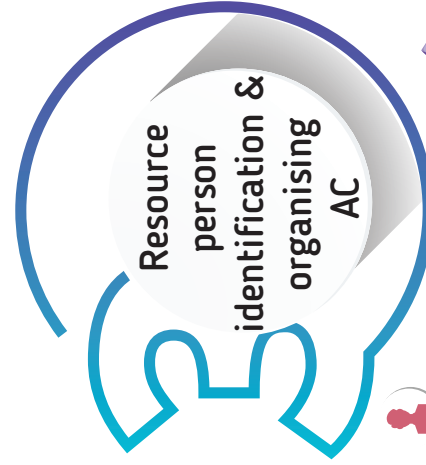
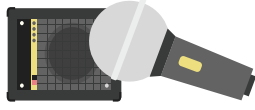




Understand needs of the farmers & prioritize topics for the AC programme



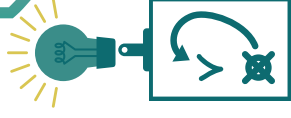
Conducting training to the staffs involved in AC on usage of Phone, Speaker/ amplifier wire or wireless mike, voice recorder, transmitter



Identifying resource persons based on topics and interact with farmers as per pre scheduled fixed data and time



Follow-up & capturing result through proper scientific methods



Conducting audio conference

The audio conference programme is organized on the specific themes which are relevant to the context, on a fixed date and time with appropriate panel of experts. Normally it is conducted for one to two hours depending upon the number of queries from the farmers. It can be organized at any convenient place depending upon the needs of the farmers. The theme should match the prevailing cropping season and ground situation. The facilitating team has to prioritise the theme to conduct the programme.

Farmers' needs are identified through systematic need assessment and topics are prioritised and finalised based on the season. The farm women and men are oriented about the programme and methods of participation. In consultation with the participants a suitable location and time are fixed for conducting audio conference. The farmers are informed three –five days prior to conducting the programme.

Suitable resource persons based on the topics to speak and interact with the farmers are identified. Also, the concerned staff are given training to conduct the programme.

Conducting the programme as per the pre scheduled fixed date and time is important. It is followed by documentation of the session, farmers' feedback and capturing the results through the proper scientific methods

Equipments needed for conducting audio conference

•	Phone
•	Speaker/ amplifier
•	Wire or wireless mike
•	Voice recorder
•	Transmitter



Tool 6: Plant Clinic

Plant Clinics - Strengthening Small Farmers access to Plant Health Information

Plant Clinic an innovative, farmer friendly agricultural extension model established by MSSRF in partnership with the Centre for Agriculture and Bioscience International (CABI) in Tamil Nadu, Odisha and Maharashtra contributes significantly in strengthening marginal and small farmers access to plant health information. The Plant Clinic as an intervention addresses the information gap at the farm level by providing scientific as well as value-added information to farmers along with consistent follow-ups that help in increasing the crop yield and minimising farm expenditure.

