e-Extension

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Contents

Course Description

Information and communication technologies have revolutionized the process of communication. Extension Education and Extension Service activities are largely involved in the dissemination of innovations among various stakeholders. Changing climate and other natural factors, widening extension worker to farmer ratio, farmers demand for specialized information services, etc. force the adoption of e-Mediated extension services. Since the beginning of ICT revolutions, experiments are being conducted to exploit the potentials and make its effective utilization in extension service mechanism. As a student of agriculture and allied sciences or as an extension professional it is essential to know the historical aspects of e-Extension, how the journey was made to arrive at the current status. Understanding the favourable as well as limiting conditions to exploit the potentials of ICTs for extension services are also essential for stakeholders. How education and extension services can be extended beyond the limits of four walls and in such exercises how information technology can act as a tool are the key issues. Development of appropriate content suitable for the specific stakeholder is the challenge for the agricultural researchers and extension service providers. Extension educationists are creating such platforms wherein professionals can come together and using IT tools provide e-Extension services to the communities.

> *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/eextension/?p=16*

Course Content

- Basics of Communication and ICT
- Journey of ICT applications in extension service
- Concepts for better understanding and making e-Extension practical
- Means of achieving e-Extension
- Practical application of e-Extension
- e-Extension initiatives of institutions

Course Audience

- UG and PG students of Agriculture and Allied Sciences
- Faculty of Agriculture Universities
- Agriculture Scientists in ICAR
- Professionals in State and Central Departments of Agriculture
- Specialists working in KVKs
- NGOs in Agriculture
- Progressive farmers/ Farming community

Outcomes of this Course

- Pluralism in agricultural extension
- Market-led extension
- e-Readiness
- AI in agriculture
- MOOCs for Agriculture
- National Agriculture Market

1-1 Basics of Communication and ICT – Human Communication : What and Why?

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Introduction

Hello friends, I welcome you all to this course on e-Extension. This is the first interaction with you all, wherein we will be trying to understand the concept of communication; specially the human communication. So when we talk of human communication, it is seems to be very simple, but it is very complex process. Having said this, so when we are into the interpersonal communication or intra-personal communication, we feel that we are very good communicators or we are efficient communicators. But as we move from the interpersonal communication to group communication, the public communication or the mass communication; it is going to enhance the levels of intricacies. Then at the same time so when you start making use of technology in the process of communication. That is also leading towards the complexities.

There are traditional methods that we used to have, as I have already said to you about the Farm and Home visit, which was used by extension professionals in the earlier time, and later we moved on to the interpersonal communication methods; which then we started using the mass medium like TV, Radio and Newspaper, which

are now classified under the traditional methods; because now we have more advanced as well as the modern methods, like maybe use of the Information and Communication Technologies, wherein the source as well as the receiver, both are to be acquainted with these processes and methodologies, so that is how modern methods are becoming more complex.

Human Communication

Earlier in the traditional methods the relationships used to be very strong. But now we need to establish or maintain those strong relationships, otherwise it is going to be a very weak relationship with our receivers. And as the relationships are going to be weak, so our technology transfer process is going to be influenced with these concepts. So that is what is the importance of human communication.

Types of Communication

Then coming to the interpersonal versus the intrapersonal communication. When we talk of intrapersonal communication, you are communicating with the self, wherein you are trying to analyze the issuesand you are trying to put various dimensions to the same concept. And when you start sharing with the others; that becomes your interpersonal communication. So as an extension professional you need to interact with maybe one person or a group of persons. So that group may be very small.

The communication that takes place between more than two members, are the groups that we call it as the small group communication. And as the groups goes on becoming larger, so that takes the shape of public communication, and ultimately the mass

communication when we reach the huge number of people over geo spatial space; so wherein at the same time we are addressing huge number of people using the mass medium like television and nowadays it is the e-mediation is there. So you can reach huge number of people.

Needs Satisfied by Communication

So why we are taking up these efforts of communication. Because the needs are to be satisfied by the process of communication. These needs include

- The physical needs which benefit our physical health or well-being and the identity needs because every individual wants to maintain his own identity, wherein he makes all possible efforts, so that is how the meeting of the identity needs is also important
- The social needs like the pleasure, escape, affection, relaxation, inclusion and control are also to be met with the help of the communication process.
- The practical needs. So this is what is the core of the human communication.Because as an extension professional and as a receiver, farmers are to be taken to where they are planning to, so to get what we need to get, and to accomplish what we need to accomplish. Means ultimate target has to be identified and achieved, and to better understand our environment and what is expected from us.

Once we work with these objectives, then we can go for efficient human communication process.

Communication Competence

The communication competence, it is the ability of an individual to communicate effectively. How he can communicate effectively? So the moment we start maintaining relationships in these interactions, maybe it is with the farmers or maybe it is with various other stakeholders. So then the process becomes effective by adopting these processes like:

- Need to have empathy. Empathy means putting oneself into the roles of others. Until and unless we try to put ourselves into the role of our receivers, maybe it is farmers or maybe it is input supply agencies or maybe it is extension service providers, so we need to visualize their roles; so that we can be an effective communicator.
- Cognitive complexity. Means the ability to analyze the behavior of others in a variety of ways. So if a client is behaving; the client maybe the farmer or the client maybe the input supply agency. Maybe he is supplying insecticides or seeds or various other inputs. So how and why he is behaving in that manner. So that makes a lot of difference. So as an effective communicator, we need to analyze them.
- Self-monitoring. Observing your own behavior as if you are outside yourself. So when you try to analyze your own actions that you are carrying with your client system, so then you can be a very good communicator. Then being aware of how your behavior affects others. Because if your actions are influenced, the similar influence that we will be finding in our receivers also. Receivers also get affected. He is also influenced by your behavior. So that also the source should be aware of.
- Commitment to the relationship. Because as an extension professional, we all have a commitment with our client system. Our clientele is very large. So how we are going to maintain these relationships is; that depends on your communication

process.

Factors Responsible for Response

- The factors responsible for responses context, the context in which that will be entering into the process of communication.
- Your goal. Do you want this relationship to continue positively? Or you want to terminate it after completion of one interaction or maybe the couple of interactions. So if you want to maintain the longer relationships, so then we have to be a very good communicator.
- The other person; how we are perceiving our receivers.

These three factors are responsible for effective communication and as well as the feedback that we are getting from our receivers. So that is how in the science of communication it is said that, feedback is source oriented. How the source behaves with his receiver, so accordingly he is going to get his response.

Noise

One factor that comes into the process of communication, that is the noise.

- It affects the message sent by the sender
- Because then it may prevent the message from reaching the receiver accurately. The noise may not be only the physical noise. So that maybe any disturbance that is hindering the process of communication.
- It may affect the way the receiver interprets the message. Because of the factors that are influencing the receiver, so he may not understand the concept in the way that receiver is trying to share with him. So that is what is the factor acting as a noise.
- It may take place at any point of time. Before the beginning of

the communication process, or during the process of communication, or even after the message is delivered. It means the noise can happen during the process of communication or before or after; so all the time we need to reduce the communication.

Effectiveness in the communication, that is fidelity should be there. Fidelity means, faithful performance of all the elements of communication and the minimum noise in the process of communication; leads to the effective communication.

Types of Noise

What are the different types of noise that we come across,

- The external noise. So the factors that take place outside the receiver, it maybe the physical noise also that we can say.
- The physiological noise, so which are specific to every receiver. It maybe because it is biological in nature. It is a personal factor that prevents the receiver in getting the message; appropriate message.
- The psychological. The issues related to the attitude, the skill, as well as the knowledge of the receiver which influences the process of understanding, and at some point of time it is acting as a noise for the receiver.

Environment

What type of environment that we are creating.

- It refers to the surrounding to our personal experiences and cultural backgrounds that the communicators base their view. Because once the communicator, means the source or the communicator, he is presenting before, he is representing his own culture, his own region, his own subject matter. Number of factors are coming there. So that is how he is trying to create the environment which is essential for the delivery of the message that he is trying to put before his set of audience.

- Our environments may influence the way we encode or decode the message. As a receiver we are here to decode the messages given by the source So the environment from which that I am coming from or I am influencing, so that also is one of the important factor in getting the message.

The way we understand the message is based on the factors like how we interpret the message, because the meanings are lying in the receiver. It is not the source, whatever the source is delivering. So receivers are understanding in their own way. So that is how for the same set of message, so every receiver is trying to understand it in his own background, because of the environmental factors that he is facing with.

The environment that he or she comes from or we all come from also influences our understanding process. The environment we are in, when the message is sent, is a micro climate we are referring to, wherein it is influencing the process and it is creating an environment. And the amount of noise present when the communication takes place. When I say noise, it is not only physical, that may be biological or that may be psychological noise that is present in the receiver. So that he can overcome that and he can be an efficient communicator.

Conclusion

To conclude we can say that with the information and communication technologies, we can reduce the number of noises but at the same time, so if the things are not taken care of, there maybe chances of enhancing the noise.

- Ultimately the process of communication leads to satisfaction of several human needs.
- Effective human communication skills lead to the effective

relationships. So this is what we try to emphasize specially in delivering the extension services.

Once you take care of the noise factor as well as the needs of the receivers and the technological aspects as an extension professional that you are intended to communicate to your receivers. So these processes are going to make the entire process of communication a meaningful one.

Thank You

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1-2 Basics of Communication and ICT – Information and Science needs of Farming community

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Brief Introduction

Hello friends. In our last lecture we observed that the process of human communication and various issues associated with it. In today's discussion we will be talking about the information needs of the farming community. Before we exactly come to the information needs, we need to understand the differences between the data, information and knowledge. So before that let us talk about the concept of information and communication technology.

What is ICT?

- Information and Communication Technology is a combination of computer technology, communication technology and information management technology. Basically we can say that information and communication technology broadly includes the communication devices comprising of the traditional ICT's

like radio, television and the modern ICT equipments like the cellular phones, computer networks and the hardware and software, satellite systems etc etc.

• Various services and applications associated with them such as video conferencing and distance learning make the broader term like information and communication technology.

Data vs Information

So now let us look into the concept of data. What is this data? Data means the raw facts, and there is no context, because it is raw in nature, and it is just number or a text. Until and unless we attach appropriate processing to this data, it cannot be converted into information. So when we say that information. Information means it is the data with some context. And the moment we add some processing methods to them, so it becomes an information. The value addition may be through summarizing, organizing, analyzing. These are the processes thatwe make use of in converting data into information.

When this information is understood by the receiver, it becomes their knowledge. That is why we say that knowledge is specific to an individual. We cannot transfer knowledge from one individual to another, but we can transfer only either data or information, and it is he who is going to understand and analyze in his way and he is trying to make his knowledge.

For example the data is the numbers what we have. But it becomes information when we add certain processes like. Just by adding two slashes so we can translate it into, the date of your examination, or it may be having some other meanings also. Similarly if we add this prefix, Rs, that can be the salary of somebody at a given point of time. Or if we say that it is the PIN number(Postal Index Number) so then it gets different meaning.

The figures are same but in three different contexts it is having

different meaning. So the processes involved are summarizing, computing averages or graphing, creating charts or visualizing the data. So when we add value to data it is giving different meanings.

Information Needs of Farming Community

Now coming to the information needs of farming community.

- Maintaining the quality of produce is one of the important issue before the farming community nowadays.
- Finding appropriate technological options is another challenge before the farmer, wherein the extension machineries as well as the research system is working on this.
- Management of the technology. Management of technology is one of the important issue before the farming community.
- The optimal use of inputs. Farmers are using the inputs but whether they are using it in the desired manner, the appropriate manner or the recommended manner is one of the important issue.
- Exploring the options. Because farmer has number of options. Because traditionally he is cultivating various crops, but the research system is suggesting them something new methods. Now he is in a dilemma, whether to go for the traditional methods or the modern methods, wherein he has to explore various options; maybe it is related to the mixed farming or diversification of the crops or animal husbandry, fisheries or various other diversification options that he can think of.
- Locating appropriate input suppliers. So this is one of the important issue in case agriculture and allied sciences. Because the number of service providers are relatively less as on date; we can say that. But how to ensure the quality inputs and timely availability of inputs is another important issue.
- Shared action with the fellow farmers. The basic issue with the

Indian farmers is. More than 80% of the holdings are small and marginal. Under such circumstances the marketable surplus for the purpose of marketing is very very less for about 80% of the farming communities in Indian context. So under such circumstances if they are not sharing the resources or the produce or if they are not forming themselves into different groups or if they are not adopting the group approaches, it is becoming very difficult for them to market their produce and gain the profits.

- Identifying and satisfying consumer as well as the marketing demands, because as a receiver the receivers are having huge number of demands, but the farmers are not able to supply because there exists a gap.
- Diversification of income generation activities is another information need of the farmers. And now the governments are also emphasizing on doubling the farmer's income. Without diversification of agriculture, we cannot think of income generation.
- Understanding the implication of changing policies. So government is coming out with a number of policy modifications and how the farmer can get the benefits of that. So earlier farmer was not allowed to trade his produce (agricultural produce) but with the modification in case of Companies Act in 2005, so now the farmer can also become a trader, so that he can maximize his profits. So under such circumstances how the farmer is becoming aware of these things. So government is providing number of platforms; e mediated platforms maybe through e-NAM, maybe through AGMARKNET or through the Farmers Net seed portal. Number of such options are being given to the farmers. But how to take these things to the farmers is one of the important information need of the farmer.
- Judicious utilization of agricultural finance. There was a time, so where to get the agricultural finance itself was a major issue. But now the finance is available. The financial

organizations are coming forward to provide the agricultural finance, but how to make efficient use of this finance is the issue.

- The collective action. If the farmers are not coming together. It is very difficult to maximize their profits.
- Evolving coping strategies for the climate change, which is not in the control of anybody. But the researcher's extension mechanisms as well as the farmers put together can come out with certain strategies; how they can adjust themselves to the changing situation.

Need For e-Extension

So what is the need for e-Extension.

- The first and foremost thing is to expand the knowledge resource. So earlier there used to be very limited sources of knowledge. But with the e-mediation, we can enhance these eknowledge sources.
- To accelerate agricultural growth. If you look at the growth of agriculture. At the time of independence the population was around 30 crores, and the agricultural production was around 50 million tons. But over a period of time this 50 million tons has reached to more than 280 million tons now. It means almost there is a growth of around 6.5 to 7 times growth is there. So that is not possible without the involvement of the technology and various issues in between. So how we can enhance this growth now; so that is the issue wherein e-Extension is going to play a role.
- Facilitate better information access. The sources of information even today, if you look at; the traditional sources, majority of the farmers are still dependent upon. That is their friends, the relatives; more than 60 to 70% are dependent

upon. But there is another section which is dependent on the cosmopolitan sources of information. So now how can we expand these numbers, so that is what is the target before the e-Extension, and that is why we need the eExtension interventions.

- To supplement inadequate technical manpower. In my previous discussion I said that the widening gap between the farmers and extension workers, ratio. For every more than 2000 farmers, there is only 1extension worker. How he can cater to the needs of the 2000+ farmers. E-mediation is the only way, so that is why we need e-Extension.

- For stronger research-extension- client system linkage. So these three systems are existing, but whether there is an organic relationship between these two, so this mechanism of e-Extension is going to help them in establishing these relationships. Maybe just to give an example, by the mechanism of e-mediation like through the social media. You take the example of WhatsApp groups. If the farmer is a member of a particular WhatsApp group. So he is always having the linkage with the scientist as well as the extension service provider, and at the same time he can be linked with the input suppliers also, so that the organic relationships can be established in this way.

- To develop efficient feedback mechanism. In the traditional way so to get the feedback, the scientists were also having a lot of difficulties, because they were supposed to visit the field. But now the portals, then the websites, then the mobile based extension services are helping them to get the efficient feedback from the farmers.

- The cost effective extension delivery. So with the e-mediation. Because the major problem with the extension mechanism was the mobility support to be provided to the extension professionals. So with the e-mediation, we can reduce that mobility support. It means we are saving lot of financial inputs in delivering the extension mechanism. And at the same time

one extension worker can cater to many farmers.

- To develop knowledge managers with the help of giving the tools and techniques of e-Extension to these knowledge managers. Knowledge managers are going to be the efficient e-Extension workers in the days to come so that we can bridge the gap between the extension workers as well as the farmers.
- To ensure gender equity in technology transfer process because if you look at the extension mechanisms. So because it involves huge amount of travelling as well as interaction with the farmers and farming communities. So it is as on date dominated by the male. Because ICT's are gender neutral as well as age neutral. So by adopting the ICT mechanisms or the e-Extension mechanisms we can reduce this gender gap also.
- To empower small and marginal farmers. The empowerment is by the means of providing appropriate information, when it is required. Timely and appropriate information. These are two important inputs for the small and marginal farmers to empower them, and e-Extension is the way we can achieve these targets.
- To serve the farm stakeholders beyond technology transfer role, not only providing them the production related technology. By providing them the processing as well as marketing and various other options also is the need for e-Extension.

Tools

Then the e-Extension tools include,

- The word processing applications used for preparing the documents.
- Presentation software used for preparing presentations. Earlier the same presentations worked in the traditional way,

what we used to prepare that used to take a lot of time, but with this we can have a lot of creativity, as well as we can transfer them very easily.

- The spreadsheets using for the purpose of calculation and preparing tabular data as well as calculations.
- The database can be created over a period of time. Because this is what is the advantage of computers, so we can store huge amounts of data and we can retrieve at any point of time.
- Creating the multimedia content using the text images, animation, audio as well as videos.
- Make use of the web browsers as well as email for transfer of these technology processes.

Human Advantages and Computer Advantages

So the human advantages of computer include

- Thinking, because the human beings are having the brain which the computer is not having, so this is what is the human advantage.
- The judgment that the human beings can provide at a point of time.
- The creativity that the human brain has.
- The intrinsic motivation and as well as the extrinsically the human being can be motivated, this is what is another advantage.
- Can be flexible,
- It is mobile in nature, the human beings.
- The storage is another issue.
- Working with the knowledge base that he has, and he can make use of the knowledge base that others have, so that there is a collective effort.
  The advantages with the computer are.

- The speed with which that it can perform the functions.
- The accuracy. So it takes a lot of time for human beings to achieve that particular accuracy.
- Can depend on the outcomes that what the computer is providing you.
- Little training is required so that is another advantage.
- Required lower cost, because initial cost is comparatively high but over a period of time that can be managed.
- The information processing becomes very faster with the help of this computer.

Limitations of ICT

And as we have observed certain advantages, there are certain disadvantages also.

- The job losses of **unskilled** labor. I request you to underline this particular thing. That unskilled labors are going to lose their jobs. It is not the skilled. If you develop the skills, definitely there are number of opportunities.
- The operational faults that we may observe over a period of time, that may be in the form of bugs or virus etc. That can create chaos at some point of time, so that is one of the limitations.
- Completely reliant on the electricity. So this is another issue. But over a period of time we can easily overcome because by making use of alternative sources of energy. It maybe solar or it maybe wind energy and the number of other alternatives that we are already working upon and we are getting the benefits of that.
- Limitation of information and communication technologies is the information diarrhea. Now there is over flooding of the information available on various e-resources. So the number of

mails that what we get, and we are trying to categorize them as a spam, but it is also coming out with number of information. Similarly in the social media also we are getting lot of even unwanted information. So that is another limitation.

- The crimes related to computer are becoming one of the menace for this application of ICT's in various sectors.
- The lack of hardware as well as software standards is another issue. Even though institutions are there but it needs to be standardized.

Computer Limitations

The limitations with the computer itself include,

- Because it is not creative unlike a human being
- It can't reason, but it can provide the answer based on the information base what it has.
- It can't discriminate because if the feeding is the numerical 1, it cannot accept 'one', because it is not having that particular ability, it can accept 'copy' but 'coppy' it cannot accept, because of the change in the spelling.
- The limitation of the computer. It operates logically, but incapable of acting rationally, unlike human being. So that is another limitation with the computer that we can say.

Conclusion

- Put together we can say that ICT tools facilitate the need satisfaction of the stakeholders. With these limited limitations, we can overcome them over a period of time. But it is one of the important mechanisms to provide the appropriate

information that is timely information.

- e-mediation in extension service is need of the hour, because of the growing population and growing information needs of the clientele. So it becomes very very essential.
- Identification of needs is key for addressing the problems of the farmers. Until and unless you want to address the problems of the farmer, we need to identify their needs as well as the issues.
- e-mediation in this particular sector is going to help us in addressing these problems. So this is all about the information needs of the farming community.

Thank You.

Download

PDF: Information needs of farming community

1-3 Basics of Communication and ICT – Pluralism in Agricultural Extension

Brief Introduction

Hi Friends in our last interaction, we observed the information needs of the farmers and the various issues associated with it. In this particular discussion, we will be talking of the concept of pluralism in agricultural extension. So now you must be thinking of what exactly this term pluralism means.

Pluralism in Agricultural Extension

- The term pluralism means the existence of variety of agencies, service providers, models and institutional arrangements; specially including the public institutions, the private institutions, the community based organizations, the non-governmental organizations, catering to the information and advisory support and service needs of the farmers.

In our previous discussion we were talking of information needs. And here the mechanisms; the institutional mechanisms that are

available for satisfying the information needs. When the number of such institutions are increasing. So that is where the concept of pluralism comes into the picture. It is not one institution but many institutions are providing the similar services. So why such situation is emerging especially in Indian context. Because the population who is dependent on agriculture is huge. Even today more than 50% of the population is still dependent on agriculture. And the number of service providers to this particular population needs to be also huge, but various players are coming providing similar services. Let us try to understand the issues associated with this.

This table gives you the information that the number of farmers, the institutions are serving. Maybe the extension personnel if you look into the State-wise data. The State of Andhra Pradesh, one extension worker is catering to the needs of 3,162 farmers, and when you look into specially the fertilizer, which is one of the critical input for agriculture. So for 1622 farmers, there is one fertilizer shop that is available. And if you look into from the point of view of net command area. So one extension professional is there to take care of 2608 hectares of the net cropped area, and one fertilizer shop is catering the needs of 1338 hectares of land. What does this mean? And similarly we'll find the data for various States. It is not much varying based on the geographical situation of the State, the number is almost same.

Strengths of Pluralism

So under such circumstances the role of the agencies which are providing the services comes into the picture. So now let us look into the strengths of this pluralism. Why we should have the number of service providers Maybe they are belonging to the public institutions or the private institutions or the non-governmental institutions or the community based institutions. We need the services of them but what are the strengths of this?

- The diversity in approaches and the target groups covered. So that we can easily reach our clients in comfortable manner, and their needs are also satisfied. This is one of the important strengths.
- We can complement and supplement the efforts of each other. If the public extension mechanism is lacking in any of the efforts, the private can take care of that and if private is not able to do that, public extension agencies can do that, if both are not able to take up some issues the community based organizations or the non-governmental organizations can take into account.
- The private agencies can cater to the demands of the farmers, which are already doing largely in case of seed, in case of plant protection chemical, so that the government is not to think about these things, so this is how the work is going on.
- Help to overcome the paucity of human resource in the public system which is one of the major issue. In our previous discussion also I mentioned about this. So once the private players are there, the non governmental organizations are there or the community based organizations are there, the paucity of the extension professionals can be easily taken care of. This is what is the strength of pluralism.
- It can help address varying needs of the farming community. The public extension mechanism may not be having expertise in all the areas as desired by the farming community. But the private institutions are coming out with their own super-specializations, and accordingly they are catering to the needs of the farmers.
- Increase in outreach where public extension system is weak. There are many places where the public extension system is very difficult to reach, specially in the hilly areas, in the desert areas, in the States of Jharkhand or Uttarakhand or the North-Eastern States, where the public extension mechanisms are relatively weak, wherein the private as well as the community based organizations are taking care of such issues.

- Provision of newer technologies and skills to the farmers. So the private agencies can easily cater to these issues.

These are all the strengths of pluralism.

Weaknesses

Then coming to the weaknesses of pluralism.