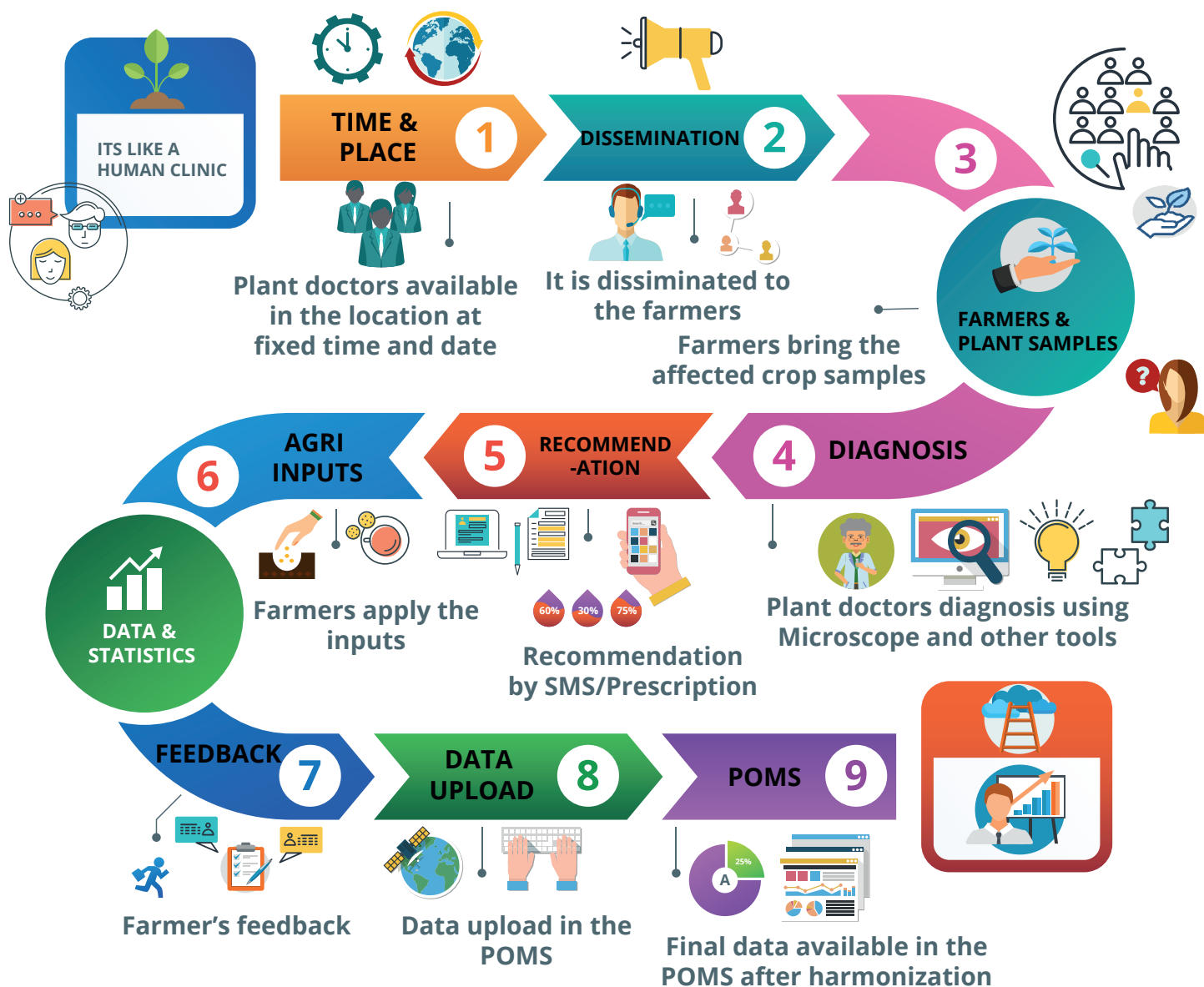
Plant Clinic is tablet-mediated extension system conducted in a common location at a village twice a month for small and marginal farmers by trained persons known as plant doctors to diagnose pests and diseases of the affected crops and provide appropriate recommendations.

Plant Clinic an innovative, farmer friendly agricultural extension model established by MSSRF in partnership with the Centre for Agriculture and Bioscience International (CABI) in Tamil Nadu, Odisha and Maharashtra





PLANT CLINIC PROCESS



Plant doctors

The agriculture extension workers and the progressive farmers are identified according to their willingness in taking up the role of a plant doctor. The farmers selected for the specified purpose of being a plant doctor is trained for duration of 12 days where they are enabled to provide valuable recommendations to the fellow farmers in case of problematic situations that arise in the field. It is followed up with periodical refresher trainings. They are then known as plant doctors. The training course is conducted jointly by MSSRF and CABI. The plant doctors are provided with a pictorial and activity-based manual on plant health issues and recommendations. Also, need-based, periodical training on plant health management is given to the plant doctors.

Plant Clinic – strengthening farmers’ access to information

Farmers who bring affected crop samples are provided with preventive and curative recommendations by the plant doctor. Such timely advice enables the farmer to reduce losses which in turn even increase crop yields. The plant doctor also shares information on preventive measures that help the farmers select appropriate disease-resistant crop varieties, source for quality planting material, use additional inputs and change labour practices. Through the Plant Clinics, an array of technological solutions with cultural, biological, and chemical methods, which are nationally and internationally permissible, ecologically safe, and environmentally sustainable for mitigating crop loss by enhancing plant health leading to economic benefits are made available to farmers. Farmers are also educated to distinguish between symptoms caused by insects, diseases, and nutrient deficiencies, and to understand the harmful effects of red labelled/banned pesticides, pest reappearance, resistance to pesticides, and so on.