- So there is a possibility of duplication of effort, which the public institutions are also taking up, and at the same time the private institutions are also taking up the similar efforts. So this is one of the possibilities.
- This is very very important, that is the contradictory information flow and the resultant gap among the end-users. Specially we need to be very careful about the information flow of the private agencies, because their motto is the maximization of the profits. Then so there are possibilities of creating some hype regarding the products. Such things we cannot expect from the public agencies. Because once the information has to go to the farmers, it has to pass through various channels, wherein the information; the validity of the information, the reliability of the information is being checked by various agencies, which is not possible in case of the private agencies. So this is one of the weakness of this particular concept.
- Problem with the quality of the message from the public agencies. Whether we are satisfying the demands of the farmers or our clients is one of the issue, which is largely very weak in case of public extension system.
- Motives and objectives of all agencies may not be aligned with the needs of the farmers. Farmer is in need of something else, but as a private agency or as a community based organization

or as a non-governmental organization my priorities are something different. So under such circumstances, there are certain gaps that might be existing between these service providers.

- It makes the extension system more complex, because of number of players that are coming on the same platform and making use of the same concepts of extension. So that is how the extension concept is becoming a bit complex in this case

Opportunities

But now what are the opportunities that we can find here.

- To harness the synergy of all the actors through convergence. Even though the problems what we have counted, the weaknesses what we have counted. We can solve these things once we come on a common platform. This is what is opportunity that we can think of, and address the issues and we can sort out the issues that yes we are going to take up these issues, and you will be taking up these issues. So like that we can address these issues.
- Delineation of the roles of each and every agency or actor to avoid the duplication of efforts. In the weaknesses we said that there might be chances of duplication, but if we are on a common platform, we can resolve these issues, we can avoid duplication also.
- Offering choice to the farmers among different agencies. So that let the farmer choose whether he wants the services from the public agencies or a private agency or a community based organization or an NGO so that we can provide them services accordingly.
- Enhancing the participation in case of extension programs is one of the opportunity, because as on date the real

participation of the farming community in the extension programs is relatively less, but with pluralism we can enhance this participation.

- Public extension can lead to a pluralistic extension system. Because being part of the government mechanism, they can take the lead and they can lead these pluralism issues and they can take the private and various other actors with them.
- Potential to create a linkage of the farmers with other actors and across the value chain. So that once the government takes the lead or the public institutions take the lead to lead this particular concept of pluralism. So then automatically things can take a different shape. This is what is an opportunity.

Threats

What are the threats that we can predict.

- Lack of effective coordination among the agencies. Which we are already observing this and over a period of time it may emerge as a threat also.
- Absence of platform for coordination. Some efforts are being carried out through ATMA. But still lot needs to be done in this sector.
- Efforts of collaboration without imbibing the spirit. Specially it happens with the nongovernmental organizations as well as the private sector organizations. So the spirit of extension should not be compromised, while providing the services.
- Mismatch between the organizational agenda and the problems due to the hidden agenda. So commonly we observe such things in case of the private agencies. Their agenda is profit maximization, but the agenda of the public institutions is the development of the society, enhancing the living standards of the farmers. So there might be mismatch between these

agendas. The hidden agendas as well as the declared agenda.

- Lack of leadership and the conflict resolution mechanism. That may hamper the effective collaboration. Because when these institutions are to come together. Even though their target groups are same. Their commodities are same. The way of delivering the mechanisms, all are common. But whether these institutions are ready to come together or if there are any conflict that exist. So do we have that conflict resolution mechanism. This is what is the biggest issue which is acting as a threat.
- Political and economic aspects preventing the collaboration. Because the motto of the private agencies and the motto of public extension agencies are diagonally opposite. So that is what is one of the hindering factor.
- Doubt about the sustainability of the government promoted convergence initiatives is creating another threat in case of pluralism in extension.

If you look into this particular diagram. So the services that we are trying to provide, is the client whom we call him as the farmer. He needs the services. The services can largely be identified as the services to be provided by the extension educators and the services provided by extension service providers. So when we look into the extension educational efforts, they are being taken up by the State Agricultural Universities, the international agencies, the ICAR institutions, the private agencies, the line depts, the non-governmental organizations, cooperative societies. Number of institutions which are involved in educating the farming community.

Similarly when it comes to the service. So the institutions which are involved in the service. That maybe the department of rural development, the cooperative institutions, the state agricultural universities, non governmental organizations, ICAR institutions. So ICAR institutions through their KVK's as well as the projects, they

are reaching the farmers. The line depts, international agencies and the private agencies.

So again I would like to draw your attention here. The institutions that what we discussed under the extension education as well as extension service are almost similar. But so this is what is leading towards the pluralism. The input services are being provided again by line depts. They are also providing lots of inputs to the farmers. Then ICAR institutions are also providing inputs to the farmers. Cooperative, then state agriculture universities, private companies, NGO's. They are all involved in the inputs and at the same time the information services. So which is again the domain of the public extension agencies. And at the same time private players are also coming there, the similar institutions are there. So this is what we are emphasizing on. Similar services are provided by a number of institutions, where now ultimately the farmer is getting confused; which kind of services is to be accepted and which kind of services not to be accepted.

Interesting Facts About Websites

Information and communication technologies are playing a dominant role here. So by creating number of websites. Just to put before you the latest data. So there are about 1.5 billion websites available by January, 2019. So this shows the number of service providers specially in case of with e-mediation, apart from the traditional medium what we have discussed so far. So if you look into the fate of these websites, only 15% of them are active. 85% of them are not active over a period of time. This is what the report says. And out of this more than 85% of the websites are mobile friendly. It means this is an opportunity for service providers, as well as the service receivers. So Google itself has indexed about 4.5 billion pages on an average 3 web pages per website that we can say

so it has index. So knowledge repository is getting ready. But the service receiver also should mend himself to get these services.

But if you look into the information that is available in the language wise. English is dominating. But in case of India so there are multiple languages that are being spoken. So none of these Indian languages are dominating the websites. So this gives an information for the extension mechanism, that so there is a need for development of the content in the local as well as the regional languages, otherwise we cannot provide the appropriate information to the end user.

Conclusion

To conclude, we can say that e-mediation promotes pluralism. The number of service providers. So they can make use of this e-mediated platform by developing content in the regional as well as the location specific information. So it can promote the pluralism. And the associated risk factors need to be taken care of by the institution itself and at the same time the receivers are also playing a role by accepting that information. Then extension professionals face challenge in content development suitable for the e-mediated extension, because there is a lot of information that is available, but now it needs to be treated for suiting to the needs of the farming community. So that is where the role of extension is coming. And wherein again we can make use of the number of players and ultimately we can provide them the appropriate services. In the next session we will be talking of the challenges in ICT application in agriculture.

Thank You.

Download

PDF: Pluralism in Agricultural Extension

1-4 Basics of Communication and ICT – Challenges in ICT Application in Agriculture

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Hello friends. In our last interaction, we discussed about information needs of the farming community. The differences between data, information and knowledge, and various issues associated with it. In today's discussion we will be discussing about the challenges in ICT application in agriculture.

Digital Literacy

When we look into the challenges, the first and foremost challenge we come across is digital literacy. To what extent the stakeholders of this ICT application in agriculture are digitally literate. The digital literacy as defined by Wikipedia as

- "It refers to an individual's ability to find, evaluate and compose clear information through writing and other medium on various digital platforms".

It is indicating towards the ability of the extension professional to develop the content which is suitable for the digital platforms. So

enough information is available. But based on the needs of our end-user, how can I design the content that is suitable to the digital platform; as well as it can meet the demands of the receiver. So this is what is the biggest challenge before the extension professionals which we call it as the digital literacy.

Availability of Location Specific Content

India being a vast country, starting from Kashmir to Kanyakumari and Gujarat to Arunachal. The number of languages that are being spoken, and the number of agro-climatic situations the country has. Earlier we were talking of the National Agriculture Research Project. We divided the country into different agro-climatic zones and agro-climatic regions. And we used to develop the technologies based on the agro-climatic zones. But now the mechanism has shifted from development of technology based on these agro-climatic zones to situation specific agricultural extension services.

The situation based extension services. Under such circumstances the development of content which is suitable to the locality is one issue. Then the second issue is that content should be in the regional language. And to move one step ahead, we should think of development of the content in regional dialects also. There is one beautiful experiment that we will be discussing under the heading of 'Digital Green' which has done lot of work in this direction. But how many such institutions and institutionalized efforts are there in this direction is a major issue.

If you look into the current content that is available on the Web, English is the dominating factor. But how many of the Indian farmers are compatible with the contents that are available in the English language. So this is what is the major issue. So the local languages as well as the dialects should be given emphasis, which is the major challenge before the extension professionals in using the ICT applications in agriculture. The vernacular language or the

regional language development of the content is one of the issue, I have already said. And the content should be in such a way that it should satisfy the needs of the end-users or the client system.

When I talk of client system, it is not only the farmers. It is the service providers are also coming into the picture. So how can we satisfy the needs of these people as far as content in the regional as well as vernacular language is considered.

Traditional Use Behavior of Farmers

The traditional use behavior of farmers. As on date more than 120 crore people in India are using mobile telephones. About having said this it means almost every individual in the country is having an access to the mobile. But how are they using this mobile. One small survey that is conducted in the district Varanasi in Uttar Pradesh, which in the 2019 reveals that every farmer is having a mobile, but they are using, only 28 farmers out of 150. These 28 farmers are using the mobile for the purpose of getting agricultural information by making use of Internet. It means they are using the mobile but the purpose is traditional. Maybe for making the calls or maybe for the entertainment purpose. There are a number of other purposes that they are using, but for getting the agricultural information they are not that familiar with. If you look into the behavior of these 28 farmers.

So maximum farmers are getting the weather forecast through this mobile. So number of agencies are there which are providing the weather forecast, and what kind of weather will be there in the coming 2 to 3 days. So that kind of alerts that they are getting through their mobile. And about 23 farmers are getting the news related to agriculture. And 24 farmers are getting the market related information. So this is what is the small survey just I am trying to put before you is. So this what shows the traditional use behavior of the farmers. And similar results that we find in different parts of the

country. So this is one of the biggest challenge before making use of the ICT applications in agriculture.

Unidirectional Mode of Information and Delivery

Then the unidirectional mode of information and delivery.

- Majority of the websites are unidirectional in nature. It means you can get the information, but there is no provision for asking the questions and getting the response from the source. But such provisions are there in case of Web Portals. But the number of Web Portals are yet to be developed. There are certain examples that I will be discussing in our subsequent contents. But the number of such efforts are very less and this is what is one of the important challenge.
- Two way interaction is essential for understanding of the end-users. So that is why they are emphasizing on the interaction with the scientist or the concerned professional, so that they can get their doubts clarified.

Trained Extension Professionals

Trained extension professionals for providing the services related to the farmers, making use of information and communication technologies.

- So this training of the extension educationists is a different issue.
- And at the same time training of extension service providers is another issue.

When we are talking of training the extension educationist. It means

that they should be well versed with the concepts of communication. The concepts of development of the content in the regional language. And making use of those contents by the end-users are the various issues. The content analyses of the content, that is what the scientists are providing. So these are number of issues that extension educationists are focusing. And the content what we are delivering; number of such issues. But when it comes to the extension service providers, who are developing these processes, who are looking into their own specific subject matter area.

They are providing the content to the extension educationists, and designing and modifying the content as per the needs of the farmer. So that is why both these groups of professionals need the training. This is what is another challenge before the inculcation of ICT applications in agriculture.

Social Factors

- A number of social factors like technophobia, there are many farmers, who are not using this technology just because of the phobic factors. We don't want to use such type of things. So these type of feelings that the farmers are having.
- Negative attitude towards the technology. Specially forgetting appropriate information related to the agriculture and allied sciences.
- The demographic factors such as the age. The old age farmers doesn't believe in getting the right information from using the sources. Then the less educated people are not that conversant with understanding the technology through e-mediation, so these are some of the social factors.

Other Key Factors

- Some other key factors which influence the process of delivery of information, and ultimately are posing as a challenge for making use of these ICT's in agriculture. That is what is the scaling up of ICT in extension services. Number of efforts are being made as I have already said. 1.5 million websites are there but how many of them are really focusing on agriculture, that is in the regional language, that is in the local dialect. This is what is one of the issue. This is how the scaling up of extension services is another issue.
- Finding sustainable business models is one of the issue. Number of institutions are working on this but none of the mechanisms are yet to emerge out of these activities.
- Then integrating traditional media with new ICT's in extending the reach of this extension is one of the issue, because when we talk of ICT the farmers are already familiar with the traditional ICT's like maybe radio or TV. But when it comes to the use of Internet for the purpose of getting agriculture related information is one of the challenging factor. So that is how the integration needs to be taken up there.
- Capacities of farmers to search the information. Then how to get the needed information. For which what kind of keywords that I should use, and what are the different browsers that I can think of and what are the different destinations that I can think of. So this is another important challenge that the farmers are facing.
- Even if the information is simple and the message is fast and timely. Reception depends on the farmer's understanding of the phone, computer or any other medium that is used. So what kind of personal digital assistants that I am using in accessing this information and how familiar I am with these PDA's, and what kind of information that I can digest from these different sources. So this is another important issue.

- Customization is the key requirement for sustainability. So the customization depends on my receivers. How I am customizing the content according to the needs of my receivers is another important challenge before the extension professionals in integrating these ICT applications in agriculture.

Conclusion

To conclude we can say that ICT's can offer opportunities to improve the quality ofe-extension advisory services. It has both positive as well as negative aspects. But if you look into the advantages, so definitely they outweigh the disadvantages. But the only thing is the involvement of the farmers and the other stakeholders into this particular effort, so that we can make efficient use of the information and communication technologies in providing the extension services in particular and agricultural development in general. With this we will be concluding this discussion. In the next discussion we will be talking of market led extension.

Thank You.

Download

PDF: Challenges in ICT application in agriculture

1-5 Basics of Communication and ICT – Market Led Extension

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Hello friends. In our previous discussion, we discussed about various challenges in integrating ICT's in agricultural extension services. I hope now you are sure about the problems that we are going to face if at all we want to make use of ICT as an instrument for agricultural extension services. In the context in this discussion we will be talking on the Market Led Extension.

If you look at the population which is coming under middle class between 1990 to 2030. The data reveals that the phase of 2015 to 2020 is very crucial and after that it is going to increase like anything. It means the income levels of the people are increasing. And at the same time the food demand is also increasing in a similar way. But the major issue with the professionals related to agriculture and allied sciences is, so of the cost what the consumer is paying. So what is that the farmer or the primary producer is getting.

In case of developed nations, whatever the consumer pays for a particular agricultural product, 50% is going to the farmers; but in the Indian context what the consumer is paying, only 25% is going to the farmer. So this particular issue is one of the dominant issue, because of the lack of marketable surplus specially with the farmers. Then inconsistencies in the yield of the farmers. And inconsistency in product quality is another issue. Because of the small

landholdings, every farmer is going for the different varieties. And that is how the quality cannot be ensured in the similar way.

These are some of the issues. So it means, now we are trying to analyze the market, market demands and the problems at the farmer's level, so that we can take care of them. So this is what is the core issue in case of market led extension. With the globalization, the process which started in the 1990's; so there is need for paradigm shift in the behavior of the farmers. From mere producer to seller to now the farmer should translate himself to the producer-cum-seller in a wider market. It is not that he is totally dependent on the local market. Maybe at his working place or the nearby district of the town; he has to think of the wider market, so that he can realize the better returns on the investments and the risks.

The issues in marketing of agricultural produce include

- The adequate and quality supply of cost effective delivery of input supply is still an issue for the farmer. We are talking of the marketing of the produce. In case of getting the inputs also he is having lot of problems.
- The sale of marketable surplus is not remunerative. Reasons that we have already observed.
- Plenty of distress sale that is going on in the market, because he is not producing as per the demands of the market. So that is where the role of market led extension comes into the picture.

Need

- The need is to translate or to convert the production led extension into the market led extension.
- Orientation of extension system, with the knowledge and skill related to the market. It means the extension professionals, who are talking more of production related issues; now should talk more on market related issues also, but there is a need for training these extension professionals also.
- Minimization of the production cost, by using the latest production technologies is another issue.
- Introduction of export oriented products. It means we are studying the market, we are observing the market and accordingly we are trying to design our production plans, so that we can realize the best possible remuneration.
- Modernization of wholesale market or the new markets with the new agricultural policy. The government has already launched a number of initiatives in this regard. Maybe in the form of introduction of Agmarknet or in the form of introduction of e-NAM, then Seed Portal; number of such initiatives are initiated, but the issue is, how end-users are responding to these initiatives.

Objectives

The objectives of this market led extension include.

- Conversion of the agricultural sector into profit oriented business. So this is what is the basic objective, with which the concept of market led extension has been introduced.
- In addition to that strengthening of the research- extension-farmer linkages, between various departments at various levels. The moment we emphasize on these relations, it means

there is more interaction between the source as well as the receiver. The scientific system, the extension system and the receiving system or the farming community. As there is more interaction, so there will be more changes.

• Strengthening of the market linkages with the farmers. So this was never an objective

prior to this. But with introduction of concepts like market led extension. The role of

information technology application in agricultural marketing is increasing number of such

efforts that are coming in this direction.

- Wider use of electronic mass media for agricultural extension. I am sure you might be aware of the number of TV channels, including Doordarshan, ETV and number of other channels are displaying the products of market trends as well as the prices of various agricultural commodities that are being sold in that particular day. What is the variety and what was the arrival and what is the price that was quoted for that. Number of such things are appearing in the TV. And in the radio also they are broadcasting the information. and newspaper invariably contain these information.

With use of these things, the farmer, the primary producer can easily analyze the market situation, how the products are moving in different markets and where the prices are being quoted, and where the prices are maximum and where the prices are less. So that is how he can plan his marketing strategy.

Required Information to Extension System and Farmers

The required information to the extension systems and the farmers. There is a huge list. So until and unless we get this information, we

cannot develop the appropriate strategy. So which include like the market price of the crops, this is what we have already said, and availability of inputs, usage of inputs, credit facilities. So number of informations need to be collected by the extension mechanism. And once these informations are collected, this is what the another challenge, and that has to be put into appropriate direction so that we can come out with the marketing strategy.

Roles of Agricultural Extension in Light of Market Led Extension

The role of agricultural extension in the light of market led extension is

- Conducting the SWOT analysis. What are the strengths, weaknesses, opportunities and threats, specially related to the market.
- Organization of farmers into Interest Groups. So this is the biggest role the extension worker has to play in organizing the farmers.

Just I would like to recall the success story of the AMUL, which you are already aware of. Where if the success we can harvest in case of the product like milk. Why not in other commodities? So the success that has or there is already a role model. So now there is need only replication, modus-operandi is already there. It needs to be replicated by organizing farmers into groups.

- Capacity building of local groups. As we are talking of training the extension professionals as well as researchers. Similar efforts have to be taken up in case of the farming community also.
- Enhancing communication skills of the farmers so that they

can become the better negotiators in the market.

- Establishing marketing and agro-processing linkages between the farmers groups, markets and the private processors. So once these three actors come on a common platform. So obviously they will get the benefits of that.
- Advice on product planning. The farmer should think of the direct marketing, instead of going through various established channels, wherein intermediaries are harvesting the benefits of the efforts of the farmer, as we have seen in the beginning of this discussion. That more than 75% of the cost that is paid by the consumer is going to the marketing channels or the people who are involved in the market. So this 75% the farmer should target with an idea of direct marketing.
- Regular usage of Internet facility can give them the appropriate information, which is needed by the farmers.

These are the different roles which are to be played by the extension agencies.

Problems

The problems in this market led extension include.
  The problems related to production is

1. seasonality of production—because agriculture being a biological system. It has its definite gestation period. And the primary producer as well as the marketer has to bear with that.
2. Perishability of the produce. There are many produce specially the vegetables, the milk, the fish. So the perishability is an issue. And before it is spoilt, it has to be marketed.
3. Bulkiness of the production. So these are some of the problems associated with the agricultural commodities.

The market related problems include.

1. Non availability of the market intelligence, which is one of the important issue. What is this market intelligence. Appropriate information regarding the market prices, the trends, the demands that are happening in a particular market. In a particular market there maybe lot of demand but there is no supply. But there are people maybe staying nearby, maybe cultivating nearby. They are not having that right information, so that is why they are not able to market their produce. So this is what is the issue of market intelligence.
2. Existence of many middlemen is one of important problem. So that we are already aware of.
3. The inferior quality of produce is another issue in the market.

Problems related to extension include.

1. Lack of communication skills of the farmers, who are the primary producers. That is why they are not able to bargain in the market.
2. Lack of credibility of the farmer. They may commit something but they may not keep those words in due course of time.
3. Insufficient information related to the market is another issue related to the extension related problems.

Paradigm Shift from Production Led Extension to Market Led Extension

Now let us look into the paradigm shift from production led extension to market led extension, where exactly the differences lie. In case of the purpose if you look at the production led extension is emphasizing on transfer of technologies. Traditionally the extension agencies are involved in these activities. But in case of market led

extension the emphasis or the primary objective is optimum returns. It is not the transfer of technology, whatever the technology that you are using, but it should give you optimum returns.

The expected result is the adoption of package of practices in case of the production led extension. But in case of market led extension we say that it should, the production process should end with high returns. Then only we can say that a market led extension has happened.

Farmers are seen as progressive farmers in case of production led extension. As an method of extension we try to identify a number of farmers as a progressive farmers. And we try to provide them all possible supports. But in case of market led extension, the same farmer has been identified as the entrepreneur or an agripreneur (agricultural entrepreneur). The basic difference between the entrepreneur and the progressive farmer is, number one,

1. He is going to adopt a number of innovations. He is going to bear some amount of risk and he is going to create number of opportunities. He may be in the production, in the processing as well as in the marketing. So these are some of the basic differences when we try to identify an individual as an agripreneur or an entrepreneur.

The focus in case of production led extension is seed to seed. We have given you the seed and you should produce the seed or ultimately the grain. But in case of market led extension, what is your investment and what is your return. If you have invested rupees 1, so what is the thing that you are getting back. It is 1 or 1.5 or 2 whatever it is.

The technology in case of production led extension is a fixed package of practices for every agro-climatic zone. But in case of market led extension it is totally depending on the demand of the farmers. So as the farmers are demanding something. It means if I want to satisfy that demand, I should have the basket of

technologies, I should have more number of options. Then only I can satisfy the needs of the farmer.

The extensionist's interaction is limited to the training or motivation of the farmers in case of production led extension. But in case of market led extension it is the joint analysis. The joint analysis leads the issue that; once the farmer is becoming the part of the planning process, part of the decision making process automatically, he adopts the innovation that he is planning with.

The linkage in case of production led extension are limited to the research-extension- and the farmer, but in case of market led we are adding the element of market also to strengthen the farmers.

The role of extension is only delivery of information and getting the feedback. But in case of market led extension it is establishing the market linkages as well as the processing related linkages.

In case of production led extension record keeping is not given much importance. But in case of market led extension it is very important, because we need to calculate the cost-benefit ratio. Until and unless the farmer cannot understand the relationship between these two.

The information technology in support in case of production led extension is emphasizing on the production of the technologies or how to provide appropriate information. But in case of market led extension the market intelligence is playing the dominant role which is going to provide us the information related to the price trend, then demand position, current prices, market prices etc. So these things are going to strengthen the decision making ability of the famers.

There are certain efforts that the government has already taken up to promote the concept of market led extension, which includes the e-National Agricultural Market. Then the Farmer's Portal, developed by the Ministry of Agriculture, Agmarknet. This is especially for the tribal farmers. The Tribal Cooperative Marketing Development Federation of India Ltd. Then another effort Seed India Portal, developed by the Ministry of Agriculture(Govt of India). Then Farmer's Portal by the Ministry of Agriculture, and M-Kisan, another

effort by the government. So these efforts are indicating towards the government's involvement in promoting the concept of market led extension.

MLE — Challenges

There are certain challenges the market led extension is facing.

- That includes the rapid change in the information technology and need for collection of relevant information. So whatever things that we are planning. It is not going to last for longer, because of rapid changes in the technologies. And accordingly the extension mechanism has to adjust itself to the changed situation. This is what is the biggest challenge.
- The generation of data and the market intelligence is another challenge before the extension professionals. How to gather the data related to the market. Then the interlinking the market with the line departments.
- Reorganization of extension system is very essential to suit to the market led extension and to suit to the changes in the market.
- Strong communication skills with the credibility of an extension professional is another challenging factor in case of market led extension.