A Laptop and digital microscope are minimum necessary tools used by the plant doctor for accurate diagnosis of the issue as well as to train the farmers to diagnose the symptoms for pest/disease or any other related issues. A microscope (with a magnification of 300x) is used for diagnosing the precise problem in the crop. A farmer is encouraged to view the affected crop sample through the micro scope. Farmers are able to view the tiny pests and symptoms of diseases projected through the laptop or a projector. This, in turn, deepens the understanding of the crop issue by the farmer and helps him/her open up and absorb the related knowledge and adopt the recommendations.

Conducting Plant Clinics: the process

Functioning or implementation of Plant Clinic, a community-based initiative involves a process. Identification of Plant Doctors (Possibly an agricultural graduate/ diploma in Agriculture/ experienced and trained farmers if possible Agricultural Department extension workers and KVK scientists) is a

significant component of the programme. The identified persons are given training on module 1 and 2 (explain -footnote). It is followed by finding an appropriate village/location for conducting the Plant Clinic in consultation and consent of the local women and men. The local community is explained the purpose of conducting Plant Clinic sessions. Once the village is identified a base line survey of that village is collected.

Farm women and men are mobilised and interactions are held in order to create awareness about the utility of the intervention. Farmers are consulted to fix convenient date and time for conducting plant clinic sessions. The farmers are explained the proper way to bring an affected crop sample to the Plant Clinic so that it would be easy for diagnosis of the plant health problem. Women farmers contribute significantly to farming; so special efforts are taken to encourage their participation in the Plant Clinic programme.

Promotion of Plant Clinic programme

Promotion of Plant Clinic programme and its purpose is carried out through different ways. Leaflets are distributed; sign boards are kept at strategic points in a village; also messages are disseminated through audio and voice messages, Public Address System and social media; lead farmers and field workers interact with farm women and men to create awareness about the Plant Clinic and its benefits in helping the farmers in improving their livelihood. It is emphasized that a farmer should take care in bringing a crop sample for crop advisory. It is explained well the steps to be followed while collecting a crop sample for obtaining crop advisory from the Plant Clinic.

As per the schedule clinic sessions are conducted; the information about it is conveyed to the villagers well in advance. After carefully diagnosing the crop samples using a microscope and other relevant equipment, recommendations or prescriptions (involving mainly locally available, cost-effective cultural, biological and green label chemicals) are provided. Farmers are encouraged to share their experiences with the Plant Doctors which would help in providing the services more effectively.

The data is uploaded in the Plant wise Online Monitoring Systems (POMS) which is followed by hominization (??) of POMS data. POMS data is used for further planning and plant health awareness. Conducting content development (PMDG and Fact sheets) workshop is one of the components of the programme.

Local agro-input dealers are contacted to explain to them about the purpose of conducting Plant Clinic sessions in the villagers. Agro-input dealers support is requested for getting their help to provide inputs based on the Plant Doctor's recommendations.

Building rapport with the department of Agriculture, KVKs Research Institutions and other related institutions is another important component of the programme. Necessary efforts are taken in this regard. The experts' guidance and inputs are necessary for the effective implementation of the programme.

Materials required for conducting a Plant Clinic session

- | |
|--|
| • Diagnostic accessories such as hand lens, needle, forceps, scissors, Petri plates; magnifying lens, Digital Microscope, Laptop/Tablet, projector, system and screen; |
| • Prescription sheets, photo sheets of natural enemies and predators |
| • Validated content (Fact sheet/PMDG in regional language) |
| • Big umbrella, portable table and chairs to conduct plant clinic sessions in farmers' fields |
| • Signboards, banner and flyer |
| • Uniform (coat) and hand gloves are required for a Plant Doctor at work during the Plant Clinic session. |

Nutrient Deficiency
Agro Input Dealers
Recommendation
CABI Plant Doctor
Disease Training
Pest Plant Clinic
POMIS Knowledge Bank PMDG
Plant Health Campaign
Eco-Friendly Factsheets