Conclusion

To conclude we can say that the focuses of extension functionaries need to be extended beyond production, which traditionally we used to have. Now it should focus on the market needs, the farmer's

needs and with an objective of enhancing the income levels of the farmers, which is the focus of the established governments also.

Thank You

Download

PDF: Market-led extension

2-1 Journey of ICT applications in Extension Service – Community Radio

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Brief Introduction

Hello Friends, I am sure you are enjoying the discussions on e-Extension. In the first week we discussed about the basics of communication and information-communication technologies, wherein we tried to discuss about the concept of human communication, information needs of farming community, pluralism in extension, challenges of integrating information-communication technologies for agriculture and agricultural extension and we talked about market led extension. So the things that what we have discussed so far. If you have any questions, I request you all to be part of the forum activities. You can keep your questions. You can put your questions there. So that questions will be answered by meor if you have anything to share or anything needs to be modified, or anything that you feel interesting, just you can share so that it is a learning opportunity for all of us.

In this week we will be discussing about the journey of ICT application in agriculture. So it had its beginning, way back in early part of this 20th century. We started this journey with the radio. Later the concept of community radio was introduced. We will be

discussing about that. Then we will be discussing about the concept of e-readiness, then AGMARKNET, Hole in the Wall and Knowledge Management initiative; the concept of knowledge management. So this is how the journey of inculcating this information-communication technologies in extension services made a beginning.

Functions of Mass Media — Dysfunctions of Mass Media:

So in the first topic that we will be talking of the community radio. Before we exactly enter into the concept of community radio, let us look into the functions as well as dysfunctions of mass media. When we look into the functions of mass media,

- It has a basic function of delivery of information to the masses. It is being done by the mass media.
- And through providing appropriate information, it builds the social leadership as well as prestige among the members of the society.
- And another important function of mass media is to provide entertainment
- And it transmits social heritage, so that the generations are going to remember the socialcultural aspects of a society, community with the help of the media.
- And it also involves propaganda activities, which are paid in nature, which are being promoted by an individual or an institution, specially the private sector organizations
- It also helps in cultural growth.
- And it helps in socialization function in case of imbibing social norms, customs etc etc.

So these are the functions of mass media. In addition to these functions, there are certain dysfunctions of mass media also.

- The first dysfunction of mass media is narcotizing dysfunction, which can largely be understood by the process of substituting talking for doing. We became resistant over a period of time regarding that particular issue. We keep on talking about this, we keep on discussing about this but we don't do anything in that direction. So that is how we try to narcotize ourselves with the media, and media is playing that narcotizing role.
- Then monopolization is another dysfunction of the mass media, wherein it tries to dominate over the behavior of the members of the society.
- The third dysfunction is the canalization. It tries to form the attitude of its listeners, viewers, readers in a particular direction. So that is how we say that it is canalizing. If you can observe the behavior of the media, they are supporting a particular ideology, and they are opposing a particular ideology, because they like it or they don't like it. But largely the interest of the masses are being sabotaged in this particular process.
- The next dysfunction is the inoculation, which can be understood as the procedure of making an individual resistant to the counter propaganda. For example, we talk many things about the corruption. Even though prima-facie we all feel that it is a bad thing, but given an opportunity, everybody wants to be part of that, so that's what is the inoculation effect. So we try to make it part of our behavior. So that's what is the inoculation dysfunction of mass medium.

Democratic Participant Media Theory – The Principles of the Theory:

So with this now let us move on to one theory which says that democratic participant media theory. There are a number of theories related to media. But one relevant theory which is supporting the democratization of the media. So that we will be discussing, which is known as democratic participant media theory. This theory emphasizes on the needs and interests as well as aspirations of the active receiver in a political society. Each and every member of the society should be taken care of; his needs as well his interests; in the sense that, so he has a right to communication as well as he has the right for relevant information. Both these things are ensured in this democratic participant media theory, for which they propose that there should be small scale settings of community interest groups and subculture, which are interested in the media activities. So that's what is the part of this theory.

So the principles of this theory include, the individual citizens and minority groups have right to communicate. And that is why they should have the freedom to be part of these media activities. Then groups, organizations and the local communities should have their own media. So that is how the concept of community radio came into existence. The organization and content of media should not be the subject of the centralized political or the State bureaucratic control. It means the local communities have control over the contents that is to be broadcasted in the media. And in a local setting the media contents are being organized under the control of the societies.

Then the small scale, interactive and participative media forms are better than the large scale, one way and professionalized media. For example, if you have Doordarshan or if you have All India Radio at every district headquarter; how many people can be part of the activities of these institutions. But the moment we start

decentralizing them at Panchayat level, at village level, at cluster level, so that maximum number of people can be part of the media activities. So that is what is the idea behind.

Radio:

Now let us have a brief history of development of radio.

- The potentials of radio include. It has a vast potential for communication.
- Because in the language of development it is said that if you are going to disseminate the appropriate information, that itself is equivalent to development dissemination, because the right information can bring right change. And that change we try to identify as the development.
- And radio is one of the low cost medium of communication, affordable to everyone. Nobody can say that I cannot afford radio.
- And it is effective and widespread. Use of radio motivates us to harness the potentials of radio.
- Radio broadcasting in started in India way back in 1927, with 2 privately owned transmitters in Bombay and Calcutta. So that is how the beginning of the radio was there.
- All India Radio was established in 1936. And it renamed as Akashvani in the year 1957.
- The first news bulletin was broadcasted on 19th January, 1936.

So these are some of the historical aspects related to radio.

What is Community Radio:

Now we will be moving on to the concept of community radio. Radio we are all aware of, but what is this community radio and how can we make use of this concept of community radio in extension services is the issue here.

- The radio which is by the people, for the people and of the people can be identified as the community radio. So this is what, with the help of a theory we tried to explain that. It is small scale settings at the village level. Participation of the members of the community. So that's what is being ensured through this concept of 'by the people, of the people and for the people'.
- And it is extraordinarily invisible medium. So with a only one room kind of a setting, so we can reach the entire population.
- And it gives voice to the voiceless, because there are talents everywhere, in every corner of the country, but they are not getting opportunities. Through such platforms we can provide opportunities to them.
- And a community resource and a storehouse for traditional knowledge and culture. With the programs that are being produced over a period of time. So that becomes the storehouse for the maintenance of the culture of that particular region.

Community Radio Policy in India:

The community radio policy in India had its roots in the judgement of the Honorable Supreme Court in the year 1995, wherein they said that the airwaves are the public property, and to be used for the public good. Earlier it was under the control of the public sector, but with the judgement of the Honorable Supreme Court it became a

public property. And that is how the radio waves; the private players also started coming up in the using of radio waves.

- The first community radio guidelines were issued by the Ministry of Information and Broadcasting in the year 2002.
- And in the year 2006 the broader policy guidelines were launched, which motivated the individuals, institutions and the communities to establish the community radio concept.

The C.R. Policy (2006):

The policy of the community radio which was instituted in 2006, said that

- Non-Profit organizations, educational institutions registered for more than 3 years are eligible for the establishment of the community radio.
- And they should serve the specific purpose of a local community.
- Then community radio ownership and management structure should be reflective of the community that it is going to serve. So whatever the area that you are going to select, whatever the locality that you are going to select, that should be reflected in the radio programs also.

So then the question comes, who are eligible people

- Registered societies and autonomous bodies.
- Public trusts registered under the Societies Act.
- As well as the educational institutions are eligible bodies, who can own the community radio.

Now the question arises who are not eligible to own a community radio.

- So basically the individuals are totally discouraged from this because the activities that are being proposed thought this community radio are on a community basis. So that is how only the institutions are getting the permission.
- Then the political parties and their affiliate organizations. Because the community radio is not meant for promoting any political idea. So that is why the political parties are being kept away from this.
- Then organizations operating with a motive to earn profit. That is the business organizations or the corporate organizations, cannot get the permission of community radio, because profit maximization not serving the society.
- Then organizations expressly banned by the Union and the State Governments, cannot own the community radio.

So these are the institutions who cannot own the community radio. But rest other institutions are there.

Funding and Sustenance:

Then what are the funding as well as sustenance of the community radio

- The government does not have any schemes to fund the community radio stations.
- But the Ministry of Agriculture keeping the interest of the farmers as well as the farming community in view. And through Krishi Vigyan Kendras, so they are promoting the concept of community radio.
- Then the international organizations like UNICEF and UNESCO, are funding the community radio stations.
- Then capital cost and running expenditure to be borne by the community radio operations. Whatever the small scale

programs that they are operating and the fund generated through advertisements are becoming the source of funding.

- Then advertisement is permitted only for 5 minutes per hour of broadcast. So it is not that advertisements should not dominate the main programs for which the community radio has been established.
- And whatever the revenue generated that is rolled back for maintenance of this community radio.
- Then sponsored programs only by State and Central Govts. Because they are also providing certain funds through these activities. So that is how such programs are accommodated here.

So this is how the funding as well as sustenance of the community radio is going on.

Challenges:

The challenges before the community radio include.

- Building a sustainable business model, because the reach of these community radios is having a very limited area of maybe 5 km range or 10 km range, in certain cases it is 30-40 km range. But whatever the advertisements or the operations means the programs that what we are broadcasting through this community radio. So it is having that limited reach, so that is how generation of funds is itself one of the challenge. That is how we are not able to develop that business model.
- Then involvement of women and marginalized is becoming a problem. Even though the basic purpose behind establishment of community radio is to make such disadvantaged sections of the society part of this program, but still it has become a challenge.

- Then finding NGO's with the right philosophy is another issue. Because when we talk of non governmental organizations, there are good number of positive aspects at the same time equal number of negative aspects are also associated with these NGO's. What is their intention; that is dominating here.
- Then relevant training and capacity building is one of the important challenges, because we need trained technical manpower for operation, for program production, for editing and for broadcasting. So that is, availability of such trained manpower itself is another issue.
- Then building local support, structures as well as networks is another problem, because community may or may not support such ideas over a longer period of time.
- Then building local maintenance and support is another issue

And put together we can say that the biggest challenge is **ensuring the community ownership** of this community radio, itself is a challenge but given an opportunity it is an excellent instrument

Examples of Community Radio:

Now coming to the examples of certain community radio.

- The Delhi University took a lead in this regard. And you can see the number of programs that are being operated by this Delhi University community radio. the different programs that are being operated, by the students that includes a range of programs, wherein the students are party to that and it is an excellent learning opportunity for each and every student to be part of that.
- And the format of these programs include

    o Interview. Maybe the successful student or a prominent

teacher, or a successful professional is being interviewed.

o Then straight discussion with the students or the faculty members etc.

o Then students are designing certain dramas

o And what is the opinion of the majority regarding a particular issue. That is the current issue. So that is also being broadcasted through this media, through this radio.

o And the poetry and other cultural aspects are being taken care of.

Now coming to certain examples in different parts of the country, how they are operating. So this is the community radio that is being operated in the State of Karnataka. So which said that Kelu Sakhi (Listen a Friend), so this is what is the translation of that. So which was launched in Dec, 2006 with the support of IT for change, an organization based at Bangalore, and Mahila Samakhya of Karnataka which is autonomous body of the State Govt. So put together they started organizing these community radio programs. The dominant programs that they organized, include the educational programs, health programs, political institutions and the capacity building etc. were the program formats that they organized.

Then coming to the community radio that we can find in Gujarat, that is Kunjal Panchi Kutchji, so that is the Gujarati name. So an NGO, that Kutch Mahila Vikas Sangathan took the lead in launching this community radio station. The focus is on the participation of the women in the village level Panchayats.

Then Namma Dhwani is another community radio. Which was launched in the Kolar district of Karnataka in March, 2003. The listeners of the community radio, basically the illiterate women. The programs are produced for them.

Another example of the community radio include, that is Mandakini ki Awaaz. So this was launched in the State of Uttarakhand. Basically it was supported by the UNESCO and the local NGO's. So these are the institutions which are coming up for the establishment of community radio. So let us look into some more examples. So Anna community radio station. So basically

Educational Multimedia Center, Anna University launched this program. This institution in Chennai, Tamil-Nadu. And another example from Rajasthan, APNO Radio. And another example from Tamil-Nadu, Sivanthi Community Radio station. And Radio Active CMS Radio in the State of Lucknow, Uttar Pradesh. And VidyaVani, the Dept. of Communication Studies, University of Pune, launched this station. Then Vishnu Community Radio station in the State of Andhra Pradesh. Again another station from Gujarat and one more station from Pune, Maharashtra.

   So it means that there are a number of community radio stations that are coming up. But looking into the target, the achievement is very less. Maybe motivating the society, participation of the people are some of the key issues in the establishment of this radio. Because if you look into the figures, right now in India we have around 400+ community radio stations. But the similar number is also observed in our neighboring country Nepal. So looking into the population as well as the geographical nature of Nepal. So the number of community radio stations are more in Nepal compared to the Indian context.

Conclusion

- To conclude we can say that radio has the potential to reach the actors of development, which we call them as the society, the people, the farmers etc etc.
- And it is easily accessible, affordable and there is no need of additional skills in operation of the radio, in making use of the radio, in getting the benefits of radio.
- The challenge of appropriate content development for farming community is there. In view of their needs is the biggest challenge that the community radio is facing. We hope over a period of time we can overcome these things. And we can make it a reality.

With this we are coming to the conclusion of this discussion, and in the next discussion we will be taking it up on the concept of e-readiness which is very interesting topic. How you can be e-ready. And what are the indicators and the elements of e-readiness, that we will be discussing.

Thank You.

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PDF: Community Radio

2-2 Journey of ICT applications in Extension Service – e-Readiness

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Brief Introduction

Hello friends. In our last interaction, we discussed about community radio. And I am sure by now you are aware of the potentials of community radio, and how it can be an effective instrument for providing extension services in the days to come. In today's discussion we will be taking up the concept of eReadiness for extension professionals

Technology Mediated Technology Transfer System:

When we look into the models of technology transfer over a period of time. The technology was a dominant factor, and it was transferred to the section of the society at large and the ultimate results were the partial adoption, the non-adoption of the technology. So when the development workers, the extension professionals as well as researchers started working on this; on why

people are not accepting these technologies or why there is a partial adoption. So then they came to the conclusion that, there is one important element that is missing, that's what is the human element or the participation of the people.

Hence another set of model we try to identify it as the Extension Mediated Transfer of Technology Model, wherein again the technology was developed by the researchers. And before its transfer the element that was included was the human element and we inward in the process of technology transfer. But the results did not vary from the previous one. The reasons behind again, when we started pondering upon. So we came to know that the people are not being part of the technology generation system. People are not being taken into account, while development of the technology and while taking the decisions on the development of the technology.

So that is why so now we are all aware of the concept of participatory prefix in good number of research and development initiatives. Let me quote some of the things. Earlier we used to say that it is technology development, but now we started telling that participatory technology development. Earlier we used to say that breeding of the crops, but now we are telling that participatory breeding. Earlier we used to say that watershed development, but now we are telling that participatory watershed development. What does this 'participatory' indicate, it is the involvement of the ultimate stakeholder, the ultimate beneficiary in the process of development of the technology, who was largely neglected in the previous efforts.

In that context, let us look into the concept of **in-tension of ex-tension.** What exactly, with what intention that extension is working, and who are the eligible people to provide the extension services as well as extension educational activities. In-tension of extension is conceptualized as the degree to which the philosophy, content, ideas, notions, objectives and techniques, principles, theory and models of extension have been internalized by the extensionists. The concept of internalization of the process of extension, the methods of extension is very very crucial here,

because those professionals who are involved in extension education activities, and those set of professionals who are involved in extension service activities need to identify the specific roles to be played in providing the services.

So that is how we try to conceptualize this concept of e-Readiness at three levels.

Individual e-readiness:

So the first level of e-Readiness is the individual e-Readiness. Individual eReadiness is the degree to which an individual is able to access and exercise the information-communication technology tools and other necessary skills to get himself or herself updated with the technology development. To what extent, an individual is getting himself ready for acquiring the knowledge through ICT's as well as the development of skills; making use of these ICT's as an instrument and on a continuous basis.

Institutional e-Readiness:

In a similar manner so the concept of institutional e-Readiness was also coined. So it is the degree to which an institution possesses the necessary infrastructure. Network accessibility, policy support and affordability to acquire and effectively utilize ICT (Information Communication Technology). The important issue with the institution includes, it has sufficient skilled manpower to efficiently and effectively use the ICT infrastructure that is available at the institutional level. So there are two parts here.

1. Number one we should have the necessary manpower,
2. As well as the affordability, accessibility and necessary

infrastructure. So that makes an institution e Ready.

National e-Readiness:

Then the national e-Readiness at the national level that if we take it. So the nation has the necessary infrastructure, internetwork accessibility, affordability and policy support and the human resource with necessary skills to acquire, access and utilize the information communication technologies. So this is how we can understand the concept of e-Readiness at three levels.

1. One I said at individual level. It is the individual involvement. The development of the skills and making use of the ICTs.
2. Then the Institutional level
3. And at the national level.

The elements of this e-Readiness include.

- The basic, the first and foremost element is infrastructure. What kind of ICT infrastructure that we have, maybe at individual level or at institutional level or at national level. So the moment we have necessary infrastructure, we start identifying that individual as the technology savvy individual, or the institution as the rich institution or the nation as a rich nation.
- The skill is one of the important component of this e-Readiness. We maybe having sufficient infrastructure or we can buy necessary equipments. The process of data required for getting eReadiness, but if you don't have the skilled manpower, then the infrastructure is not having any value. So that is how the skill is very very important.
- Then maybe it is an individual or maybe it is an institution or

maybe it is a country, which should have this affordability. It means it should have sufficient economic power to afford the ICT infrastructure and accessibility.

- The available infrastructure many of the time, specially in case of public sector organizations, we observe that it is not accessible. Maybe in some cases the educational institutions say that it is not accessible to students, and in offices some section of the employees are said that you cannot enter this room or you cannot make use of these things. So this is what is the issue of accessibility.
- And what is the institutional policy for adopting the information-communication technologies.

All these 5 components comprises of the e-Readiness. If you want to make the extension system eReady or e Ready extension system, so there are three important issues there.

1. Number one we need e-Ready extension educationist to provide the extension infrastructure.
2. And we need e-Ready extension service provider, because the problems that are dealt in agriculture and allied sciences are location specific as well as the discipline specific. Hence we need a range of extension service provider.
3. And at the same time the ultimate end-user, the farmer has also to be e-Ready for receiving the services that are being provided by the extension agencies.

Indicators of e-Ready extension system:

The indicators of e-Ready extension system include, the first one what we said extension educationist. Who is this e-Ready extension educationist? E-Ready extension educationist is able to access, afford and exercise the ICT tools and techniques and has the

necessary skills to get himself or herself updated with the communication and technological developments along with the necessary agricultural technologies. So the person who has specialized in extension as well as who can treat the content and analyze the content, and make the necessary content available to his receivers, we try to identify him as extension educationist.

So the necessary infrastructure at the e-Ready extension educationist is enlisted here.

e-Ready Extension Service Provider:

Similarly the e-Ready extension service provider. So he is the man with a specific subject matter, that he is having specialization and he is trying to provide the services. E-Ready extension service provider is a person with a background of agriculture and specialization in any of the disciplines of agriculture and allied sciences. Maybe he is a soil scientist or he is a pathologist or he is an entomologist or any of the disciplines that he belongs to, and who is serving in a public or a private institution. Maybe the State Agricultural University, ICAR institutions or any of the private agricultural research and development organizations, and meant for dissemination of the technological advances to the intended communities.

Means his basic responsibility is to develop as well as transmit the technologies for the benefit of society, based on the needs of the farming community. And making use of this information communication technology tools and technique and has necessary skills to get himself updated with the communication and technological development. So that he can update himself over a period of time, the ICT infrastructure that is available at institutional level or at the national level or at the State level. And so the ingredients for the e-Ready extension service provider are listed here.

e-Ready Farmer:

Then coming to the e-Ready farmer. He is a person because he is an ultimate receiver, he is the end-user of this technology, who is able to access agricultural information through ICT tools and exercise, gain the information in farming practices. It is not that it's not a one way process. Not that all the time he is accessing the information. But at the same time he should make use of that also. And he is having necessary skills to get himself or herself updated with the technological developments. So such farmers or the individuals we try to identify them as e-Ready farmer.

The things that are essential to be an e-Ready farmer are listed here. Keeping these things in view. So if we look into the nature of the farming community in accessing the information. What are their sources of information? It says that,

- Through television only 9.3% of the people are getting information
- And through radio only 13% of the people are getting information.
- And the extension workers only 5.7%
- And the Krishi Vigyan Kendras is having the respondent range of only 0.7%.

As reported by the NSSO survey of 2005.

The situation has not changed over a period of time. But the modern ICT's are having a major role to play under such circumstances by getting e-Ready. For ensuring this particular thing especially on the Krishi Vigyaan Kendras in the State of Uttar Pradesh, a study was conducted. Wherein the Krishi Vigyan Kendras under three different administrative set-ups. That is one group of KVK's managed by Indian Council of Agricultural Research. The second set of KVK's managed by State Agricultural Universities, and the third set oKVK's managed by the non-governmental organizations were studied from the point of view of their e

Readiness. The e-Readiness of the functionaries who are working in the Krishi Vigyan Kendras; who are acting as a subject matter specialists.

So the e-Readiness of the professionals as well as the e-gap at the institutional level was calculated. If you look at this figure. If you look into the infrastructure,

1. the gap was around 22.27 %
2. And accessibility was having around 21% gap.
3. If you look into the skill, so there is minimum gap. It means the professionals are highly skilled in nature, there is only 16% gap.
4. But when it comes to the affordability, the highest gap that we observe here. 25% of the institutions express that affordability is an issue.
5. But when it comes to the policy around 23.8 almost 24% of the institutions said that, yes policy is coming in the way to adopt the e-Readiness at the institutional level.

If you look at the results that are obtained. The administrative pattern wise, the ICAR KvK's were having the e gap of around 21.65%. The State Agricultural Universities were having the maximum gap that is 24.62%, almost 25% that we can say. And the minimum e-gap was observed in case of the KVK's that were managed by non governmental organizations. It means that somewhere the NGO's are working efficiently, that we can say with the help of this study.

Then an interesting analysis was made. So out of these 5 elements, which element is contributing to the maximum extent specially for e-Readiness. So when we analyze this, policy was the dominating factor at institutional level. The second dominant factor was the infrastructure. Because these two factors are having a direct relationship. If the institution has the policy of making that institution an e-Ready, automatically we find a very good infrastructure. If there is lack in a policy, infrastructure is going to suffer.

The third important issue that was observed at institutional level

was accessibility of the available infrastructure to the professionals. And the next important thing was the affordability and skill, so they were at par. It means the dominant factors out of this 5 elements of e-Readiness were the policy, infrastructure and accessibility. Similar study was conducted on the individual level e-Readiness. So wherein the affordability of the ICT infrastructure emerged as the dominant factor at individual level, because it is his prerogative whether to go for this or whether he can purchase this costly equipment or instrument or any infrastructure that is essential, and the second one was the skill. Even though we observed minimum gap in case of skill.

So the dominant factor for purchase of this ICT infrastructure at individual level was the skill and the third one was the infrastructure and accessibility, almost they were at par. So this is how when we shift the paradigm, so the variables are also shifting. We made an attempt to analyze an error in the study. So the straight line or the perfect; what we are observing in case of Q plot residual for e-Readiness. The straight line indicates that the errors were minimum in this particular thing. It means the results were nearer to the truth.

Conclusion

To conclude we can say that basically the concept of e-Readiness is the state of mind. So if you wish you definitely will be e-Ready. So there is no doubt in it. So with this we will be closing the discussion. And in the next interaction we will be discussing about AGMARKNET.

Thank You.

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PDF: e-Readiness for Extension Professionals

2-3 Journey of ICT applications in Extension Service – AGMARKNET

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Brief Introduction:

Hello Friends. You must have enjoyed my previous discussion with you regarding the concept of eReadiness. And I am sure now you are getting yourself e-Ready, to acquire all possible information related to Agriculture and Allied sciences, so that you emerge as a successful e-Ready extension professional. In today's topic we will be discussing about the concept of AGMARKNET. As you are already aware the Indian farmers are facing a number of problems. The prominent problem the Indian farmers are facing is, the issues related to the marketing. The farmers are not getting the remunerative prices. The institutions, the governments are making all possible efforts to see that farmers get appropriate prices, for which they are making all possible efforts like providing them MSP, providing them marketing support etc etc.But because of lack of appropriate information; what market is behaving in what type of way and what are the current prices that are going on indifferent markets is not known by the primary producer and the primary seller, so that is how the marketing institutions or the agencies are exploiting the farmers. Just to see that the farmers get appropriate

information related to marketing on a daily basis and the commodity that is being sold and the quantum of commodities that has arrived, what is the modal price etc etc should be made available to the farmers.

So with all these ideas the AGMARKNET was established. The full form of it is the Agricultural Marketing Information Network, so established by the Ministry of Agriculture(Govt of India).

Objectives:

The objectives of this AGMARKNET includes,

- To establish nationwide information network for speedy collection and dissemination of market information and data for its efficient and timely utilization. Since beginning we have been discussing about information itself leads to the empowerment. What kind of information? If the kind of information what they are getting is appropriate, automatically that empowers me, so that I can take appropriate decision. And to reach that level the AGMARKNET is working very hard.
- Then the second objective is to facilitate collection and dissemination of information related to better price realization by the farmers. The information like

    o The market related information— the market fee, market charges etc etc. many times farmers are not aware of these things. And once they reach the market with their produce. So then they started telling that this is the market fee and this is the market charge etc etc. Then the farmers feel cheated. So just to avoid that, that information is given to them in advance.

    o Then the price related information. Minimum price,

maximum price, modal price etc etc. and the quantum of arrival and the quantum that is being sold. So all this information are very essential to take the decision. So if the quantum arrived in the market is very huge, then he can postpone a particular day, so that next day he can realize the best possible price. Such decisions that he can take provided he has the information.

o Then infrastructure related information like what are the facilities available there, and what are the services available to the farmers at the market yard, at the marketing place etc etc are the information to be provided to the farmer.

- Then to sensitize and orient farmers to respond to the new challenges and to improve efficiency in marketing through regular training. Imparting training and educating as well as capacity building of the farmers is another important objective, through which we can empower the farmers.

Implementation:

- So the concept of AGMARKNET implementation process was involved in the
  ◦ Directorate of Marketing and Inspection at the State level.
  ◦ Then the State Agricultural Marketing Board(SAMB)
  ◦ And the State Agricultural Marketing Depts.
  ◦ Then the APMC which are very popular. You are already aware of these Agricultural Produce Market Committees.
  ◦ And the National Informatics Center(NIC) which provides the software development process for the purpose of collection of data and dissemination of data, to reach to the target group

- The beneficiaries of this implementation of AGMARKNET includes the farmers, the traders, the exporters, processors, govt depts, planners, researchers, agri-business firms, then commodity exchanges etc. Number of beneficiaries are there. But the basic challenge is to collect the information and provide the information at appropriate places

AGMARKNET:

- If you look at the market infrastructure at the national level.
  - So there are about 2416 principal market yards throughout the country
  - And about 825 sub market yards are there.

So it means put together 3200 plus marketing places are there in the country, wherein the agricultural produce is being sold as well as purchased.

- So based on this data the database was created covering 300 commodities. So that may include the cereals, pulses, flowers, oilseeds, spices, condiments etc etc. And 2000 varieties, because rice itself is having number of varieties, wheat itself is having number of varieties. There are number of qualities of toor dal that are available. Number of such commodities are there. So more than 2000 varieties of 300 commodities were covered under this AGMARKNET.
- Then networking involves providing hardware as well as software connectivity. And training to the each marketing node. This is what is the responsibility of NIC.
- And as on date, yesterday itself I was checking. The number of hits on this AGMARKNET site include 1.6 crore hits have already been done. It means that a number of people are hitting the site, forgetting the information.

The number of markets covered, Statewise if you look into. The highest number of markets that were covered were from the State of Andhra Pradesh, Maharashtra as well as the State of Gujarat. It is not that these States are important but all other States are being connected. Maybe in some States the number is more and in some States the number is less. That shows the activism of that particular State as well as participation of the people of that particular State in such initiatives.

Information Through SmS

- The marketing information is being sent through SmS services,
- For which you need to register with your mobile number, giving personal details, and specially you need to request for the price of 3 commodities in 3 market yards of your choice, so that you can get the market related information free of cost, once you register yourself at this AGMARKNET site.
- The price information through e-alert on the AGMARKNET portal that you can obtain.
- The State Agricultural Marketing Boards, then Marketing Depts, APMC's are motivating farmers to be part of the efforts of AGMARKNET. As we observe, number of farmers are participating in this automatically, the website get strengthened, and we can have the appropriate information.
- The Managing Directors as well as secretaries of this State Agricultural Marketing Boards and the Director of Agriculture Marketing services are also popularizing this services among the farming community, so that we can have the appropriate information services to them.
- And secretary, APMC's at the village level or at the block level are also registering the mobile numbers of the farmers. And provide the price information through sms from AGMARKNET portal, so that we can cover maximum number of farmers into

this services.

Problems in Data Reporting:

- The problems that are being faced especially while recording the data include,
- Not uploading the data on a daily basis. Now once in 2-3 days that they are doing this. So because of that they are not able to catch hold of the best possible price in the market.
- Then the modal price are not entered correctly. So here I am sure you might be aware of the concept of the modal price. It is not the average of the maximum price that is being offered in the market or the minimum price that is being offered in the market. It is the average, the modal price means the price at which the maximum number of transactions take place. For example the minimum price maybe Rs 10 and the maximum price maybe Rs 20. But the maximum transactions; or the maximum number of purchase or sold the commodity, at maybe Rs 17 or Rs 18, so that is what is the modal price. It is not the average. 10 +20 it is 30, then average is 15, but the modal price is 17 or 18. So there will be loss of Rs2 per kilo for the farmer if he enter the wrong data. That's what is the maximum problem that this particular site is facing.
- Some APMC's are not reporting the data on the portal. So even though you are part of that particular network. But if your data is not reflected, farmer cannot take the appropriate decision, because that might be his nearest market.
- Then the lack of monitoring by the officials at the district as well as the State level. So the local level APMC's are not working because there is no pressure from the top or there is no coordination between these institutions.
- And there are number of technical problems related to hardware as well as software. So once they face the problem,

they need to approach appropriate authorities and those appropriate authorities will take the necessary measures, and that is how some administrative as well as operational problems that this particular concept is facing.

Measures for Improvement:

Just to take care of these problems.

- The secretary APMC has been given the responsibility to ensure the data on arrival prices as well as the market prices are uploaded everyday at
- least before 5 p.m. on that particular day, so that by evening or by next day morning, they will get the summary of the activities that happened in the previous day.
- The officers should monitor the data being reported by the APMC's at the district, division as well as the State level. So that it requires the participation of the local level, the district level as well as the State level officers. Then only we can improve upon.
- Then enter the modal price of the commodity correctly, not the average of the minimum and maximum, as I have already told, the maximum number of transactions that happened for that particular commodity. What is the price of that? It is not the average price but what is the modal price that needs to be updated.
- Then the secretary of APMC, the officials of State Agricultural Marketing Board as well as Department should sort out the problems related to hardware in consultation with the NIC and DMI etc etc. so that we can resolve the issues at source itself, so that the system becomes more efficient.

Conclusion:

To conclude we can say that the AGMARKNET

- Is providing you the facility of anytime anywhere marketing opportunity
- Service providers are facing the challenge of collecting the appropriate information by the sources. But that can be overcome over a period of time with the participation of different stakeholders.
- Then there is a need of participation of farmers into these activities. And the farmers can also make use of AgMark App, so that they can get the appropriate information, and at the same time they can upload the necessary information also.

With this we are coming to the end of this discussion on the topic AGMARKNET. And in the next interaction we will be discussing about the concept of Hole in the Wall, which is a very interesting exercise or the experiment, that was conducted in Delhi. Now it has become a model for not only India but for many of under developed as well as developing nations.

Thank You.

Download

PDF: AGMARKNET

2-4 Journey of ICT applications in Extension Service – Hole in the Wall

> One or more interactive elements has been excluded from this version of the text. You can view them online here: *https://opentextbooks.colvee.org/ eextension/?p=36#oembed-1*

Hi! Friends, in our last discussion we talked about AGMARKNET, wherein the issues related to marketing of agricultural produce and the problems that the administrators as well as the farmers are facing, that we became aware of. And the only way to come out of such problems is the participation. The participation of the end-users, that is the farmers, and at the same time the participation of the professionals, who are involved in the agricultural marketing activities. It maybe the officers of the Directorate of Marketing and Inspection or the APMC or the Marketing Boards etc.

To what extent that they are involving in these activities. So then the efficiency of that system is going to be enhanced. Keeping the learnings of the AGMARKNET, now the major issue that comes to our discussion is. So when we want to implement the information-communication technologies, what are the benefit of farmers. The major issue emerges is whether the farmers are having those skills of making use of these ICT's. Under such circumstances I am going to discuss with you an experiment that was conducted in the slums of New Delhi, wherein the slum dwellers started learning computers with their own involvement. That famous experiment is known as the Hole in the Wall experiment. And the contents of this are now just I am starting with.

A New Way to Learn:

It is basically a new way to learn.

- Learning station seeks to create a new paradigm in the learning process by providing unrestricted computer access to the groups of children in an open playground setting. So the basic issue is if you provide access. Accessibility that we discussed in case of e-Readiness also. If that accessibility is there with the necessary infrastructure; automatically skills can be inculcated, so that's what is the major issue, the major crux of this discussion.
- Open setting to use the natural curiosity stimulates learning. We should have conducted the similar things in the 4 walls. But there is not much curiosity in the 4 walls, as we find in case of natural setting. So with that idea this experiment was launched.
- Minimally invasive education as a concept that was used to make this Hole in the Wall experiment, first started in a slum of Kalkaji, New Delhi in the year 1999. So minimum invasive education means, the infrastructure is being provided, accessibility is provided but there is no monitoring or the rules and regulations of the formal education are taken out of this system. So that's what is the minimum invasion. And have give them the freedom. Give the learners the freedom, so that they can learn on their own.
- So looking into the success of that in the year 2000, the Govt of Delhi set up 30 such learning stations in the resettlement colonies in different parts of Delhi. And this project is still continuing and creating a tremendous impact among the generations of young learners.
- The basic idea is in a playground setting, so such kiosks are established. It is completely covered with glass, with only opening, with just you can put your hand and you can operate

the mouse and you can put on and shut down your system and you have access to the keyboard. So with this minimum things, this people started learning.

The Vital Features:

The vital features of this experiment include

- The playground setting. Means it is just like another game that the students are playing in the same playground setting.
- And it is collaborative learning. It is not that there is a teacher to instruct you, to teach you how to operate and how to open the file, and how to close the file and how to save the contents and how to add pictures and how to delete pictures and all these things. It is all learning by doing. And somebody else who is observing the operations, he is suggesting, you do like this then it may happen. And that is how; trial and error method and learning by doing. So that's what we call it as a collaborative learning.
- Then optimum utilization of the learning stations. So he is being done by the learners, because all the time the students are there. Basically they are curious, what exactly the computer is and how we can learn that. And there is a freedom and there is access also.
- And learning with the school system.
- Learning is basically to learn. Because I have my own curiosity. When I go to the school under the pressure of my parents, my learning is something different and when I learn on my own with my own interest, that learning is different.

And students can also do certain projects making use of this infrastructure As per the statistics more than 3 lakh students have

been benefited from 300 Hole in the Wall stations situated in different parts of New Delhi .

- The first such experiment was taken up in the year 1999-2000, and later it was extended to 30 learning stations in different parts of Delhi.
- The Sugata Mitra's experience says that, because he is the founder of this and he is the generator of this idea. Basically he was working on the unsupervised learning since 1980-82. And this unsupervised learning, making use of computers.

So there are two important issues here. Computer being the advanced technique, management of the information, and there is no supervisor or there is no teacher; how can we learn. So this was the biggest question mark. But Sugata Mitra worked on that and ultimately it got success. And finally in 1999 he decided to test in the field of New Delhi, and ultimately he got the success.

   The Community believes that Learning Stations are beneficial for children.

   The results of this minimal invasive education or unsupervised learning process are before you now. The community believes that the learning stations are really beneficial for the children. And how they are beneficial. So you look into the results. It spreads the basic computer literacy among the society. So 85% of the people said that. And it provides opportunity to learn the computers, and more than 80% said that. And it improves the social cohesion, because everybody is coming on a single platform and they are learning. And it develops the confidence and pride of an individual, who was not aware of the concepts of the basic use of the computer and basic learnings on the computer. But now they are. This was the opinion of more than 85% of the people. And it improves the academic performance of the learners. Because this is a new technique. They can make use of this as an instrument for their academic performance. This was the opinion of 79% of the people.

   Academic performance of the children improves

Then academic performance how it is improved. So what is the extent of improvement in the academic performance was also surveyed. The results reveal that in English there was improvement of about 16%, in mathematics there was improvement up to 25%. Then in case of science there was improvement in 18%, and in social science there was improvement in 21%. So if you look into, if with this minimal invasive education, if you can improve your performance by 16 to 25 %. That itself shows the potential of the concept as well as how can we make use of that. So these are the studies conducted in the State of Maharashtra. So a site with internet connectivity that was provided on the lines of the Hole in the Wall experiment.

Summary of Sugata Mitra's Experiment:

The summary of Sugata Mitra's experiment says that.

- Teach themselves enough English to use email, chat as well as search engines. Using these learning stations people have started learning the languages.
- They learnt to search the internet for answers to the questions in a few months of time. Because now they have access to the language. Now they can ask the questions, they can obtain the answers by making use of different browsers.
- Then improve their English pronunciation on their own, because there is audio facility, there is video facility. Making use of such advanced facilities they can improve upon their language abilities.
- Then improve their mathematics and science scores in the school. We have already seen that. There is an improvement of 18 to 25% in case of maths as well as science. So we can easily improve upon academic performance.
- Then answer examination questions several years ahead of

time. So that they develop that confidence of solving any problem or answering any questions.

• Change their social interaction skills as well as the value systems.

So these were some of the outcomes of the experiments that were conducted by Sugata Mitra.

Peer to Peer Learning Patterns:

And it leads to the peer to peer learning patterns. The socio-metric surveys reveal that learners identify the leaders. The learner maybe at the initial level or the learner maybe at the fag end of his professional career. Because he is also a learner, so they try to identify the leader. And they try to develop the leaders in the community.

The basic focus was on the social networking, self-regulation and collaboration. Patterns of knowledge flow from key leaders, who were identified and provided with targeted input, to other children at the learning station. The students or the learners who were typically called as slum dwellers by the society. But these experiments made them as a leader, so that they started developing their abilities and they started developing their confidences.

So put together we can say that when we say that how can the farmer learn the advanced techniques of computers and how can they make use of the computer and get the benefits. When the most disadvantaged section of the society, whom we call as slum dwellers can do this why not the farmers. So that is why I wanted to discuss the outcomes of the experiences of learnings of this particular experiment of the Hole in the Wall.

Conclusion:

- Basically it dealt with the method of unsupervised learning. So farmers are also in a similar setting but they are not that disadvantageous as the slum dwellers. They are far better equipped than the slum dwellers. So with unsupervised learning they can also learn huge number of things.
- And the accessibility of infrastructure leads to learning processes. We can take the farmers in that direction.
- And formal education is not a barrier. If you have it, it is an added advantage, if you don't have it ,it is not going to be a barrier for the minimum invasive education or the learning on your own or learning by doing.

With such experiments, we can learn, we can acquire skills, as well as we can be part of the development initiatives. This is what is the learning that we can have through the discussions on various experiments that are conducted in e-Extension.

So with this we are coming to the end of this discussion. And in the next interaction we will be discussing about the concept of knowledge management.

Thank You.

Download

PDF: Hole in the wall

2-5 Journey of ICT applications in Extension Service – Knowledge Management

> One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/eextension/?p=38#oembed-1

Transcript

Brief Introduction:

Hello Friends. I am sure you must have been motivated with learnings of Hole in the Wall experiment at Delhi. So now we have the case that with minimum monitoring and with minimum invasion, we can have maximum learning also provided we have infrastructure, we have accessibility, and we have an interest to develop the skills. The things what that we were discussing about was the knowledge, development of the knowledge. In this particular discussion we will be discussing about the management of the knowledge. How the knowledge can be managed.

Knowledge Management of Farmers:

Let us begin with the issues related to the knowledge management of farmers.

- In one of our previous discussions we have already observed the differences between the data and information. And ultimately how it translates itself into the knowledge with the involvement of the learner.
- Knowledge is embedded in the process as well as the technologies, because it is the thought process of an individual. He has understood that particular information in that way which was earlier known as the data. The data when it is added certain context and process, it is becoming the information. And the information when it is understood by an individual, that becomes the knowledge. And when the knowledge is applied, so that we call it as wisdom; it develops into the products as well as the services.
- Knowledge has implicit as well as an explicit dimension. It is not that everything I know that I can explain. It is not that everything I know, I can deal with the people. So the implicit as well as explicit means. So the things that are in your mind, you can use it but you cannot explain it. But there are certain things which you can explain, which we call it as the explicit things. Or you can write it down or that can become the beneficial issue for the others also.
- The basic issue here that what we are emphasizing on is the knowledge sharing is an important knowledge management process. How can I share the knowledge? Before sharing, how can I collect it, how can I process it, then how can I share it with the people. All these activities are the part of the knowledge management process.
- Knowledge sharing ultimately benefits our farming community. And that is what is the basic activity of extension education

activities.

Knowledge Management:

Then the process of knowledge management.

- To help an organization to identify, select, organize, disseminate, transfer the information. So these are the underlying processes of knowledge management. What is that. Identification of the knowledge, then selection of the knowledge, then organizing it, disseminating it and ultimately transferring it to the internet community.
- Then structuring enables the problem solving, dynamic learning, strategic planning, decision making. So they are the further processes of this knowledge management.
- And ultimately the leverage value of intellectual capital through the reuse. Because the same thing we can apply wherever and whenever it is needed.

Types of Knowledge:

The types of knowledge as we were talking of the explicit as well as implicit.

- The explicit knowledge means it is codified, recorded, actualized into some form outside the head. Because what I am trying to put before you and you can understand it. So that's what is explicit. Because I am trying to that knowledge out for the benefit of the society.
  - In the form of maybe the books, periodicals, journals, maps, photographs, audio-recordings webpages, web

portals etc.

So this is how I can show my explicit knowledge by providing contents through these things.

- Tacit knowledge is a form of experience and insight. Because it is inside me, I cannot explain it for one or the other reasons. So that's what is tacit. It is hidden. So not in the recorded form but it is in our head, and it is in our intuition.
- Basically it is an intellectual capital.
  - It doesn't mean much unless it is packaged in a useful way. So if I don't make use of that it is not having any meaning, but it is ample knowledge is there, but it is not having any use.
  - Technology and global environment are redefining the same thing in a useful way, so that you can translate this tacit knowledge into the explicit knowledge.

Theoretical Base:

The theoretical base include.

- The facts examined by our ancestors in the laboratory of nature during the time and reach us. We call it as the indigenous knowledge. There are no established laboratories, but they considered nature itself as a laboratory for themselves. So whatever the products that we got out such exercises, we tried to identify it as **indigenous knowledge.**
- Then there is another set of knowledge which is known as the science based knowledge, which is the outcome of the logical, reasoning process. It is the product of scientific thinking and analogy. It has a perfect base. If and but relationships. Then cause and effect relationships. We try to identify it as the

science based knowledge.

So two knowledge bases that we discussed, that is the tacit as well as the explicit. And there is another thing that is indigenous knowledge as well as the science based knowledge. With these 4 types we can come out with a paradigm of knowledge matrix, wherein we said that I stands for implicit knowledge and S stands for scientific knowledge. E stands for explicit knowledge and T stands for Tacit knowledge.

So when the indigenous knowledge, it is explicit in nature. It is very rare commodity. There are so many indigenous technologies still needs lot of explanation. But because of lack of explanation, they are not finding the light in the society. Then the second category is the knowledge which is tacit but indigenous. It is the most prominent commodity, which we are all searching for. Because the tacit which needs to be explained, but it is indigenous also. It is limited to this particular place only. Nowhere we can find it, so that is why it is the most prominent commodity.

The explicit as well as the scientific knowledge(the science based knowledge) is the rare commodity, because there are so many things which are waiting for a science analogy and the reasoning. Then the most frequent knowledge is which is tacit as well as it is scientific in nature.

Knowledge Requires Capture, Organization, Access and Leverage:

Keeping these things in view, the knowledge requires to be captured, organized, accessed and leveraged. So what are the old as well as new ways of doing these things for the purpose of knowledge management. If you look into the first element, that is capture. How it was captured? In the earlier days

- It was in the written form, auditory or graphical representation. So these were the forms of capturing the knowledge, the traditional ways of capturing the knowledge. But the modern way included the digitization of this particular knowledge and putting it into the cyberspace is the modern way.
- If you look into its organization, the contents were organized in the form of tables, indexes, libraries etc. But in case of the new ways it is being done with the help of the software and it is available in cyberspace for 24/7/365. It means every moment you have an access. But in these places, you have a limited access.
- Then coming to the access, it's the physical body which goes to a library or a company or that particular place **(8:07)** to have an access. But in case of new way, the access you can have it with the help of your computer or the network technologies.
- The tacit knowledge is rarely tapped. So this is what is the challenge even today. So there are many people with tacit knowledge, but it needs to be translated into explicit knowledge. The tacit knowledge is tapped using the technological tools, many such experiments that are going on. Earlier it was a very hard task, but now the things are getting simplified.
- Ultimately the leverage is a sum game in case of old way. But the leverage is exponential; multiples upon multiples in the new ways with the help of the technologies, we can simplify these particular processes.

Approaches to Knowledge Management:

Then coming to some of the approaches of knowledge management,

- Which includes the process approach, which codifies the

knowledge

- ◦ And formalized controls as well as approaches as well as technologies
- ◦ It fails to capture most of the tacit knowledge, because the process is involved, until and unless somebody reveals the process, he cannot capture it.
- The practice approach reveals that.

  - ◦ It assumes that most of the knowledge is tacit in nature, and obviously because I have understood a particular process in a particular way, it has lot of implications. But if I don't explain it or if I don't bring it outside, it is not having much implications.
  - ◦ Then it is an informal system, where the social events, communities of practice, person to person contact, which challenge to make the tacit knowledge explicit. Capture it, add to it or transfer it, this is what is the practice approach. If you want to practice, it has to be explicit. As long as it is tacit knowledge it is very difficult.
- Then coming to the hybrid approach which is a combination of many things

  - ◦ So wherein in case of practice approach initially used to store the explicit knowledge
  - ◦ The tacit knowledge primarily stored as the contact information
  - ◦ The best practices captured and managed.
- What is this best practice

  - ◦ The best practice includes the methods that effective organizations use to operate and manage the functions. So this is how the hybrid approach operated
- Then the knowledge repository, which is the storehouse of the various quantum of knowledge.

  - ◦ The place where the knowledge is captured as well as stored.
  - ◦ And the different storage mechanisms depending upon the

data, are captured, processed and disseminated.

Knowledge Management System Cycle:

Then coming to the knowledge management cycle

- Which creates knowledge through new ways of doing things. Maybe it is traditional or maybe it is the science based knowledge. Maybe it is explicit knowledge or maybe it is tacit knowledge. It tries to create the knowledge using new ways of doing things, maybe extracting the things from various sources etc.
- Then it identifies and captures the new knowledge in the second part. The developed knowledge, the created knowledge now has to be coded.
- Then places knowledge into a context so that it is usable. So that's what is the process of refinement, wherein we are refining the captured knowledge, the created knowledge, which is being captured and it is being refined.
- And then in the next step it is the stored knowledge as a knowledge repository. So this is where the information-communication technology plays a dominant role. Earlier there were limited ways and means of storage of this generated information. But now there are umpteen number of avenues, possibilities that we can store the knowledge.
- And reviews for accuracy and relevance, that is what is the managerial steps that comes into the picture. The knowledge is now being managed with the involvement of these processes of conducting reviews and other things.
- And then makes the knowledge available at all times to anyone. So this is what is the process of dissemination again. The role of information communication technologies comes into the picture. Because it is having the storage facilities. That storage

is having the largest capacities, wherein we can store the knowledge that is created as well as captured, and then ultimately it is refined.