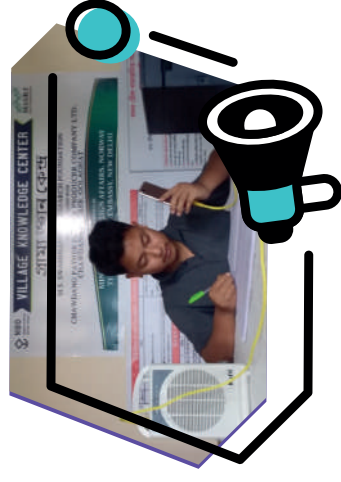
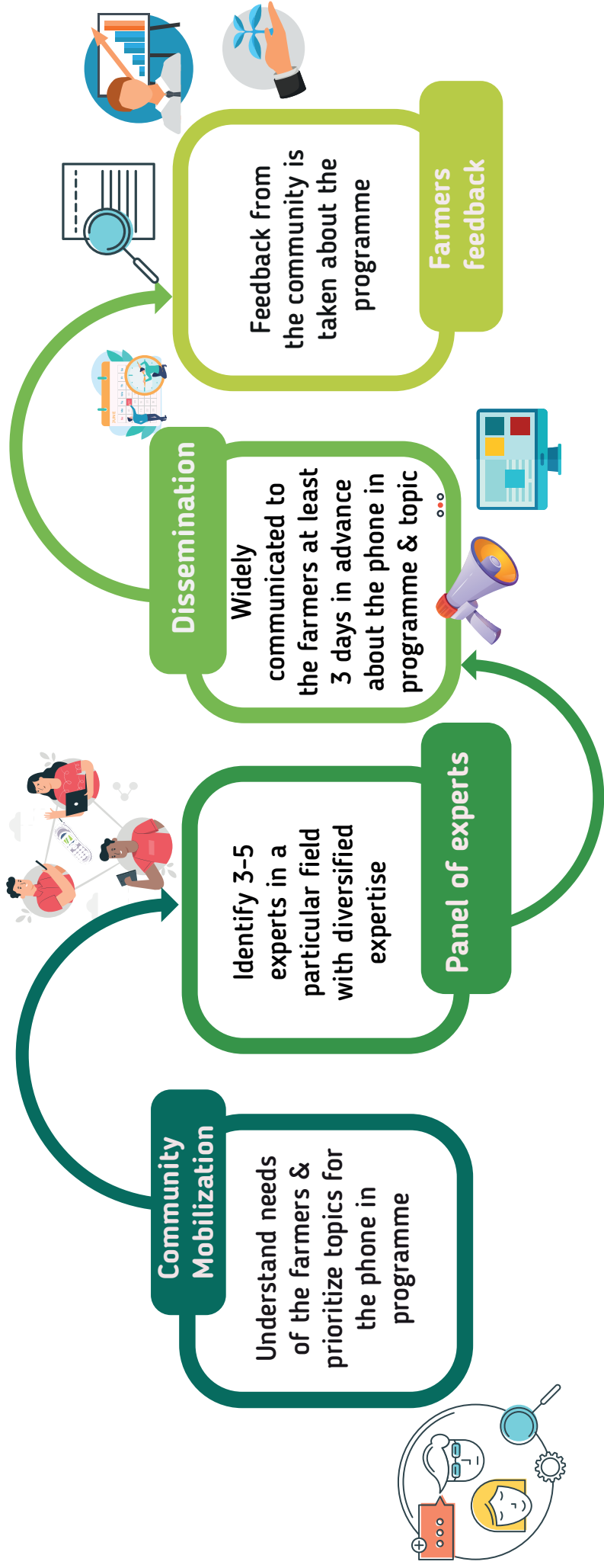
Tool 7: Phone in Programme

It can be organized at any scale – either at block/district/region or state level depending upon the type of the theme for which it is planned

Phone-in programme is one of the mobile based advisory services to strengthen farmers' access to information at the right time from credible sources to take informed decisions on critical matters affecting their livelihoods. It is a two-way interaction between farmers and experts over mobile phone to get information, clarifications and advisories on a pre-scheduled date and time. It links the farmers and experts to connect virtually/remotely irrespective of the distance or location. The programme is organised on specific themes relevant to the context with appropriate panel of experts. Normally, phone-in-programme is conducted for 2- 3 hrs depending upon the queries from farmers. It can be organized at any scale – either at block/district/region or state level depending upon the type of the theme for which it is planned.

It links the farmers and experts to connect virtually/remotely irrespective of the distance or location.





The process

The success of any programme is based on the fulfilment of the needs of the farmers in the targeted region. The theme should match the prevailing cropping season and ground situation. Hence, it is important to understand the seasonal needs of the farmers in the region through a systematic need assessment exercise with gender and social inclusivity. The needs are segregated based on themes and season and endemic /epidemic occurrence of pests/diseases for each cropping system of a region. Then, the facilitating team prioritises the theme to conduct the programme on a scheduled day and time.