And the entire process that starts from creation to dissemination, we can call it as the knowledge management cycle. If you look into the information dissemination needs of the agricultural extension processes, the similar activities that are being taken up. The knowledge is that is with our farming community as well as the scientific community needs to be brought under a particular platform, with the help of which we call it as knowledge creation.

That has to be captured in an appropriate forms. Which are suitable for our farming communities. And the knowledge has to be refined over a period of time, because the situations are changing, since agriculture is a biological process. The context are changing, the agro-climatic changes are happening. Over a period of time we are getting new diseases, new insects, new problems related to agriculture. So that is why the refinement is very very essential.

Storing of the huge amount of data that is generated, maybe as a part of research or maybe as part of the traditional knowledge. Then the stored data has to be managed over a period of time. And ultimately it needs to be disseminated, through various methods and approaches of extension. So this is how the knowledge management process which we try to understand in the context of agriculture.

Conclusion:

To conclude we can say that

- knowledge is basically a commodity, which can be created and which can be stored, which can be packaged and which can be marketed.

- And it needs to be managed for the benefit of the community, as we have said with the help of a cycle. So until and unless you manage the knowledge, the benefits of the generated knowledge, the created knowledge is not going to reach to the entire mass.
- And information technology tools facilitate the process of knowledge management. Let us make use of the tools of this information-communication technology, for creation, for capturing, for storing, for managing as well as ultimately for the dissemination of the knowledge, because we being the students of agriculture, we need to customize everything from the point of view of farmers.

With this we are coming to the end of second week's of discussion. Now you should be getting ready for the test, wherein you will be coming across different questions in the objective form. So that you can test your gained knowledge over a period of 2 weeks. And also we expect your comments as well as whatever the doubts that you have regarding the topics that we have discussed so far. So I welcome you all to interact on the Forum activities of the agMOOCs platform.

Thank You.

Download

PDF: Knowledge Management

3-1 Concepts for better understanding and making e-Extension practical – m-Learning

Transcript

Brief Abstract

Hello friends, I am sure you must have enjoyed the last couple of weeks, wherein we made an attempt to understand the basics of information-communication technology. And how the journey of information-communication technology started specially from the point of view of providing agricultural extension services. In this week we will be looking into the concepts for better understanding and making e-Extension practical, and the efforts that were made in this direction.

So in this week we will be covering about the concepts like m-Learning, e-Learning, the difference between websites and web portals. Then the Expert System and Artificial Intelligence, applications that are being used in agriculture. So let us begin with the first topic. That is m-Learning.

Introduction

As you are already aware that mobile has become a part and parcel of our life. And the introduction of mobile as well as the other information-communication technologies have revolutionized the entire process of communication, which was traditionally dominated by one to one interpersonal communication. According to the Telecom Regulatory Authority of India, so there are more than 1192 million wireless subscribers as on January, 2019. That comes to around 120 crore mobile subscribers are there in India, which seems to be very high number. Means every Indian citizen is having an access to the mobile connectivity.

Now the issue is how can make use of this mobile and availability of the mobile, and the connectivity that we are going to establish through this mobile, for the purpose of education and for the purpose of extension services. So that's what is the content that we will be discussing in today's lecture. And increasing ubiquity of mobile phone leads to us to making use this particular instrument for the purpose of learning.

"Mobile learning is a type of personal learning that has infinite possibilities. Because here we are ensuring some issues like the connectivity, number one and anytime anywhere you can have an access to these things. And you can set your own pace of learning. So this is what is the meaning of infinite possibilities are there in case of mobile learning. It allows more and more people to gather knowledge and realize their dreams of a better future."

If we look at the formal education. So there are number of limitations like this many number of students are only eligible for getting admission. But in case of the alternatives that are available to the formal education, the number of opportunities are umpteen; mobile is one such instrument, that we can make use it for the purpose of providing education as well as extension services.

Definition

Coming to the definition of m-Learning. Any sort of learning that happens when the learner is not at a fixed, predetermined location or learning that happens when the learner takes advantage of the learning opportunities offered by the mobile technologies. So this is what is the basic deviation that we find from the formal education or even non-formal education that we can say. So wherein you have free time, so then only you can have access to this. So there is no determined points of access or determined points of collection. So that learner has all sorts of freedom, and that is what is we are trying to conceptualize as the mobile learning.

The ways of content delivery through mobile include, the

- Short messaging services
- mms
- voice call
- podcasting
- online chatting
- and video conferencing

So now let us have a look into all these ways of content delivery.

SMS (Text Messaging-1984)

Let us begin with the SMS which was started way back in 1984. Is the simplest technology which is interactive in nature. And the learning activities can be devised with the very basic equipment, that is your basic mobile telephone. So wherein we can send the shortest possible messages, so that you keep on learning and you can keep on updating your information base at regular interval. And the connectivity that is assured in case of mobile; that makes you more empowered. All mobile phones that are available have this

feature and we can make use of this feature in a very competent manner.

Then coming to the multi-media messaging services. So which is an improvement over the sms that we can say. Wherein we can send the images, audio clips and video clips as well as text to other phones and as well as email addresses, wherein we need certain advanced instruments for this. So which we call it as the Personal Digital Assistants with some camera and some additional features, which is the improvement over the sms that we can say.

Voice Call

Then coming to the voice call methodology. So it allows the learners to clarify their doubts on an online learning mechanism using interactive voice response and voice data services. So this is establishing the inter-personal communication. But the space is not the matter. To achieve this inter-personal communication we need to have the face to face situation in a traditional way. But the similar kind of situation that we can create using this voice call methodology, so that the learner can clarify his doubts at any point of time.

Podcasting

Then the concept of podcasting. Listening to an audio recording of lectures. And that can be used to review live lectures also, and to provide opportunities for a student to rehearse oral presentations. Wherein the development messages or the extension services can be pre-recorded, and they can be circulated to the learners with the help of this podcasting methodology; we can make them to learn about the content, the developments, the technologies as

well as various other development messages with the help of this podcasting methodology

Areas of Application

Then where we can apply the mobile learning methodologies. So this can has a wider application in case of education sector. And as on date education sector is using it in a wider way by providing the contents, alerts over mobile telephone etc etc. In case of healthcare also it is being used for providing the health related informations.

Agriculture:

Then coming to the application of m-Learning in agricultural sector. It has a wider application, as we are already aware that huge number of people in case of Indian context are involved in production process, in the processing process as well as in the marketing of agricultural commodities. So the number is very huge. So how to reach all these things and how to provide appropriate information is the biggest challenge that the agricultural research and extension system is facing in which mobile is one of the potential instrument, which is helping us. So in case of agriculture for taking up any sort of decision. Maybe it is a primary producer, maybe it is a processor or maybe it is a marketing agency or maybe it is an extension agency. Mobile is helping them to take appropriate decision, because we are able to get updated information with the help of this mobile.

Need for m-Learning in Agriculture

Looking into the need for the mobile learning in case of agriculture. Agricultural extension is an extensive and a continuous activity. Without which we cannot think of increasing the production, productivity and their living standards etc. Because all these things are interlinked, provided we give them the appropriate information, when they are in need of. That makes a lot of difference in the lives of the primary producers.

Timely, precise and location specific advice to the farmers is one of the key issues. And that is what is the challenge before extension professionals, wherein mobile can help us in meeting this particular gap.

Then the field extension functionaries have limitation of time and resources to reach the ultimate client. Because the inter-personal communication has lot of implications specially in adoption of technologies, but how far a particular extension professional can reach the farmer. But he can create such an effect, that he is interacting with the ultimate end-user of this particular technology with the help of mobile. And this is how it has lot of implications in case of agricultural extension services also.

Then this can cater to the timely and location specific advisory to the ultimate client on agricultural practices. When you need. Where exactly you need. All these things can be taken care of through this mobile learning.

Examples of m-Learning

Then coming to some of the examples of mobile learning which include the Bharti Airtel, which is a private mobile service provider and the IFFCO (Indian Farmers Fertilizer Cooperative). Cooperative organized by the farmers which is supported by the Govt of India.

So it has the IKSL-Agri Helpline in case of Indian context, which is providing the extension services.

How it is providing? Farmers who purchase the Bharti Airtel "green SIM". It means this SIM is specially for the farmers, have an access to value added services, which include daily agri-voice messages on the Agri-Helpline. So once you purchase the SIM with the help of this Bharti Airtel. So it has a collaboration with the IFFCO. They are providing you the voice messages on daily basis, so that farmer can update his knowledge base.

This m-Kisan is a program launched by the Govt of India in 2003.

So, so far they have sent about 239 crores of messages to the farmers who have subscribed to this mKisan concept.

And the number of farmers who are registered are more than 5.14 crore farmers have already been registered under this particular concept.

This itself shows the ubiquitousness of the concept of mobile learning, and the inquisitiveness of the farmers also in learning the innovations as well as latest developments in Agriculture and Allied sciences.

RML Agritech Pvt Ltd. Formerly Reuters Market Light (RML) (1/ 10/2007)

This is another example of mobile learning. The Reuters Market Light is one of the organizations under the private control, which was launched on 1st October, 2007

- It provides the customized, means satisfying your needs. What you want. So that's what is the services that you are getting. The localized and the personalized weather forecast, local crop practices, agricultural news and crop advisory with the help of mobile.

So under such circumstances. So what is suitable for my soil and what is suitable for my village. What is going to be the climate in the coming 3 to 4 days or in the next week or the next month. So I am getting all these advisories with the help of this organization. So

that farmer can take appropriate decision, whether to go for spray of pesticides or insecticides or whether not to go for application of fertilizers. Number of such decisions that the farmer can take.

- It helps the farmers to plan irrigation, application of fertilizers, harvest etc etc, so that he can take appropriate decision for minimizing the cost of production and maximization of his profits.
- So as on date there are about 3.4 million Indian farmers from about 60,000+ villages have subscribed this Reuters Market Light program.

So now it is being called as the RML Agritech Pvt Ltd. It covers about 450 crops and 1300 markets. So this what is the vastness of the coverage of the thing that you can think of. You can now sell your products in not one market or few markets, but you have an access to one thousand three hundred markets. And the developments what are happening in those one thousand three hundred markets are on your mobile.

- Then through sharing the millions of farmers are getting the benefits of this because every farmer who subscribes this. He shares the information with fellow farmers. That is how they are also getting the beneficiaries.
- So now the service is available in 18 States of the country. So it has the largest network as far as the private sector organization is considered, that you can say.

Push SMS

The services are of two types. One is the push sms, wherein once you subscribe through any of these channels. You will be getting the messages as per the updates or as per the developments.

- So you can register through web registration as the URL is given here
- You can register also through Kissan call center by calling the

toll free number of 1800-180-1551, which is common number for the entire country. You can register through this also.

- Or you can send an sms to 51969 or the mobile number that is mentioned here.
- Or you can register yourself through Common Service Centers, which we find throughout the country in every places.
- Or you can also register yourself with the help of the State or District or Block agricultural offices.

You will be eligible for getting the push messages that are being sent by RML.There is another concept known as the pull messaging services. You can make use of either of these numbers. So that you will be getting the messages that you desire

You have a specific query so that you can send the message. You can send your queries and accordingly you will be getting the reply in your language or the regional language. The query you can ask is in English. But you will get the reply in the regional language. But the pull services are being charged as per the market rates or these service providers, what they charge for the messages are applicable to these pull Sms's also.

Advantages of m-Learning

Then coming to some of the advantages of m-Learning.

- It enables the information when it is needed. So because to take an appropriate decision, I need appropriate information at that point of time, when I need it. So that is what is the strength of this.
- Then it allows use of rich media, when appropriate you can have access to all formats that are available. Audio, video, text, audio-visual, number of things.
- And it provides access to the experts also. Anytime you can make a call and get clarification
- And it provides location specific information.

Because there are number of service providers. We have discussed only about 3 or 4 examples here. But there are number of other service providers also, this is what we discussed in case of pluralism in extension also. So number of service providers that the farmer can have an access.

- And the information is available anytime, anywhere, when you require.

Challenges

Then coming to some of the challenges. The technical challenges include.

- The connectivity and battery life of the mobile. Because in Indian context the number of service providers are more and some service providers have better connectivity. Some service providers are not having better connectivity. It is the major issue.
- Then screen size as well as the key size is another issue for weaving the picture messages or the video messages.
- Then the number of files and asset formats supported by a specific device. So that depends on the capacity of the device. So its compatibility with various formats that are available, maybe the audio file, or video file or text file; whatever it is.
- Then the content security or the copyright issues is another challenging factor, while making use of this mobile connectivity for the purpose of education and extension services.
- Then reworking the existing e-Learning materials for the mobile platforms, because if you are putting the same content on the web site or a web portal, its formats are comparatively different. But when we want to customize it for the purpose of mobile. So then it needs additional designing for that. So that is another challenge for the service providers.

Social and Educational Challenges

Then the social and educational challenges include.

- Accessibility and cost barriers especially for the end-users. But over a period of time the cost barriers are also being simplified. But still it is an issue.
- Then the digital literacy as well as computer literacy or digital literacy plays the role. Digital natives are having an edge over the digital immigrants as far as the digital divide is considered.
- And how to support learning across many contexts. Because every farmer is having a different set of needs, and different set of crops and different set of problems that he is facing. But how to customize the services suiting to each and every farmer is another issue.
- Then the content security or the pirating is another issue. So wherein it can be taken to one to many.
- Then no restriction on the learning timetable is another issue. Because this makes the addiction of the learner over the mobile.
- Then there is no demographic boundary. Because of that the boundaries are being reduced, but the social issues start emerging.
- Then disruption of student's personal as well as academic lives because of his addiction to the mobiles.

So these are some of the social concerns as well as the educational concerns of mobile applications in extension services.

Conclusion

Then to conclude we can say that

- If the learner wishes to learn, there are many options that are

available. One such beautiful option that is available is the mobile learning also.

- An option provides an opportunity; anytime, anywhere learning is your instrument known as the mobile.
- Then development of the content suitable for the learner is a challenge for the professionals. And many such experiments have already been done and many such are on the way, in the pipeline shortly. The society is going to be beneficial of the concepts related to mobile learning.

So with this we will be concluding this particular discussion. And in the next interaction we will be discussing about the e-Learning.
  Thank You.

Download

PDF: m-Learning

3-2 Concepts for better understanding and making e-Extension practical – e-Learning

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/ eextension/?p=42#oembed-1

Transcript

Hello friends. I am sure now you must be looking at your mobile telephone in a different way. With the exposure that we had to the mobile learning aspects. As you are already aware, I am sure many of you must already be using the agMOOCs App through your mobile only. So wherein you are ensuring the educational content through a mobile. Similarly we have number of such applications that we can make use of with the help of mobile learning.

In the similar way, so now we will be discussing about the concept of e-Learning. So if you look into the global population, so there is about 7.50 billion people are there in our globe, of which more than 53% of them having mobile connectivity. So this is the scenario at global level. In Indian context also the figure is not less than 50%. So we will be coming to that in a short while from now. If you look into the amount of time, that is being spent on the social media, across the country we have considerable amount of time, so people are spending.

So if we divide these countries, the so called developed nations are spending comparatively lesser time on the social media

compared to the so called developing as well as the underdeveloped nations. So that's what is the biggest gap that we observe in case of use of this social medium. So if we look into the gender balancing of the use of the social media, specially the Facebook, so the difference is not much in case of developed nations. But in case of the underdeveloped nations or so called Islamic countries. So that we observe the gender gap. So from the point of view connectivity. So the developed nations are comparatively having the higher speed compared to the underdeveloped nations as far as the mobile connectivity is considered.

Now coming to the Indian scenario. So there are about more than 500 million of people or more than 50 crores of people are having Internet connectivity. So if you look into the gender as well as the urban rural divide. So this is what is the general perception we have. The rural areas are not having better connectivity. But the figures that are mentioned here does not show that. So there is an equal opportunity for the people living in the rural areas also. And another interesting point is, the gender is also getting neutralized here. So means, male as well as female are also having equal opportunities as far as the Internet connectivity is considered. So this is what the figure says.

Then if you look into the Internet penetration in India. In the days to come it is going to increase and by 2020, we will be having about 730 to 750 million people are going to be the Internet subscribers in India. So which under such circumstances, what is the preparedness of the education sector as well as the agricultural sector for providing the necessary services for the end-users of this Internet is the main issue, that we will be taking up in these discussions.

Concept of e-Learning

Then coming to the concept of e-Learning. "The automation of the process of learning and training through the use of information

technology is nothing but the e Learning." So wherein we are now learning with the help of the machines, the content that is being provided by these machines. So there are a number of terminologies that we use for the concept of e-Learning synonymously. So some of them include.

- The multimedia learning
- Technology enhanced learning
- Computer based instruction
- Computer based training
- Computer assisted training.

There are number of such synonyms that we attach to the term e-Learning. So this shows the popularity of e-Learning.

Traditional and e-Learning Approach

Then coming to the comparison between the traditional learning as well as the e-Mediated learning or the electronic learning. So if you look into the concept from the classroom point of view.

- **Access and Synchronicity**
  There is a limited access as well as it has to be synchronous in nature. But if you look into eLearning, so the access is unlimited. Any number of people or any number of students can be enrolled in to these courses. Here both synchronous and asynchronous interactions are possible in case of m-Learning.
- **Content Delivery**
  If you look into the content delivery. In case of traditional we generally go for chalk and talk, then the power-point as well as transparency. Then we make use of the textbooks, libraries, videos as well as some collaborative mechanisms for delivering

the contents in case of traditional classroom system. But in case of e-Learning we go for multimedia simulation. We go for digital libraries. We go for on demand content. And both synchronous as well as asynchronous communication is possible in case of e-Learning. So this is what is an additional advantage over the traditional classroom system.

- **Personalization**
  So if you look into the personalization of this, the learning path is solitary here, because there is the relationship between the teacher and the taught. And accordingly so when they are coming together, then only the learning can takes place otherwise the learning cannot take place. But in case of e-Learning it is having an edge over that. The learning part and pace are being decided by the learner. So because now the contents are available online or offline. So he, the learner takes the decision when he wants to learn, and accordingly he is going to set it. If he want to relisten to the same content, he have an access. But in case of traditional method it is not possible.

History:

Then coming to the history of this e-Learning, which goes back to the 1960's

- Where the University of Illinois developed a system of accessing informational resources, while listening to the lectures that were recorded. The pre-recorded lectures were used for the purpose of learning.
- In Stanford University, they experimented with using the computers to teach the mathematics. Way back in those days, so some such experiments were made.
- In 1963 they developed the computer assisted instructional

methodologies. So that how can we use these computers for the purpose of teaching. So that was the main idea.

- In 1976 Bernard Luskin launched the concept known as "college without walls" using the television stations. Because they used to broadcast these lectures through television, so that many people have an access to the educational content.
- In mid-eighties accessing course content became possible at the college libraries with the development of the Internet medium
- Then the Open University and the University of British Columbia used Internet to deliver the distance learning and online discussion between the students. So way back in the 1980's Universities started providing the content with the help of Internet to the interested learners. But the challenge was the learner have an access to the Internet. Those who were having, yes they were really the beneficiaries **(7:27).**
- So with the launch of the advent of this world wide web in the 1990's, so everybody started working on these models. So now the results of which are visible to us.

According to the KPMG survey, which says that the Indian online education industry will grow from 1.6 million users as on date to 9.6 millions by 2021. So almost 5 to 6 times increase is going to be there, specially this online or the e-Learning methodology.

Looking into the pace of technological change. So now it is being said that the content provider or a teacher has to update himself in every 3-4 years, because otherwise he is going to be an obsolete man, because no takers will be there for your teachings, because the technology is moving so fast.

Key e-Learning Service Providers.

So the key e-Learning service providers include.

The Coursera: this organization has collaborated with the universities, museums and other educational institutions and provide free educational content on a range of subject matter areas. Just you name it, they are trying providing the content matter.

Similarly another organization **W3schools,**which provides free learning website for educating learners about various aspects of web design. So designing the mechanisms like maybe using HTML, PHP, SQL etc. So they are making use of.

Then **TED eD.** Is another organization which is into the general educational videos of less than 10 minutes on various topics are provided to the learners free of cost.

So these are some of the institutions which are providing the e-Learning services. So there are a number of various other institutions are also there. Then e-Learning service providers include.

- The Open Culture
- Open Yale courses of Yale University
- Academic earth
- Traditional tuitions
- Online tuitions
- Extra marks
- WizIQ
- Exam Bazar
- EdX
- Udemy.
- Then Akash Digital

So like that number of such institutions are there which are providing online educational contents. If you look into the agricultural sector.

- agMOOCs is one of the pioneer in providing the agricultural education. And the e-Learning platform for the students of Agriculture and Allied sciences.

- And in a similar way the Indian Council of Agricultural Research is developing e-resources like Krishikosh wherein you will find all the thesis as well as the publications of the agricultural scientists.
- Then Consortium of Education and Research in Agriculture, wherein all the publications of the scientists are coming on a common platform. So that each one is having an access to the educational contents.
- And Agridaksha is an expert system that is being provided for learning opportunity for the farmers.

So this we will be discussing in another discussion at length.

Synchronous and Asynchronous e-Learning

Now coming to the concept of synchronous and asynchronous e-Learning.

- The synchronous e-learning occurs in real time, with all participants interacting at the same time. It means the physical presence is very very essential. In case of asynchronous it is self-paced and allows participants to engage in exchange of ideas or information without the dependency of other participant's involvement at the same time. Means, in your free time so that you can make use of these things. So you need not be physically present at that point of time to be part of that particular system.
- It involves the face to face discussion models. But in case of asynchronous e-Learning, so you can use the technologies such as e-mails, blogs, discussion boards, as well as web supported text books, hypertext documents, audio and video courses etc. So that you have that freedom or leverage of making use of your free time.

Advantages of e-Learning

Then coming to some of the advantages of e-Learning

- So it is open access to education and including the degree program. You can get the degree programs also through this, and the basic thing is open access that you have for purpose of education.
- Then integration of non-full time students. So if you are engaged in some activities for which you are not able to spare time. So for such students e-Learning is one of the excellent opportunity for continuing their education.
- Then improved interaction between the students as well as instructors, because of the platforms that are available for interaction. And students making use of those platforms, so it is an excellent opportunity.
- It enables the students to independently solve the problem. Because you are not having your maybe the course instructor or the so called teacher at your disposal. So that is how you are making lot of efforts. So that with that process you will be becoming an independent man.
- Then development of technological skills through practice and in extension we say that learning by doing, this is what happening largely in case of e-Learning.
- Then there is as we have already said, these technologies are age neutral also. So age is no bar in acquiring the education.

Disadvantages of e-Learning

Some disadvantages of e-Learning include.

- Ease of cheating is one of the issue. Because there is no monitoring of maybe the course instructor or a teacher, as we

have in case of traditional system. So because of that you may involve in the process like cheating.

- Then bias towards the technology savvy students. Those who are more technology oriented. Only those students are getting the benefits, but in case of traditional methods we have an opportunity to motivate them to be part of this part, but that is missing here.
- Then teacher's lack of knowledge and experience is another issue in managing the e-Learning platforms or the virtual teacher-student interactions. So even then it is going to hamper the process of e-Learning.
- There is danger of lack of social interaction between the teacher and students, as we find in case of formal education, where teachers and students have a healthy discussion. So that we will be missing through this e-Learning.
- Then lack of direct and immediate feedback from the teachers as well as vice versa from students also. It is missing in case of e-Learning.
- Then asynchronic communication hinders the fast exchange of the questions as well as clarifications.
- And there is a danger of procrastination, because we are going to defer the action for longer time. Because we are going to set our pace, but when we are setting our pace and how we are setting our pace. That itself is under question mark. And that is how there is a danger of procrastination.

Conclusion

To conclude we can say that

- e-Learning is an opportunity for a disadvantaged section of the society, who are not able to come on the formal educational platform. Yes for them this is really a better opportunity.

- Farmers can exploit the potentials of e-Learning. Because that is another disadvantaged section in the country, and it is covering the huge population, wherein they can make use of such platforms.
- Then learning for understanding obviously leads to the adoption of a technology. And that is what is the ultimate goal of extension education process.

So with this we will be concluding this discussion. And in the next interaction we will be learning about the differences between the websites and web portals.

Thank You.

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PDF: e-Learning

3-3 Concepts for better understanding and making e-Extension practical – Website-Web Portal

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/eextension/?p=44#oembed-1

Transcript

Hello friends. I am sure you are already into e-Learning, what we discussed in previous class and harnessing the benefits of e-Learning. And in this discussion we will be looking into the differences between websites and web portals. I am sure some of you might be aware of the differences between the website and a web portal. But many times maybe knowingly or unknowingly, we try to use these websites or the web portals in a synonymous way.

There are clear cut differences between these two issues. So let us look into them one by one. Basically a website is a collection of inter-linked web pages. Typically hosted from a single domain. A website consists of number of web pages and all of them are inter-linked. A website is accessible over Internet or a private network such as the local area network or with the help of the URL (Uniform Resource Locator). You can easily locate it.

Features of Website

But the features of website include,

- It is visible to everyone. Once I launch or host a website. So it means each and everyone, who is having an Internet connectivity can have an access to the contents of the website that you have prepared.
- And there is no restrictions like login or password etc etc.
- Then the content remains same for every user. So user to user there is no variation in the content, which we observe in other concepts. But it is not like this.

Web Portal

Then coming to the web portal. Web portal is basically a personal location on the Internet. It means it has all those security aspects which the website lacks. So this is what is the basic difference between the web mportal and the website. Then it can be reached only with a user-id and a password. It means the security concerns are there. So that is how every user who wants to enter into a particular portal needs to have a specific user-id as well as the password.

Then web portal is specially designed website, that brings information from diverse sources like maybe e-mail, online forums, search engines together in an uniform way. The sources are common, but its processing and content as well as its delivery is different in case of website and web portal. Usually each information source get its dedicated area on the page for displaying information, that we call it as a portlet. Often the user can configure, which ones to display.

So there is the concept of selectivity. Which content is to be

shown to which user, so that the person who hosts this web portal is the decision maker.

Features of a Web Portal

Then coming to the features of a web portal.

- It is public as well as private interface is there. So it is open to the public, provided you have the security measures with you or the openings with you. Maybe the user id as well as the password. Then only it is interface. Then you can access this interface.
- Then access for multiple user role. You can act as an administrator. You can act as an end-user, you can act as a subject matter specialist. There are number of roles depending on the construction of this web portal. So the roles are being assigned and accordingly the responsibilities are given. And accordingly you will be having access to the content in that particular domain.
- Then the personal login is required. So this is what is the basic feature which differentiates the web portal from the website.
- The dynamic content changes frequently than the website. Because it is highly personalized in nature. So each and every user of a web portal is getting his updated information, which is specifically for him and he cannot have an access to the others. But the content in the website is open for all. Anybody can go and see there, and it is common for them, so that is what is the basic difference.
- Then content is unique to the user based on the group member setting. So you are registering to a particular web portal for a specific purpose, for getting a specific information; the required information. And accordingly your login credentials are given to you. Then accordingly you have access to only that particular content. Nothing other than that.

- Then it offers content from various sources. So that depends on the person who designs that. And what are the sources of information that he has. All those things will be accessible to the user of a web portal.

Classification of Web Portal

Then coming to the classification of web portal. So the first type of web portal that we come across is the **Horizontal Web Portal.**

Which is a specialized portal for a number of stakeholders. To go into for serving a specific purpose. That maybe related to the production information or the processing information or the marketing information. You have a specific role to play and accordingly you will be getting that particular information. And you will be given access to that particular area wherein you are registering yourself. So that's what is the horizontal portal

Vertical Portal

Coming to the vertical portal or popularly known as the 'Vortal' also.

- So it is a specialized entry point to a specific market, subject area or interest of the choice of the person, who is entering into this vertical portal.
- The vertical information portal provide the news, editorial content, then digital publications, e-commerce capabilities so on so forth. That depends on the need of the end-user, accordingly he is providing the services.
- Then it provides the dynamic multi-media applications, including the social networking, video posting as well as blogging. All these facilities are there in the vertical portal.

So that is how you keep on enhancing your contents and the sources of information. And this is what is the basic feature of vertical portal.

Now if you look into this particular slide. So which shows the

website of the Banaras Hindu University, wherein each and every individual having access to the contents of this, and it contains number of web pages. You go on searching for topic of your interest, it is there and you can get lot of information with the help of this website, just accessing the different pages.

But when you come to this slide. Which shows that it is the student's portal of the Banaras Hindu University. So wherein each and every student is given a login credentials; user name as well as password. He can access the content. Maybe he can look into his marks in a particular semester. He can look into the contents, maybe educational contents using that portal. And maybe he can look into his grade point averages etc etc are the facilities that are given to the students and accordingly he will be updating himself.

Then coming to the point wise differences between the website and web portal.

- **Base**: If we look into the fundamental aspect or the basic aspect. The website is the location on the internet, accessed through a URL, but the web portal provides a particular point of right of entry. Without that right of entry, you cannot enter into a web portal.
- **Element**: the element that is present in the website is the process by an institution or an organization. There also an institution or organization coming into the picture, but with certain restrictions. As I have shown you the website as well as web portal of Banaras Hindu University, wherein in case of portal, there are restrictions for entry. Maybe as a faculty member or maybe as a student. You have a restriction, that is what is the basic difference.
- **Interface**: the interface in case of website is one way. But the interface in case of web portal is two way. You cannot ask questions in a website. But you can ask questions in a portal. If your marks are wrongly entered, if your name is wrongly entered or if your OGP is wrongly entered or if you are not getting the content. All these things that you can put on the

portal, so and you will be getting the response within the stipulated period of time. So that's what is the two way communication that we say.

- **Property:** then when we look into the property. In case of website it is general purpose, then space is open for everyone. Then it need not be a knowledge domain. In case of educational institutions obviously it is a knowledge domain. But there are a number of various other websites which may not be a knowledge domain. But in case of web portal it is for the specific purpose. There we said it is the specific purpose, but it is the general purpose in case of websites. But in case of web portals it is the specific purpose. Then space is not open for everyone, as in case of the websites. And it is a gateway to the explicit knowledge domain only. For that purpose only we are designing the web portals.
- **Traffic**: then in case of website the traffic is very high. But in web portals the traffic is very limited, because of the restrictions that are imposed.
- **Management**: and if you look into the management. Websites may or may not be updated at regular intervals. But the web portal is having the updation of information at regular intervals. And that's what is the basic feature of the web portal.

Conclusion

To conclude we can say that

- The website and web portals can basically be differentiated based on the personalized information and quick access.
- And a web portal renders personalized information to the users, which we find the generalized information that is available in the websites.
- And website is open for all to provide the information, unlike

the web portals wherein you are getting the specific information.

Put together as a learner of extension aspects. So this gives us an insight that if we develop a web portal for the purpose of farmers. Farmers can also have the personalized information access and for which he may develop his skills, as well as he can empower himself to get that personalized information. So that he can take appropriate decision for the purpose of his agricultural operations, marketing options as well as the processing as well as other entrepreneurial options. So that it becomes an instrument for empowerment of the farmers. So that's what is the thing we can learn out of this understanding of the differences between the web portals and websites.

So with this we will be concluding this discussion, and in the next interaction we will be discussing about the concept of expert systems.

Thank You.

Download

PDF: Website Vs Web Portal

3-4 Concepts for better understanding and making e-Extension practical – Expert System

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Transcript

Brief Introduction

Hi! Friends. In our last interaction, we discussed at length about the differences between the website and web portal. I am sure by now you must be thinking of, how can we develop a web portal for the purpose of providing extension services, specially the farming community, the input supply agencies, and various other service providers of agriculture and allied sciences. In this interaction we will be discussing about the concept of expert system and some of the examples of expert system that are being adopted in agriculture as well as agricultural extension services.

What is an Expert?

So now let us have a look at the concept of an expert. Basically we call an individual as an expert,

- Who solves the problem easily. Who provides us the solutions for existing problems.
- And who asks the appropriate questions. Because without asking questions he cannot solve this problem. And the number of characteristics that we are discussing here.
- And ultimately they use their knowledge very efficiently to provide the services to the end-users

Then the similar things are being simulated with the help of the computer, which we call it as an expert system. Basically expert system is a software.

- That emulates the human expert. Whatever the services that an expert provides to solve a particular problem. So now the same things are being adopted with the help of a machine, which we said that it emulates the human expert.
- It deals with the small, well defined domains of expertise, wherein that depends on the information that what we are feeding to this systems, and accordingly it is analyzing the issues and giving the solutions.
- Is able to solve the real world problems based on a set of questions that the receiver is asking.
- It is able to act as a cost effective consultant, because it is a machine that we are designing in such a way, that it is providing solutions on a regular basis, on a continuous basis without tiring, which a human being it is a bit difficult. That is how it is becoming cost-effective.
- Then it can explain reasoning behind the solution it finds as per the information that has been fed to the system.
- And it should be able to learn from the experiences also.

Basic Functions of an Expert System

So if you look into the functions of this expert system. So there is a user who is in search of a solution for a particular problem. And he has number of facts with him, so that he is feeding to the system. And there is a knowledge base in the system, which is being fed by an expert in the form of a digitized information. So when you start asking the question, it establishes the interface with the engine. And it tries to develop the logical solution for that and ultimately, as an expert it gives solution to the end user.

   This particular storehouse as well as the logical analysis process that we are trying to identify it as the expert system.

Problem Domain vs Knowledge Domain

So if you look into the problem domain versus knowledge domain.

- Every individual has a limitation that he can be an expert of a particular subject matter. He cannot think of being a subject matter specialist of each and every subject. So that is how the problem domain is much larger than the knowledge domain.

You can have the knowledge domain of maybe agriculture, finance, science, engineering etc. that becomes your domain knowledge, but when you look into the problem domain, it is very huge in nature

- The expert's knowledge about solving specific problems is called the knowledge domain, which is relatively small compared to the problem domain, which is relatively larger
- The problem domain is always superset of the knowledge domain, which is larger in nature.

Creating an Expert System

Then how can we create an expert system.

- With the help of extracting the knowledge and methods from an expert. That's what is the knowledge acquisition process. It is a very lengthy process, wherein we need to collect a huge amount of data to develop an expert system. Because it is the first and foremost process is the knowledge acquisition process.
- And the second one is the knowledge representation process. How we are processing and how the outputs are delivered.

So these are the two basic steps in creating an expert system.

Paradigm of Rules

So this entire process works on a set of rules. How we frame these rules. So there is if-then relationship. What is that if-then relationship. If for example in case of agriculture. If the leaves are green or yellow or black or whatever it is. So the color that we will be denoting here and the condition of the roots that we are trying to put here. So then what might be the possible effect of the color of leaf is like this, and the color of roots are like this. Or the status of leaves are like this or/and the status of roots are like this. So then what are the possible effects of that. And accordingly the solution is provided.

   Another set of rules. If your soil color is maybe red, then the texture is sandy, then water holding capacity is less. So then the suitable crops might be, the crops like maybe the bajra or maybe groundnut, whatever it is, so on and so forth. It depends on the if and then relationship. If is defining various conditions, wherein we

are trying to fill in the blanks by providing appropriate conditions and accordingly the system is going to give us the results.

Desirable Features of an Expert System

Then desirable features of expert system include,

- Dealing with uncertainty. Because we don't know what kind of questions that we are going to face. And at the same time what kind of answers that the system has to provide. So that is why it is trying to collect huge amount of information.
- It should provide the explanation, based on the if and then relationship, as we have seen in the previous slide.
- Then the ease of modification. There should be a space for modification of maybe the response that the system is giving.
- And there should be transportability
- As far as adaptive learning features in case of expert system.

So this is example of an expert system, which is very popular nowadays is the 'Rice Doctor'. So we will be discussing these slides like the expert system that is developed by the Tamil-Nadu Agricultural University, in collaboration with the Indian Council of Agricultural Research.

Expert system for the paddy. So if I enter into this particular system. So what are the problems that I am facing. Maybe related to the insect management. So then I go for the crop protection page of this expert system. So based on my questions, so there are different pests that are mentioned there. So it asks which kind of pest problem that you are facing. So looking into the nature of damage, I have identified that pest as a stem borer. So for identification of that particular insect. So there are number of photographs that are provided on that particular page.

Looking into the photographs that are available on that page as a part of expert system and what are the symptoms that I observed

in my field. So combining these two things, I am coming to the conclusion that yes it was the stem borer. So then it gives you the symptoms. What are the possible symptoms of this stem borer. So how it looks like. Then how exactly the crops looks like at the field, which is affected with this stem borer. So then based on these questions and the relevant answers from the receiver. So it is trying to provide you the possible solutions.

The management practices. Maybe the chemicals that you need to go for. Or some of the management practices that you can think of by using various alternative methods of control. So this is how the expert system is trying to provide you the relevant answers, based on the set of questions that the receiver is asking.

Advantages and Limitations

The advantages of this expert system include,

- Capture of scarce expertise. Because providing appropriate information itself is the biggest challenge, specially in case of the agriculture and allied sciences. Looking into the nature and the biological system, that what we are facing.
- Then superior problem solving. It is situation specific, location specific. The same pest and the same disease, which is prevalent here in the similar conditions, it may not be prevalent in some other parts of the country or other parts of the State itself. So that is how the problem solving mechanism becomes more complex in case of agriculture and allied sciences.
- And the reliability is one of the important feature of this expert system, you can rely on because it has already collected huge amount of data, based on the data it is giving you the response, under the supervision of an expert who has designed this particular model.
- Then work with even the incomplete information. So even if

you are not able to identify all the symptoms. But if you are able to provide some of the responses. Even then you will be getting the best possible results.

- Then you can transfer this particular knowledge, one to many.

The disadvantages or the limitations of this expert system include.

- The expertise is hard to extract from the experts. Maybe it is the human expert. Or maybe it is the system who is acting as an expert. Because you don't know how and you don't want to tell, and all do it very different manner as far as the human beings are concerned. And similarly, the similar things are being fed to the computer systems. And accordingly it becomes a bit difficult for the end-user to get the response.
- Then knowledge not always readily available, because of the lacunas of the information that is being provided to the expert system. If that information is not complete in nature. So accordingly the results are also being influenced.
- Then difficult to independently validate the expertise. We need a huge number of experts to validate the experiences. So that is how, that's another limitation of this
- Then high development, initial costs are a bit higher for development of these particular systems.
- Then it only work well in the narrow domains. Because we cannot think of all the problems and every problem related to agriculture and allied sciences. We need to start with a specific problem, then we need to go ahead with.
- Then the machines cannot learn from their experiences. It is the individual who is learning. Then it has to be adopted as per the needs of the machine, and as per the logical conditions of the machine.
- And it is not suitable for all types of problems. Because there are number of location specific problems, region specific problems and the problems which need higher attention by the end-user. Such issues we cannot take it up, in case of the

expert system.

Conclusion

To conclude we can say that the expert system

- Helps to overcome the shortage of experts in the specific knowledge domain. As we have already said the routine type of problems, that can be taken care by these expert systems as on date. So looking into the specific problems. So that can be taken care of by the specific individuals who are already available, because with that we are saving the time of the experts also. So they can spare their time for some other activities.
- Then it save the time of expert. Machine answer similar to the question by all receivers, because there are number of people who are facing the similar problems. And all of them if they come to maybe an extension professional, or a scientist. It takes lot of time of the expert as well as the extension professional to answer the same questions. But once we put these things into the machine. Machine can tirelessly take care of these situations, and they keep on providing the answers to the users.
- Then the learner should adopt the method of learning by doing. Until and unless he becomes part of this system, so he cannot understand the problems as well as the possible solutions. So he should be part of this system as well as his participation should be ensured. So that he can get the better solutions for this.

So this is in a nutshell about the concept of the expert systems. And the number of expert systems that are available, because Indian Council of Agricultural Research has also developed a number of

expert systems, which are available on Indian Agricultural Statistical Research Institute website. IASRI website. So there are a number of expert systems in the name of Agridaksha, Maizedaksha, then Aqua portals are available, wherein you can find the solutions for the problems that are what the farming community is facing.

So with this we are coming to the end of this discussion. And in the next interaction we will be discussing about the artificial intelligence and its application in agriculture.

Thank You.

Download

PDF: Expert Systems

3-5 Concepts for better understanding and making e-Extension practical – AI in Agriculture

> ⬚ *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/ eextension/?p=48#oembed-1*

Transcript

Brief Introduction

Hello friends. In our previous discussion, we talked about expert systems. And I gave you some of the examples of expert systems. Maybe the Rice Doctor or the expert system developed by the Tamil-Nadu Agricultural University. The expert system developed by the Indian Council of Agricultural Research in the name of Maize agridaksha. So I hope by now you must have tried these expert systems, and how the solutions are being obtained by the farming community as well as the students as well as researchers by these expert systems.

In this class we will be discussing about the Artificial Intelligence, and how it can be utilized for the purpose of providing extension services.

Artificial Intelligence

Artificial intelligence is the ability of a computer or computer enabled robotic system to process information and produce outcomes in a manner similar to that to the thought process of humans in learning, decision making and solving the problem. The similar conditions that we are trying to create here in the machine as it is analogous to the brain of a human-being. So it keeps on getting the inputs from the machine and it behaves like the human brain, and it tries to provide you the solutions.

And how it works. So let us look into that. So Mcarthy who is considered the father of artificial intelligence said that, *"It is the ability of the machine to perform cognitive function, we associate with human minds such as perceiving, reasoning, learning and problem solving"*. So these processes till day are the domains of the human-beings and they are limited to the human brains. Similar systems are being developed with the help of machines. So that's what is the concept of artificial learning.

AI in Agriculture

So when we look into the need for artificial intelligence, in case of agriculture. The available statistics says that,

- Holds the promise of meeting the demand to produce 50% more food, and cater an additional 2 billion people by 2050 as compared to today. So this is what is the extrapolated data. By 2050 we need to almost double our food production, wherein we need to take the help of artificial intelligence. Then only we can feed the growing population.
- It has the potential. Artificial Intelligence has the potential to address the challenges such as

- ◦ Inadequate demand prediction. Because it is bit difficult process to estimate the population as well as the demand that are emerging out of this population growth.
- ◦ And lack of assured irrigation, which has become the global problem not only in Indian context. So everywhere water is a scarce resource, and how can we make the best utilization of this water as a resource specially for cultivation of crops. So wherein artificial intelligence is going to help us.
- ◦ Then overuse or misuse of the plant protection chemicals is another important issue wherein we can take the help of the artificial intelligence.
- The improved crop yield maybe
  - ◦ through real time advisory that we are going to provide to the farmers, wherein artificial intelligence can play a dominant role.
  - ◦ Then advance detection of pest attacks. If you have the prior information, you can take the precautionary measure. So that the plant protection chemicals can be used at its minimum, so that improving the health of the end-users.
  - ◦ Then prediction of crop prices is one of the important issue, specially in case of predominantly agricultural nations like India. And to inform about the sowing practices. Because the date of sowing is very crucial. As per the studies, so if we delay the sowing by a particular day, so that is going to end with the losses in case of yield. So that's what we need to take care of.

Insect – Pest prediction enables farmers to plan

- The artificial intelligence enabled App developed by the Microsoft and United Phosphorous Ltd, which is known as the

pest risk prediction App, which predicts the attack of the Jassids, thrips, whitefly and aphids.

So these are the prominent insects, what the farmer is using huge amount of chemicals to control these things. Without spraying chemicals it is very difficult for a farmer to control these insects. In such circumstances if you have the prior information, we can prepone or postpone the date of sowing, so that we can miss this attack of pests. Or there are many other manipulations that we can take up in crop management practices. But there should be valid data as far as the prediction of the occurrence of these insects are considered.

- So it helps to take preventive action, then provide guidance on the probability of the pest attacks. So that is how the farmer can take the decisions.
- So if you look into this artificial intelligence enabled App. So more than 3000 farmers with less than 5 acres of land in 50 villages across Telangana, Maharashtra, Madhya Pradesh are receiving voice calls for their cotton crop. So which is one of the major cash crops in these regions, in the central part of India including Madhya Pradesh, Telangana as well as Maharashtra, which is known as the cotton bowl.

So you can save huge amounts of money. Money is not the only criteria. The health of the farmer, and health of the soil as well as the nature that also we can protect with the help of such predictive mechanisms. And another perception what we have is the small and marginal farmer, it is a bit difficult to use these information-communication technologies.

So that is how just I would like to draw your attention. So more than 3000 farmers with less than 5 acres of land. Means they are all the small farmers that we can say. So who are making use of the best possible use of this artificial intelligence techniques, so that they are predicting the insect attacks.

- The calls indicate the risk of pest attack based on weather conditions and crop stage in addition to the sowing advisories. So these are the additional services that the App is giving. The artificial intelligence systems are giving.
- Then the risk of classification is high, medium and low so that if the risk is high there are different set of precautionary measures that you can take. If the risk is medium and low accordingly, you can take the precautions and ultimately you can save the crop.

Crop Yield Prediction Model

- Then coming to the next model that is the Crop Yield Prediction Model, which is developed by the NITI Aayog in collaboration with IBM. So a govt institution and a private institution, they are coming together to develop an artificial intelligence mediated system for predicting crop yield.
- Basically IBM's artificial intelligence model for predictive insights include,
  - To improve the crop productivity.
  - To control the use of agricultural inputs. Maybe it is seed, insecticides, fertilizers, so on and so forth.
  - Then early warning on pest and diseases outbreak, then using the data from ISRO. So this is one of the key feature of this crop yield prediction model, that we can say. So satellite data are already available. So but how can we make best use of this data, using this artificial intelligence is the application models that we are coming out with. So with the help of these models, yes we can make excellent use of it.
  - Then we can develop the soil health cards using the artificial intelligence.
  - And using IMD weather prediction and the soil moisture,

temperature. So we can schedule our irrigations etc.

So these are some of the uses of this Crop Yield Prediction Model.

- This particular crop yield prediction model is being implemented in States like Assam, Bihar, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

The northern as well as the eastern part of the country are being benefited by this artificial intelligence model developed by NITI Aayog in collaboration with IBM, that we can say.

AgroPad : Chemical Analysis of Soil and Water

Then coming to another example of artificial intelligence, which is known as AgroPad, which is basically used for analyzing chemical aspects of soil and water.

- It enables real time, on location; chemical analysis of soil and water.
- A drop of water or the soil sample is placed on the AgroPad, as we can see in the photograph.
- So wherein the microfluidic chips, which is inside the card, it performs on the spot chemical analysis of the sample and provides results within 10 seconds
- In the form of development of these circles. So these circles are the outcomes of the result.
- But how to analyze these circles. So there is an App developed for the purpose. You need to take the photograph using your smartphone. And with the help of that App the results are also available to you, so that it gives the results of that chemical analysis based on the circles and their color.

Because the colorimetric techniques are being used there. So using

those techniques it is giving us the results. Yes this type of chemicals are prevalent in this sample. And this is whether it is in a high range or medium range or a low range, and accordingly the precautions are to be taken. So this is what is about AgroPad.

AI Sowing App

Then coming to artificial intelligence sowing app.

- So developed by Microsoft in collaboration with ICRISAT. ICRISAT is an institution located at Hyderabad. So both these institutions put together developed this sowing app.
- It sends the sowing advisories to the farmers on the optimal date of sowing. As we have already discussed the importance of the date of sowing. So if we miss that particular recommended date of sowing. So subsequently we are going to lose a huge amount of yield in terms of reducing the yield. That is why the date of sowing is very crucial decision the farmer has to take in performing the crop production.
- So then for this purpose you need not have any sensor to be established in your field. So you are free from that, but you need a phone for receiving the text messages. Because this is so systematic model, only if you have the phone you will get the information.
- The advisories contained the essential information including

    - The optimal date of sowing, so that you can plan accordingly
    - Then soil test based fertilizer application. So once you add your soil testing results. It gives you the dosage that need to be applied as far as the fertilizer is considered.
    - Then the amount of farmyard manure that you need to apply for your field, again that is based on the soil testing results.