Panel of experts

Topic of the programme is determined based on the prevailing situation of the crops/issues of farmers in a region or district intended for conducting the programme. A panel of subject experts relevant to the topic are consulted prior to fixing the programme; based on their confirmation date and time are finalised. It is advisable to identify 3-5 experts in a particular field with diversified expertise around the identified theme. For example, if the phone-in programme is on theme – Farmers preparedness for the forthcoming season in agriculture- it is better to identify resource persons from the subjects like Agronomy, Agricultural marketing, Seed Technology and Plant Protection divisions. It is also advisable to have one of the Govt. officials in the panel to address the queries related to Government schemes/policies. It is very important to orient the experts about the programme, background of the field situation if any, and operational procedures.

Information dissemination about Phone-in programme

The information about conducting a phone in programme is disseminated through multiple channels such as different social media platforms, voice message, newspapers, All India Radio and through the Knowledge Workers/field workers. It is important that farmers and other stakeholders are communicated about phone in programme, the topic to be discussed, the time and date of the programme at least 3 days in advance with a reminder on the previous day of conducting the event.

Conducting phone-in-programme

The phone-in-programme is conducted using a common helpline number which is provided in advance to the farmers. Farmers are advised to make a call to the numbers in the given time slot and date. Also, they can register their problems a day in advance by calling the given number.

In order to ensure hassle-free conduct of the programme audio, mike, connectivity and recorder are to be checked well. The experts are to be seated with easy access to the proximity of the mike. Sometimes one or two experts may be connected virtually from their respective places. The farmers call the given mobile numbers and get solutions or guidance from the experts to handle their problems. The facilitating team also call the users who have registered their queries in advance one-by-one separately and they are provided with suitable recommendations. The entire session is recorded for future reference and also one of the persons from facilitating team record the questions and answers in a register. Depending on the number of farmers connected, type of queries and the interactions for solutions, the programme may run for 2-3 hours.

Equipments required

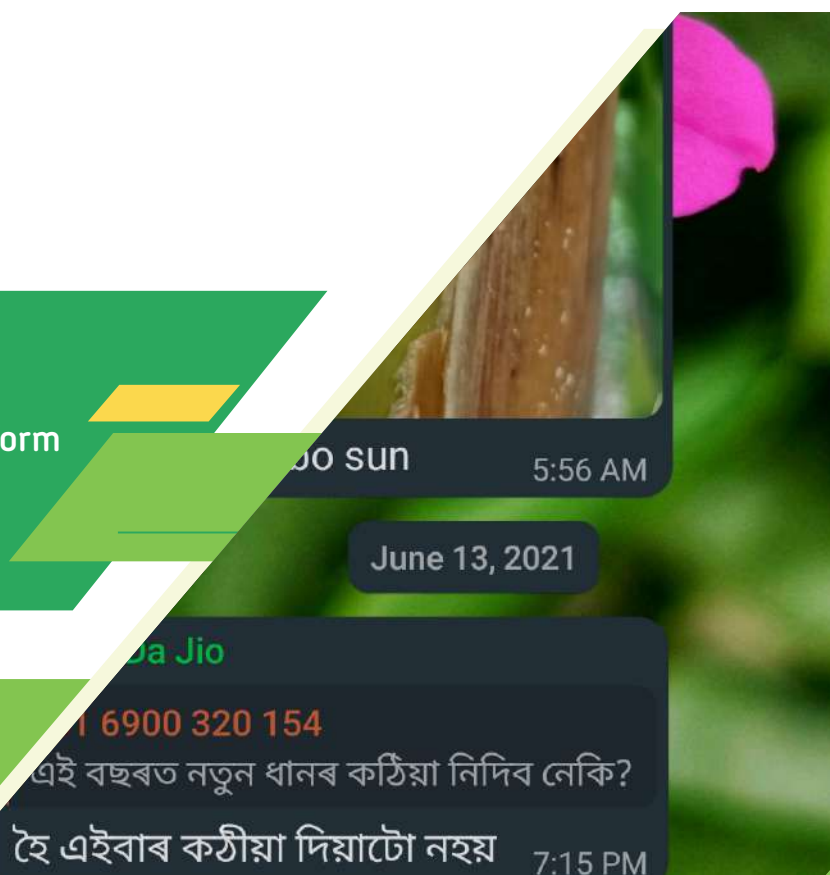
Phone, speaker/ amplifier wire or wireless mike and voice recorder

Tool 8: WhatsApp

WhatsApp is an important digital tool in providing real advisories to the farmers including women.