- And the seed treatment and what are the alternatives that you can think of for the purpose of seed treatment. That is also being sent to you.
- Then the optimum sowing depth, based on the soil moisture, texture; number of factors that it is analyzing, and it is trying to provide you the advisories.
- So as on date more than 3000 farmers across the States of Andhra Pradesh and Karnataka are getting the benefits of this
- And as per the studies conducted. The reason increase in yield of up to the extent of 10 to 30% increase in yield, because of the advisories that are being provided by artificial intelligence sowing app.

AI and Challenges in Agriculture

There are certain challenges in application of artificial intelligence in case of agriculture and allied sciences. So which include,

- The lack of familiarity with the machine learning solutions among the farmers. So farmers still need to be educated on this. How to make use of these applications. So that they can harness the benefits of this
- Then exposure among the farming communities to the external factors like weather conditions, soil conditions and presence of pest is quite a lot, so that is why many times the advisories even that are being provided by these artificial intelligence based systems, so they may not work under certain extreme conditions because of the biological nature of the production.
- Then artificial intelligence systems also need a lot of data to train machines and make precise predictions.

So this itself is posing a challenge. But a number of experiments that are going on, and number of successful results are also before us. So that encouraged by positive results, the scientists are working on these models. As we have already said many times that agricultural production process being a biological in nature. It has its own gestation period. So it is not that we can generate all the data in one week or one month or so. So it needs to take at least depending on the crop, 90-100 days and in some cases 120 days. So we need to have that gestation period to develop one set of data. And many sets of such data are essential for the development of this system. So that is how it is taking lot of time to come to the appropriate conclusion.

Conclusion

Then to conclude this topic on artificial intelligence in agriculture

- The future of farming depends largely on adoption of cognitive solutions. So far the solutions what we were getting from the experts or the research system. So now they need to be replaced with this knowledge based solutions. Because the farmers are also having enough information as the scientist is also having. But we need to have some advancements in this sector, then only there will be a sea change in the agricultural scenario.
- In order to explore artificial intelligence in agriculture, application need to be more robust. So more and more number of farmers should come forward and more and more number of institutions should come forward to make this system more robust, as we have already said. It needs a huge amount of data over a period of time. Geo-spatial, so over a large geographical area. As far as over a period of time we need to have huge amount of data. That needs to be added to this. Then only we

can come out with the beautiful solutions using the artificial intelligence.

With this we are concluding this discussion on artificial intelligence, specially in case of providing the extension services. And in the next discussion we will be talking about 'Bring your own device' which is an innovative way of teaching as well as learning, and making the professional more effective, in the next week.

Thank You.

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PDF: Artificial intelligence for extension advisory service

4-1 Means of achieving e-Extension – Bring Your Own Device

> *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/eextension/?p=50#oembed-1*

Transcript

Brief Introduction

Hello Friends. In our last week, we discussed various concepts for better understanding and maintenance of e-Extension in practice. In this week we will be focusing on the issues, which are the means of achieving e-Extension. The first such topic that we will be taking up in this week is Bring Your Own Device or BYOD concept.

What is this BYOD?

- BYOD is basically a device. A *"device" is defined as a privately owned laptop, tablet, computing device, notebook, netbook, e-reader, iPad, iPod Touch, or a smartphone. All these instruments which are owned by an individual are known as privately owned devices*

Basically Intel Corporation which is an American company, which manufactures semiconductor chips observed that the employees of that organization are bringing their own devices and they are using the networks of the company. And they are giving the products as well as the services to the company. Under such circumstances when the company started observing these things, so then the company started thinking that; why should we provide the devices to the employees.

If they are given certain financial assistance and the choice to them, so that they can have their own device and the production as well as the productivity of the organization can be enhanced. With this idea the concept of BYOD came into existence.

Why BYOD?

So why we can choose the Bring Your Own Device concept. The reasons behind include.

- The current generation that what are we are dealing with, and the generation what we are expecting. So they are identified as the digital natives. So they have many options with them. Because they are digital natives, they know number of technologies, they can operate number of devices, as well as they can make the productive use of that. So that is how a choice should be given to the end-user, so that he can come out with more number of technical, technological as well as the production aspects.
- Then students should understand, when and how to use these tools that are appropriately, collectively. And are imperative in each student's education. So under such circumstances, now again the onus lies with the learner or a student. So that he can make a better choice for his own learning purpose.
- Then learning environment where technology is a part of us.

So we are not a part of the technology. So that is why we need the concept of BYOD.

So this particular concept is having a three fold impact. What is that?

The first one says that it increases the amount of devices that can be used for enhancing learning purpose. So when you have a number of technical as well as technological options. Obviously learning of the interested learners is going to be doubled.

Then secondly it avoids unnecessary spending on hardware resources by the organization, incase of this production organization or as a student you can have the best possible choice.

Then the third impact includes. It avoids doubling and sometimes tripling up on the devices. And where the computer is redundant for much of the day, because it is hidden in your pocket. So that you can make the best use of the device which is of your choice.

Why BYOD – Future Demand

Now future demands of BYOD include.

- The younger generation is entering a world, that is looking for abilities far different from the traditional. So that is why we should give them the option of BYOD, looking into the new generation.
- Then the second reason is, institutions want them to be able to collect, synthesize and analyze information, and work in collaboration with others to apply that particular knowledge. Hence the choice should be with the learners or the employees. So that they can give the better results.
- And the third reason is, professionals need to learn, how to learn. So how to learn is more important. Because he is aware that yes he should learn. But how he is going to learn; so for

that particular purpose there should be number of choices. To respond to the constantly changing technologies and social as well as global changes in the world. To make himself adaptable to these changing situations, BYOD is an essential issue.

BYOD Program Goals

Then the BYOD program have the following goals.

- The first one is, it increases employee's productivity through mobility. Because the choice is with the employee or the student
- Then they drive employee satisfaction and retention. Because the option that the employee had, so they were exercised with, so that is why enjoys more satisfaction in case of BYOD, rather than the providing him the devices by the organization itself.
- It reduces security threats from employees, using their own devices. Now the organization as a whole need not worry about the issues related to security, because the employee himself is responsible for the content he is generating and he is making use of.
- Then it reduces device management and procurement time as well as cost for the organization, because the employee has his own choice with him.
- Then it reduces the time and cost associated with the support calls related to the management and the sustenance of the devices.
- Then it simplifies the employee and the contractor on boarding.

So these are some of the goals with which the BYOD concept is being brought in.

BYOD Program Considerations

Then the BYOD program considerations include.

- **Eligibility:** Number one is, it is eligibility. Who are eligible to being given that freedom of Bring Your Own Device. So they are searching for a particular set of qualities in an employee. So which users will have this particular access. So those who are technology savvy, who can make this better choice with them. So only such employees will be eligible
- **Devices:** So which are the devices that they are going to allow for this Bring Your Own Device concept.
- **Apps and Data:** Then apps and data that are essential for the purpose with which that he is employed.
- **Support:** Then what kind of support that he can give to the organization, as well as he can support his own work.
- **Services:** Then what kind of services that an employee can give to the organization. And the Information Technology offers to the organization.
- **Financial:** Then what are the financial considerations. What is the cost of the model? And what is the cost of that approach? Whether it is costing the company or the institution which is adopting this thing.
- **Legal:** And what are the legal considerations of adopting BYOD.

So these are some of the issues before we exactly adopt BYOD, need to be considered.

BYOD Rationale

Then coming to the rationale. So the logical reasoning behind the acceptance of the concept of BYOD.

- Choice: the first rationale is the choice. Learners are diverse in nature, because they may be socially, economically, technologically, then learning ability wise. There are number of considerations that we keep on coming across. Then the learning styles and preferences of each and every individual vary. So it varies from individual to individual, hence the learner have an opportunity to choose the devices as well as applications which are suitable to him. So that's what is the first rationale, we discussed about; the choice.
- Anywhere/Anytime: then the second thing is the anywhere and anytime. So if the organization provides him the instruments or the devices. So there is a binding that he cannot take it to the home or any other places. But the moment he started having his own devices, so he has that particular choice, so that is why that is what is the meaning of anywhere and anytime.
- Personalized: then it is highly personalized in nature, because the owner of the device is the individual who is responsible for this. Then with own devices he can have number of tools, shortcuts, widgets, add-ons etc etc. So that strengthens his working ability, so that's what is another rationale that we are trying to put before the BYOD.
- Preparing for the future: then he is preparing for the future. Exposure to BYOD environments at intermediate, college, university will help the learners to develop the skills which are required for the future. So that he or she is getting himself or herself prepared for the next generation of activities at this stage itself.
- Flexible Learning: then flexible learning is another rationale that we come across. The nature of learning is changing over a period of time. Then it creates the flexible learning environment that facilitate collaborative and individual learning. So that is why we need to adopt the concept of BYOD.
- Digital Fluency: and it is going to influence the digital fluency also. So how fluent you are in making use of this particular

technology, because he is going to be well versed with these processes the moment he has his own devices.

Which mobile devices are allowed?

So if you look into the Internet enabled devices which are suitable for the BYOD include. There is a list, so which we can say that it is

1. iPod Touch
2. iPad
3. smartphone
4. laptops
5. netbooks
6. as well as e-Readers

are the suitable devices for this BYOD concept.

And **"What are the benefits of employee owned devices"**? Because now the responsibility is shifting from the organization to the individual.

1. Number one benefit is the satisfaction of the employee. So in a survey that was conducted, more than 57% said that employee satisfaction is very very important. And that is what is the first thing.
2. Then it is going to influence the productivity aspect. Means the organization is going to be benefited out of this concept,
3. As well as it provides mobility to the employee and
4. As well as lot of flexibility is there.

So these are some of the better features of this.

Feedback from Survey

The feedback from the survey of the institutions which are adopting this BYOD concept include

Business Drivers of BYOD

The business driver of BYOD are

1. Reducing the cost while increasing the productivity. So this is

what is the feedback of the people who are adopting this mechanism, which revealed.
2. Then it improves the business continuity for that particular organization.
3. It encourages flexible working environments
4. Then it keeps the staff happy, because the choice lies with them.
5. The desire to consumerize information technology is another business driver of the BYOD

Employee Drivers of BYOD
The employee drivers of BYOD include

1. No need for two devices. One instrument at home and another at office. Because with the common set of devices that the employee can work.
2. Then no training is needed. No additional training is necessary for this.
3. Then get to choose their own device rather than being told to use the specific "company device". Because they are getting freedom from this particular aspect.

Upsides of the BYOD
The upsides of the BYOD include.

1. The increase in the learner as well as the employee productivity.
2. Increase in morale of learner as well as employee
3. And more convenient to the learner and the employee
4. And the reduced financial burden on the institution.

So these are the positive aspects of BYOD
Downsides of BYOD
And at the same time, so there are some concerns also, which we can call that. So over a period of time this may limit the use of the concept of BYOD.

1. Number one is the risk of security of information. Because every organization has a particular mandate, with which that it is working. So under such circumstances when the employee is carrying these devices to their home and to his personal places. So then the data of the organization and the security issues associated with that are at risk.
2. Then the second downside of the BYOD is the risk of the theft of data of the company. So this is what is another concern that the organizations are having.
3. The third concern is since the personal devices are shared by the family members, maybe knowingly or unknowingly. So the data can be breached at any point of time. So this is another concern.
4. There may be the cases of cyber-harassment or similar kind of things, specially in the new media or the social media. The data can enter into any of these channels. So that's what is another concern.
5. Then learners should understand what to be shared and what not, before adopting the new devices on a large scale.

So these are some of the concerning factors as far as the adoption of the BYOD is considered.

Conclusion

To conclude, we can say that the proliferation of the devices such as the tablet and the smartphones which are now used by many people in their daily lives has led to a number of institutions to allow the learners as well as their employees to bring their own devices to the work due to perceived productivity gains as well as the cost savings. Ultimately the organization is having the benefit provided we take care of the security as well as the data related issues by the organization as well as the individual who is making

use of these devices is also equally responsible in maintaining the secrecy related to the organization, because it is going to benefit him in the long run.

So this is all about the concept of Bring Your Own Device. We can adopt such mechanism in case of extension services also. Extension professionals being the service providers. So they can make use of this concept in delivering the extension services. In the next discussion we will be taking up the concept of blogs and how the blogs can be used for delivering extension services.

Thank You.

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PDF: Bring Your Own Device

4-2 Means of achieving e-Eextension – Blog

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Transcript

Brief Abstract

Hello friends. In our previous discussion, we talked about the concept of 'Bring Your Own Device' and what are the upsides as well as the downsides of that, and what are the implications of using the concept of BYOD or the Bring Your Own Device. In this discussion we will be taking up the issue of blogging for augmented education as well as the extension services.

Introduction

- So just to introduce the concept of Weblog coined by John Barger on 17th,December, 1997.
- The term blog which is the short form of weblog which was coined by Peter Merholz.
- Basically the term 'blog' is used as a noun as well as a verb also. When we use it as a noun. It means you are creating a blog and

you are providing contents to this blog. And as a verb you can edit one's weblog or you can post on one's weblog.

So now we heard about the genesis of this term blog. But what exactly the blog means.

Blogs are the personal journals written as a reversed chronological chain of text, images, multimedia which can be viewed in a webpage and made publicly accessible on the web. It means in a shortest possible manner, we can say that blog is your personal website, so wherein you can post your ideas, and it is open to the people who can comment on that. Who can add to that number of options that are available.

- So there are multi-author blogs or the posts written by large number of authors and professionally edited like Wikipedia, that you can see. You can post the concepts and number of people who can add contents to that and ultimately it is becoming the repository of information for the general public.
- The rise of Twitter and other micro-blogging systems helped integrating the multi-author blogs and the single-author blogs into societal streams.
- So earlier people were having very limited sources, wherein they can express themselves. It used to be the traditional information-communication technologies like maybe the radio or the newspaper or the television. But now with the advent of the Internet and its application in various areas. So a number of options that the people are getting and people are following them also.
- There are millions of blogs that are available. Because everyone can create number of blogs based on his choice.

Features of Blog

Coming to the features of blog. What exactly this blog means? As we said so,

- It is the personalized website and the posts include the subject title and the body of message. You can create your own blog. I will be showing you some examples, how the blogs are there. And it has the subject as well as it has the content for that particular title.
- Then posts can be relatively short in length such as one or two paragraphs. That depends solely on the author who is composing the text.
- Then it comprised of the text, pictures, graphics or multimedia content. So again it is the choice of the blog writer. He can add all these features to them
- Then posts receive a timestamp to denote the time and date of the post. So that you can chronologically grade it, so when this post was added. So either you can go in the increasing order or in the decreasing order. So the choice is with you.
- Then the readers can respond to the post through a comment or the feedback link. So it is not that it is one way. The blogs are always two way processes. You can get the feedback and on that feedback you can comment, and that is how you can continue the discussion.
- Comments create the thread as many readers can comment on the post. It means you can begin the process of dialogue through these posts, and you can come to a logical conclusion based on the discussions.
- Bloggers can also respond back to the reader's comment and this is how the process of dialogue begins with.
- The front page of a blog contains only certain amount of posts and rest of the pages that can have number of contents.
- Then archives can be organized by month, week or by the

number of posts etc etc. The choice is with the blogger.
- Then the presentation tools that allow the pages to be built from pre-existing templates. Like this you can make use of the pre-existing template, and you can create your blog. The blog authors can choose a variety of graphical layouts also. Again that is another feature of the blog. Then the typography and other color schemes are also there. You can make it colorful based on your choice.

Types of Blogs

Then coming to the types of blogs. So the blogs can be classified into

- Personal blogs
- Community blogs
- Journalism blogs
- Education and Research blogs
- And the knowledge blogs

The **journalism blogs** means it is an alternative form of journalism, manifesting through weblogs that are becoming more popular among the media professionals. Blogs are being used for journalistic purpose like daily events, news, sports etc etc. Because now the time is the important factor in case of the journalism, how early you are in reaching the masses. So that's what is the concept. So with the help of these blogs, you can reach millions of people in the shortest possible time. So that is how once you create the blog, millions of people are observing the same content at the shortest possible time gap and they are responding to that. So that is how you can create lot of curiosity amongst the readers as well as listeners.

   Then coming to the **personal blogs**. They are most popularly used by the individuals. Similar to your personal websites authored by individuals, which include chronological posts as well as links to

other websites and weblogs etc etc. It means this is a more simple way of creating your own personal website, wherein you have lots of freedom as well as lots of choice for creativity and you can go on adding the content and you can invite the people to comment on the content that you have created.

Then coming to the **community blogs.** Similar to the personal blogs so in a group that you can create. It maybe a religious group or academic group or the technology group or the service group. Number of groups that you can create. And you can keep on continuing the interaction with them.

Then **education and the research blogs.** This is an opportunity to promote literacy in learning by allowing the scholars to publish their own writing, whether it is journal or story, or even the comments on class readings. So various options are there for the researchers, the individuals, the students just to create their own blogs for the purpose of learning, for the purpose of educating themselves as well as for the purpose of educating the community also.

Then coming to the **knowledge blogs.** Similar to the education and research blogs. So when you share the contents with you, so that becomes the knowledge blog.

Free Blogging Platforms for teachers and students.

Then the free blogging platforms for teachers as well as students include.

- The **edublogsis** one of the most popular service provider as far as the creating the blogs related to education.
- **Blogger.com** is a free weblog publishing tool from Google. Google has provided this facility. You can create blogs there.
- Then **Blogspot.com** is another service provider.
- **WordPress** is there for creating the blogs.

There are a number of such free platforms that you can create the blogs.

Now coming to making use of the blogs for the purpose of delivering the services. So here you can see the blog on Medicinal

Plants Introduction Center, wherein so they are creating this particular thread for spreading the knowledge related to the medicinal plant. So this is the blog created for helping the farmers, so that you can provide the services. Also you can think of providing services(extension services) or the information to the farmers as well as the internet users in their regional language. So this is the thing that you are observing in case of Marathi language, and this is in Malayalam language. So that you can create the blogs in your regional language also. So there are various options that are available for the purposes of providing the information.

Advantages of Blog

Then coming to the advantages of blog.

- Easy to create and maintain
- Search engine friendly. The moment you create it, the search engine starts showing it to the people who are interested in those keywords.
- Then attract more traffic for fresh comments. So that is how your knowledge is being spread as well as your knowledge is being added on also.
- Then it allows you to interact with your stakeholders, because the number of stakeholders are there. So this is one of the excellent opportunity to crowd source your ideas, and as well as you can get number of ideas from the people.

Disadvantages of Blog

Some of the disadvantages of blog include.

- The plagiarism and copyright issues. So this is the most important issue, because so there is no control over the person who is involved into this process. So he can publish the material which is already published by various other people. So that is how the copyright issues are one of the important concerns.
- Then confidentiality and quality concern is also there. Because there are no quality checks before the information is going into the public domain. In the formal sources, in an official websites of any organization. So anything that is published, so it passes through number of channels as far as quality as well as various aspects are considered. But in blogging such issues are not there. So that's what is the disadvantage.
- Then hard to grade as well as assess. You cannot evaluate the contents there, because it is highly personalized in nature.
- Then user can be distracted very easily by providing the wrong information.
- Then lack of listening and speaking skill training in case of blogs. These are some of the disadvantages.

Conclusion

Then to conclude.

- There is an excellent opportunity to develop a personalized website in the form of a blog. So for the purpose of learning and as well as for the purpose of sharing your ideas, and learning from the experiences of various people.
- Then everyone is free to express his views. Then you can make use of this platform.
- Then it has a potential to exploit in many areas like education, religion, community etc.

So these are some of the plus as well as the minus aspects related to the blog. So this is all about the concept of blogging as well as how to make use of these blogs for the service purpose also.

In the next discussion we will be taking up the issue of content analysis. Content analysis which deals with the content to be provided for the purpose of the masses. And how it can be added quality to that. So that's the issues that we will be discussing in our next interaction.

Thank You.

Download

PDF: Blogging for augmented education

4-3 Means of achieving e-Extension – Content Analysis

Transcript

Brief Introduction

Hello Friends. In our previous discussion, we discussed about the concept of blog and how you can develop your own blog for different purposes. I hope by now you must be motivated to have your own blog. Yes obviously you can, and you can create the class of your own functionaries, so who are having similar ideas. And you can exchange your ideas with the help of this creation of blog. And you can make a community of bloggers so that your ideas are exchanged amongst the groups.

So when we start writing for the blog. So huge amount of content is being generated. Maybe in whatever the language that what we are using. Maybe it is the regional language or a national language or the international languages. Now in this class we will be discussing about the analysis of this content. What is being generated by the professionals, individuals, researchers, by different professionals.

For the purpose of its analysis and its betterment, keeping the target communities in view. So the topic is "Content Analysis".

Definition

So to define this content analysis. *"It is a research technique for the objective, systematic and quantitative description of the manifest content of communication".* The already generated content is there, but it has to be objectively evaluated. Should have the desired benefits in the society.

Content Analysis

- The content analysis attempts to convert the symbolic behavior into the scientific data. So through our writings we have expressed our contents, and in the form of our behavior, which reflects our behavior. So that now needs to be mathematically calculated. So that's what is the basic purpose.
- Then content analysis is applied to the literature produced for research or the service purpose.
- Then the units of analysis include the words, themes, characters, items, space and time measures.

So these are all the essential features of this content analysis.

- Then all analysis are potentially quantifiable. Because we are coming out with some quantitative outcomes out of this content analysis.
- The computer has revolutionized the content analysis because the number of methods that have been developed. It has made the process more simple.

- The methodology is infrequently used in behavioral sciences. But the moment we start using that, there will be the quantum changes in the quality of the content.

Nature

Coming to the nature of this content analysis.

- So it can be viewed from both the views of the qualitative as well as the quantitative.
- So it will be quantitative if it deals with the occurrence of a particular concept. Then a trend of the coverage of the content, and the duration of an event and time. If we take up these variables, so obviously it is going to be quantitative.
- So it becomes qualitative if we deal with the information level of the content. Whether it is at the higher level or whether it is at the middle level or whether it is at the lower level. Or the direction of the content, in which direction it is going. And the motives behind the content, and the attitude behind the content, and values and other origination of the content. If you look at, so that becomes the qualitative analysis of the content

Strengths

Then coming to the strengths of this content analysis.

- It is suited for analyzing and mapping characteristics of the large bodies of text. So after creation of huge amount of content. So now it needs to be evaluated, so whether it is suitable for the public or not.
- Then it lends itself well to systematic charting of long term

changes, and trends in media coverage, so that it can add on to qualities of that.

- Then compatible with the wider research projects as well as the qualitative enquiries.

So these are some of the strengths of the content analysis.

Content Analysis – Key Steps.

Now coming to the key steps that are involved in the process of content analysis. The first and foremost question is.

- What exactly is the research question with which that we are beginning with the content analysis.
- Then identification of various sources of the content.
- Then formulation of the objectives as well as hypothesis of the study for which that we are going for the content analysis.
- Then definition of the universe. So which are the sources of information or the content that we are touching about for the purpose of analysis.
- Then out of this universe we need to take out a sample. So that needs to be defined.
- Then once the sample is taken, it has to be categorized as well as subcategorized based on the procedure.
- Then decide on the units of analysis.
- Then develop the perfect procedure of coding as well as the analysis.
- Then ultimately you need to come out with the inferences as well as interpretations of the analysis based on the processes that what we have already done.

The Research Question

So to begin with, the research question. This is what is the first step of the content analysis. So it is basically the selection of an appropriate problem. So from where the research question starts. So the selection of the research problem solely depends upon the type of research question that has sparked the mind of the researcher. So with what research questions that he is beginning with this. So then he starts working on that particular thing. The first and foremost step is to develop the research questions for the purpose of content analysis.

Identification of Sources

Then the second step as we have seen is the identification of the source.