Social media is a very useful tool in providing real-time advisories for pest, disease and nutrition management as well as other need-based content to the farming communities. WhatsApp is an important digital tool in providing real advisories to the farmers including women. It creates an avenue to establish networking possibilities for interaction between farmers as well as with several institutional stakeholders who would provide highly extensive scientific inputs. It promotes farmer to farmer learning platform with the support of experts. The farmers get solutions or necessary information from where they are. It saves their time energy and money. They do not have to travel in search of extension services. They get necessary real time information related to farming issues as and when they are in need.

It promotes farmer to farmer learning platform with the support of experts.





Formation of WhatsApp group & sharing rules and regulation to the group members



Nominating a person to handle the group & dissemination



Formation of expert groups to provide the answers for farmers queries



Receiving queries - text, audio, video, pictures from farmer



Documenting Feedback from the farmers

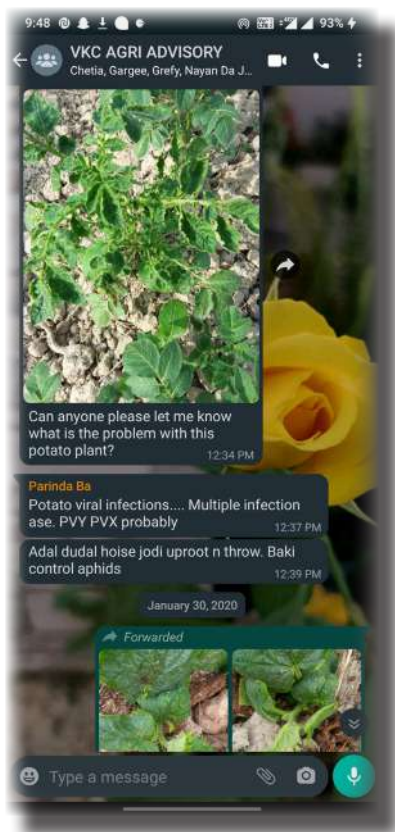
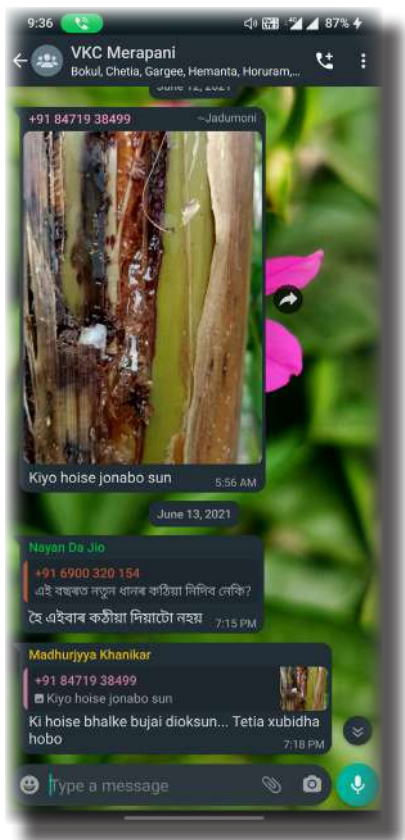
Operational procedures

Information about forming WhatsApp group as a platform to share and exchange of relevant information on agriculture and allied activities is disseminated among the rural farming community through different digital tools and word of mouth. Crop based and livestock groups are formed. Interested and eligible farm women and men names and their mobile numbers are collected and added in a particular WhatsApp group. The members are explained about the rules and regulations of the group. Various expert groups (drawing from different aspects of agriculture and livestock) are formed to address or answer farmers' issues/queries.

Farm women and men are encouraged to post (text/audio/video/picture based) queries. The

person nominated to handle the group is responsible to get the answer/advisory from the concern expert and post the same to the farm woman or man. It is important to provide answers to the farmer's queries within a day. Otherwise, the members would lose interest and eventually may stop asking queries.

Through WhatsApp group other relevant content, information on government entitlements/schemes are also posted. In order to assess the utility of the tool, feedback is collected from the participants on regular basis to facilitate improvement in required aspects. Documenting case studies also helps in improvement and know the impact of the tool.





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