- Some of the appropriate sources of the content analysis include,
- The farm broadcast programs of All India Radio. All India Radio is coming out with number of programs, specially related to agriculture and allied sciences over a period of time. So we can start that okay after 1950 what is the nature of program or after 1960. Decade wise we can make analysis, or the year wise we can make the analysis, or month wise we can make the analysis. So these are all quantifying techniques, but we can take it as a content.
- Then the farm telecast programs by the televisions. So number of programs are being broadcast by number of channels, maybe it is govt owned channel or private owned channel. So we can take them.
- Then the agricultural magazines coming out with large number of articles related to agriculture and allied sciences. That can

be identification of source.
- Then the newsletters, leaflets, pamphlets, bulletins.
- Films on agriculture
- Then nowadays after this ICT revolution in the post 1990's, we can analyze the contents that are available in large number of websites as well as webportals. As we have already said. 1.5 billion websites are already there. So it means huge amount of content that is available, which needs to be analyzed.
- Then the folk songs and the dramas used for dissemination of agricultural information, can be another source of identification for the purpose of content analysis.

Formulation of Objectives and Hypothesis

Then based on the selection of the content, so then you need to formulate the objective as well as the hypothesis. So it totally depends on the research question that you are going to ask. So then the possible number of objectives are to be formulated as well as the hypothesis needs to be worked out for the purpose of analysis. So based on the objectives you will be coming out with the hypothesis also.

Definition of the Universe

Then define the universe. So the universe of content or the population of the content analysis to be analyzed. So that has to be clearly defined. As I said, so whether we are analyzing the radio programs, which are being broadcasted in the last one year, in the last two years, in the last five years, ten years. Like that we need to establish perfect unit of time. So that we can make it as the universe. Or the newspapers which are carrying issues related to agriculture,

maybe newspapers of one month, or one year, or ten years. Like that we can define the universe.

Sampling of the Universe

Then sampling of this universe.

- After selecting the universe, now sampling has to be done in order to make the analysis of the content more comprehensive.
- So this depends on the nature of the objective as well as the universe. If you are selecting the newspaper, so then whether we are selecting only the news related to agriculture, or whether we are going to select the news related to development in general, wherein agriculture is one component. Like that we need to have the sample.
- Then in some cases the entire universe may have to be taken, just like the census method. So that depends on the objective. That depends on your objective.

Categorization

Then categorization of the universe,

- It is the division of content for the purpose of easy analysis.
- Then it indicates the variables of this analysis. Wherein we are coming out with the possible variables for the purpose of analysis.
- Then the formation of categories is achieved after going through the content material, which is same as that of the actual content analyzed. Because now we are coming out with the sample out of the universe. So then it needs to be classified.

- Then the categories must be exhaustive, so that it must represent the entire universe. Then they should not overlap. They should be free from ambiguity. And the major categories can be further categorized into sub categories. That depends on the issue that you are analyzing.

Units of Analysis

Then the units of analysis are to be defined.

- So when we are talking of the text, so it might be
  o The length of the sentence
  o It might be the difficult words that appear in a particular sentence. The number of difficult words that the sentence has.
  o Then the pictures as well as the tables that the particular content has in a particular article.
  o Then the newspaper, or the frequencies, the lines or pages. The time devoted or the space devoted for that particular topic etc are the units of analysis.
  o Then the kind of content. The articles, the interviews, the feature stories, the success stories etc etc. So we can go on justifying these units of analysis based on the objectives.

Coding and Analysis

Then now coming to the coding and analysis,

- Formulation of the suitable codes is very very essential based on units of analysis
- Then coding refers to working out of procedure, by which the units chosen for the analysis are quantified in an orderly way.
- Coding categories have many forms depending upon the unit– the number of occurrence of an item during a particular

period. For example if we talk of the environmental hazards, because of the agricultural operations. The use of plant protection chemicals. How many number of times this has occurred in a unit of time. Maybe in one year or in one decade. So number of times, so that's how we are coding them.

- Then working out suitable index – the readability index that needs to be developed. So now there are software applications for this. We can use the Gunning Fog index. And as well as there are a number of other indexes that are available. Just you can select the content and put it in this App so that you will get the readability index of that particular thing. So that is another way of coding your content.

Coding Sheet

So here is a model of the coding sheet,

1. wherein it begins with the date when you are starting with this analysis.
2. The nature of news whether it is hard or soft or the environment, the agriculture, various issues, that is based on your objective.
3. Then the mode of presentation, whether it includes the pictures or various other aspects or not. What is the headline?
4. So the space divided for the headline,
5. the number of words that we find in a headline,
6. the length of the text
   Because these are the indicators, the publishers are giving weightage to these issues. So whether they
   are giving due weightage or not, so that can be interpreted from these things.
7. Then the number of words in each text.
8. Page that the news is appearing
9. And the position of the news, in a page maybe it is the front

page or the upper part or lower part or 2nd page, 3rd page. The importance of news that we can analyze.

10. Then what is the source of news whether it is quoted or not.
11. Then what is the readability index—as I said the Gunning Fog index that we will be using and based on that whether the content is readable or it is suitable to the general public or not whether it is highly qualified people can only read it. The graduates and above or the postgraduates and above. Or the people who are primary educated, whether it is suitable for them or not, or high school educated, whether it is suitable for them or not. So all this interpretations that we can derive out of this readability.
12. Then what are the total number of pages.

So this is only an indicative list. So you can have the units of analysis based on your objectives as well as the hypothesis that you have.

Inferences and Interpretations

Then coming to, based on this data, so now it needs to be analyzed. So then the inferences are to be drawn as well as interpretations are to be drawn. The data obtained through such coding procedure, now it needs to be analyzed. And based on the results we can interpret the data that whether this particular newspaper or broadcasting channel or radio channel is providing importance to such news, or it is providing such amount of space, then it is giving due weightage to this, whether it should have considered these aspects. Like that we can go on interpreting the things.

Conclusion

- To conclude we can say that content analysis is an instrument to develop the quality content over a period of time. The moment we understand the concept of content analysis, automatically we can develop the best possible content for our

end-users.

- Then evaluation of the existing content and improving the content based on the outcomes of evaluation is an opportunity that the service providers are having.
- Then provide need based content to various stakeholders is another interpretation that we can make out of this discussion.

And with this we will be coming to an end of the discussion on content analysis. In the next discussion we will be talking of the social media. And how we can make the best use of social media for the purpose of delivering extension services.

Thank You.

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PDF: Content analysis

4-4 Means of achieving e-Extension – Social Media

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Transcript

Hello Friends. In our previous discussion we talked about the concept of content analysis, and the procedure involved in content analysis. In this discussion we will be taking up the concept of Social Media as a means of extension advisory services. So the social media is an outcome of Web 2 applications.

Web 2.0 means

What does this Web 2.0 means? Web 2.0 means the website's internet applications which empower people to share information and work together. The basic feature is, it allows two way interaction. So that is why the connotation of 2.0 is attached with this. So usability and accessibility are the key of Web 2.0. It means, there is no one way interaction but the interaction is two way. So that is what is facilitating the process of social media. And that is how people are coming on the common platform and interacting and exchanging their ideas, facts, feelings, so that both can establish

a common understanding. So this is what is the basic application of Web 2.0

Basic Components of Social Media

Then coming to the basic components of this social media. There are three important components.

1. Number one we need to have the content for the social media. It maybe related to entertainment. It maybe related to education. It maybe related to production, processing, marketing etc. but there should be a content.
2. Then it should be exchanged in a two way process wherein the Web 2.0 applications are facilitating this process
3. And there is a target group which we call it as the communities.

So these three units make this component of the social media. Social media provides the platform for interaction of people and content creation, exchange and commenting in virtual communities and networks. So this is what is basically the social media means.

What is Social Media

So what exactly is this social media. Social media is a collection of online communication channels dedicated to community based input interaction, content sharing and collaboration. So it means there is a group of people who are interacting on a group basis over a cyber space. Websites and applications dedicated to forums, microblogging, social networking and social bookmarking, social

curation and wikis are some of the different types of social media that are available.

Social media is a general term used for any interactive digital technology. Apart from the things, what we have already said. So there are various other applications like the Facebook, Twitter, YouTube, Blogs etc., which comes under the definition of social media.

Need of Social Media

Then coming to, what is the need of this social media.

- So basically to exploit the strengths for agricultural growth is one of the need for social media in case of agriculture and allied sciences.
- So it acts as a knowledge resource also, because content creation is there.
- Then it provides the better information access to the people, because basically it believes in groups, formation of groups and delivery of information and exchange of information in groups.
- Then the technical manpower is very much essential for this particular management of these groups.
- Then it is very cost effective.
- It develops the knowledge.
- It empowers the people, because it is providing the information.
- It provides service to the stakeholders.
- And it establishes the strong linkages.

So these are the basic purposes for which we need the social media. So we need a social media platform, because when we talk of social media. The first and foremost thing that comes to our mind is only

the Facebook or the Twitter type of things. But there are various other platforms of social media also.

Platforms of Social Media

Let us have a look at them one by one.

- Number one is the social networking sites like Facebook, LinkedIn, Myspace etc. You are all familiar with this.
- Now coming to the video as well as the photo sharing websites like maybe Flickr or YouTube. So they are also social media platforms, wherein huge number of people are coming and getting lot of information and exchanging the contents.
- Then the blogs are also the platforms of social media. We have already discussed at length about the blogs as well as the micro-blogs.
- For example Twitter. Twitter is the most popular microblogging site that we can say. So that acts as your personal website, wherein you can share lot of contents over that and people are using it.
- Then there are various Forums, Discussion boards or the groups, like the Google groups are there, the Yahoo groups are there. So they are all again the social media platforms.
- Then wikis. Which is the most popular application is the Wikipedia, wherein huge number of people are adding contents, which is valid in nature, which is being edited and which is acting as the source of information and source of clarification for many of the people or the applications.
- Then the video on demand as well as podcasts are another platform of social media.
- Then video conferences and web conferences are another platforms of social media.
- email and instant messaging is also going on.

- Then socially integrated mobile text messaging applications like the WhatsApp as well as WeChat. Number of such applications are coming up.
- Then websites with a social plugins as well as layers are another examples of platforms of social media.

Social Media Statistics – India

Then the statistics related to the social media.

- The internet penetration in India is about 627 million people are using Internet in India as on date. This is what is the latest information. So when we look into the most popular social media platforms in Indian context out of what this 627 million people are using.
  o The first and foremost thing that comes to social media is the Facebook. About 91% people are using this Facebook
  o Then Google Plus is being used by 61% of this 627 million.
  o 43% are using Twitter
  o And LinkedIn is being used by 24% of the people.

So this shows the penetration of social media into the communities. How popular they are and how people are associated with them. Even though initially we are using it for the purpose of only the exchange of information or the entertainment purpose, but over a period of time there is a potential of making use of these platforms for the purpose of exchange of the quality information, the productive information related to science, technology, development etc etc.

Why Social Media in Agricultural Extension?

Why social media in agricultural extension? Because the nature of agricultural extension services are different from other platforms like entertainment media. Why and how we can make use of these social media platforms, specially for the purpose of agricultural extension.

- It is easier access to the electronic gadgets and the Internet facilities including the rural population. We have already observed the statistics in previous discussions, that almost equal number of people in urban as well as rural area are having access to the Internet as well as the modern information communication technology tools and techniques. So that is how the social media has a huge potential specially for providing the extension services.
- For delivering information to the target communities at anytime, anyplace. And from any place, to any place, from any place. At any point of time we can provide the extension services or the information services to the farmer. So these are the beauties associated with the social media.

Examples of Use of Social Media in Agriculture

So there are some examples of social media. For example, how the Facebook page is being created and used for the purpose of the animal husbandry farmers, Indian Cow-breeders Club. So any farmer who is maintaining these Indian cows, can be part of this system and he can get the information. This is the Twitter handle created by the Union Minister of Agriculture(Govt of India). So to provide the information, so that microblogging is also being acted as the social media platform. Even the govt sources.

Then the YouTube channels are there, wherein you can get huge

amount of information. Agriculture technology channel, number of such channels that are available for the purpose of sharing of information. Then as a resource person you can also create such channels. Then there are the pages of various agricultural universities. Then research institutions, so on and so forth.

Challenges Before Social Media

Then coming to the challenges before the social media.

- The institutional awareness about the social media as potential is one of the important challenge. The institutions should recognize the potential of the social media, so that they can make use of the potential of social media as an instrument for delivering extension services.
- Then encouraging the stakeholders to access the social media links. So the figures what we have seen, so they are all for using the social media for the purpose of entertainment. But whether they are making use of this for educational purpose, for getting extension service purpose. That is what is the challenge before the professionals.
- Then the skilled human resource to maintain the social media interactions. So we need the people who are in between. So who can manage these platforms, so wherein the skills are essential, that is another challenge.
- Internet and information technology infrastructure is another issue. So that needs to be maintained and that needs to be promoted.
- Then satisfying the heterogenous users is another challenge for the professionals. Because as we have number of people on these platforms, their demands are also diverse in nature. So whether we are able to cater to all the needs. So that's what is an issue.

- Then measuring impact is another challenge. So because of the social media, what are the changes that occurred into the technological scenario or the adoption scenario, that is another issue.
- Then continuous engagement of the population is one of the challenge that we observed

Opportunities for Social Media in Extension Services

Then opportunities for social media in extension services

- Formation of the global/national interest groups is possible. So right now we are thinking of formation of the groups at the local and regional level. But that can be extended to national as well as global level.
- Then can act as a catalyst for resource mobilization. That resource maybe technology. That resource maybe organization. That resource maybe the finance.
- Then integration of wide range of stakeholders. All the stakeholders can come on a common platform. Maybe it is the technology users, technology providers, the input suppliers, the processors, the marketers. All the stakeholders can come on a common platform. So that's what is the opportunity.
- Then reaching one to many. One institution is there but it has an access to each and every individual.

Conclusion

To conclude we can say that

- There is a need to create awareness among the extension professionals and build the capacities to share more information on the social media platforms.
- Institutionalizing the use of social media for sustained momentum and for better sharing as well as networking for the purpose of delivering extension services.
- Then encouraging self-publication and collective collaboration, so that each and every professional can add the content on his own and he can develop the content for the social media.
- Extension organizations need to encourage the stakeholders to use the social media for interaction and obtaining the feedback.
- And research on social media is one of the important issue that needs to be taken care of in the days to come.

With this we are coming to the end of the discussion on the concepts of social media, and how it can be an instrument for disseminating the technologies and getting the feedback from the communities. In the next interaction we will be discussing about a unique experiment that is popularly known as Tarahaat.com

Thank You.

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PDF: Social media as means of extension advisory services

4-5 Means of achieving e-Extension – Tarahaat

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Transcript

Introduction

Hello Friends. In our previous discussion we talked about the concept of social media and how the potentials of social media can be harnessed for the purpose of delivering extension services. In this discussion we will be taking up the issue of Tarahaat.com, which is an unique experiment started by the organization known as the Development Alternatives in the year 1983. The Development Alternative is basically a non-profit, research, development and action organization. We can say that it is a Nongovernmental Organization, which started this Tarahaat.com.

Basically Tarahaat created an e-Business platform to bring the benefits to the rural population. The target group is the rural areas and the farmers. How can we provide them the electronically mediated marketing platforms was the basic concept. The business model combines the mother portal, which was created as a Tarahaat.com with a network of franchised villages with the

Internet centers or the TARA kendras. The main center was attached with the village centers, so that they can get the centralized information at a single point of time.

Then Tarahaat delivers basically the education, information services, then online marketing opportunities to the rural consumers. So this is where the areas on which the TaraHaat group is working. Then the first ICT based solution delivering high quality affordable and relevant products and services to the people on a sustainable basis, that we can say. This is first ever ICT based experiment, specially for the rural population.

So if you look into the organizational framework. The organization which is at the top, that is the Development Alternatives. Research & Development group is there. So it has different divisions,

1. People First – advocacy
2. Then, Dialnet – online information services
3. Then, the local environment quality services
4. And, TARA—commercialization, wherein the TaraHaat is one of the component.

So the TARA commercialization includes 4 programs,

1. The first one is the DESI Power—rural power generation systems
2. Then, TBRT— that is the franchisee technology driven micro-enterprises, promoting the concept of entrepreneurship amongst the rural population.
3. Then, TARA Nirman Kendra for construction purposes,
4. And, TaraHaat for the purpose of farmers.

The Development Alternative (DA) and its associate organizations are working in different parts of the country as it is shown. It is the States like Punjab, Uttarakhand, and Haryana, Delhi, Uttar Pradesh, Bihar, Jharkhand; like that it is working in the Central as well as the Northern parts of the country, with the associate organizations like,

1. The Technology Action for Rural Advancement. This is what is the full form of TARA.
2. Then, TARAhaat Information & Marketing Services Ltd – specially for the purpose of farmers.
3. Then, TARA Nirman Kendra and Decentralized Energy Systems India Ltd and,
4. TARA Environmental Products & Services Pvt Ltd.

So these are the associate organizations of TARA.

Sponsors

The sponsors of this organization are the Government of India as well as some foreign donors are also there from Switzerland, Canada, United States, Norway, Sweden. There are a number of sponsors are there.

The partners of this Tarahaat includes the Microsoft as well as the Microsoft partnered with this Tarahaat to bridge the IT gap. Because as a development organization they were lacking the technological support. Microsoft filled in that particular gap.

As a part of the Microsoft corporate social responsibility(CSR) they started the empowerment of the people with information technology skills, aimed at providing high quality learning through community technology and learning centers (CTLC). So Microsoft created these learning centers. Then Tarahaat provided the local support for them.

Goals and Objectives

The goals and objectives of this organization include,
1. Will pursue a mix of business as well as the social objectives. So

business for the purpose of providing maximum benefits for the rural people. And the social cause, because they are interested in uplifting the rural communities.

2. The Development Alternative group is firmly committed to the nation that "development has to be a good business". The moment we take development from the point of business, so obviously there are many things that are going to happen.

3. So they are also providing agri-advisory services.

A farmer with the help of volunteer calls up to a telephone number mentioned here and puts up a query, that is recorded and the appropriate solution is given to them. So this is how the Tarahaat works.

Products & Services

The Products and services offered by this Tarahaat includes

1. the government services,
2. the farmer's issues
3. the water and women related issues.
4. Youth and learning
5. Chaupal
6. Literacy.

There are number of issues that it is working on. Our focus is on this agri-advisory system.

Business Objectives

The business objectives of this Tarahaat includes. It intends to be the leading supplier of online information, way back in the earlier

days. Then the services and the market opportunities for the rural people, as well as the computer enabled education by establishing a network of online outposts in the rural market and providing the needed services are some of the business objectives of this.

Social Objectives

The social objectives include the women's health, education, good governance. Then the resource conservation by providing relevant and easily accessible information through its website.

Objectives

Then coming to the objectives of this Tarahaat.

- So sustainable development
- And, sustainable business.

So we can visualize sustainable development only when we have sustainable business also.

The Strategy

The strategy adopted for them is,

- To evolve commercially viable ICT-based enterprises
- Then, to deliver public benefits by satisfying the private needs.

So until and unless the farmer or any individual satisfies his private needs, he cannot deliver any public good or the public benefit. So that's what is the philosophy with which they are working.

Vision

The vision with which Tarahaat is working is

Is to empower the people to achieve their aspirations by using information-communication technologies.

So now coming to some success stories of the Tarahaat.com. Because they are providing the marketing related information, marketing opportunities, online business as well as trading opportunities for the farmers. So when they started working with these people. A resident of Niwari block of Tikamgarh, which is in the State of Madhya Pradesh, **Sheila Shrivastava**. So she has achieved what for other girls it might be dreams today. The life of Shaila changed because she came into contact with Tarahaat.com, with the centers what they opened for the basic information technology course, they opened in that particular village. And she became a part of that. And being a quick learner, with her own learning abilities, she started acquiring good number of things. And looking into her leadership as well as acumen and learning ability, Tarahaat offered her the position of Instructor in this Tarahaat efforts, and she was also selected for the challenging job of soochak. Because now she should train the people. So that's what was the responsibility that was given to them. So that was the Tarahaat's e-governance project in the Tikamgarh district. So this is how she had accepted that particular challenge.

The Parmar sisters **Pinky, Rajmani** and **Priti**. So these were the three sisters, so they never imagined that they are going to be part of one of the leading business world magazine. And they never imagined that their photo will be printed on this particular magazine, which is the global magazine that we can say. It is because of the efforts of these institutions and their capacity building processes, and they acquired these skills and they became a part of these things. **Pinky**, actually she had these leadership abilities and she is basically a social worker. She spearheaded this Swajal project of World Bank, aimed at providing safe drinking water in the

Bundelkhand region of Uttar Pradesh. It is one of the poorest areas of the country.

When she started organizing the people with the help of these Tarahaat.com efforts. So she became the leader. She inspired her sister **Rajamani** to open Tara Kendra in those villages, and she is gifted with these entrepreneurial skills and **Rajmani** now handles the administrative functions of Tara Kendra in those areas, with a basic IT course they are also teaching, as well as empowering the other women in the region.

The youngest sister **Priti** was apprehensive in the beginning, but she also joined her sisters in these development initiatives. So this is how the women empowerment is also being achieved. And they are providing them the leadership skills, entrepreneurial skills, so that they can stand on their own and they can motivate the entire community as well as society to be part of this development initiatives.

Conclusion

To conclude we can say that

- the Tarahaat.com is a platform for ensuring development, which is working not only in the State of Uttar Pradesh, but in the adjoining States. The Northern as well as the Eastern parts of the country.
- The NGO's are also partners of development in addition to the government efforts, because equally they are also rendering their services in the development initiatives.
- Then a planned intervention with participation can change the situation. And Tarahaat.com is one of the best examples that we can quote.
- Then electronic mediation is the means of achieving these ends.

So this is what we can learn from the outcomes of the Tarahaat.com. With this we will be concluding today's discussion.

Thank You.

Download

PDF: TAARA Haat

5-1 Practical application of e-Extension – Digital Green

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Transcript

Brief Synopsis

Hello Friends. By now we have completed 4 weeks of the course on e-Extension. So you have already completed 2 quizzes. I am sure you are enjoying this course. And I once again request you all to be part of the Forum activities. If you have any difficulty in understanding any of the concepts, that we have discussed so far. Kindly bring it to our notice through Forum activities by posting your views, and at the same time if you have any new experiences or the new experiments that what we did not cover, or some interesting success stories or the case studies, if you have, you can also share it so that, that can be brought to the notice of the entire community, which is undergoing this course. It is for the benefit of the group.

And as you have seen in the last week we were talking of the means to achieve e-Extension, wherein BYOD was one of the means (Bring Your Own Device), so then we talked about Blog, Content Analysis, then Social Media as a means for delivering extension

services, and Tarahaat.com. So these were some of the means through which we can achieve the e-Extension, that what we discussed previously. In this week we will be focusing on some of the practical applications of e-Extension approaches.

Introduction

So one such experiment is the 'Digital Green' that we will be elaborating now. Coming to the Digital Green,

- Which is an innovative digital platform for community engagement. So how the community can be engaged in the process of dissemination of the messages, in the process of dissemination of innovations. This is one issue. The other issue is. Is it that the community also has innovations to share. And the people of the community or the members of the community can also act as resource persons, so that's another question that Digital Green is going to give us the answer. So generally we perceive that the people who are working under the research system are responsible for generation of knowledge and dissemination of knowledge. But under many circumstances the experienced farmers can also act as resource persons.
  The advantage with these experienced farmers as well as the progressive farmers is, so the command over the practices; the agricultural practices. And at the same time they can deliver these messages in their regional languages. Not only in regional languages, in their regional dialects. So how to make them resource person is the basic issue of this Digital Green. So that is why we said that providing innovative digital platform for community engagement.
- So this project was conceived as a Microsoft Research India's technology for emerging markets, basically in 2006 by Mr Rikin

Gandhi. Looking into the potentials and the services that we can provide to the society with this methodology,

- Rikin Gandhi in the year 2008 thought "let us make it an independent non-governmental organization". That is the Digital Green
- So just to make it popular among the people, involvement of the community. He developed 2 games, that is Wonder Village and Farmer Book for giving them the information and for attracting them, so that they can be a part of this particular activity.

So the **Vision** of Digital Green includes, to create a world where all individuals live a life of dignity. It is not that somebody else is coming over to you and he is trying to provide you dignity. But it is with your own involvement you can lead a dignified life. So that is what is the process that is being facilitated by the Digital Green.

The **Mission** is to integrate innovative technology because all the time they are talking of technology. So that is a means to achieve, What is that? The global development effort to improve the human wellbeing. So technology is a means, but the end goal is to achieve the well-being of the human-beings.

The **Value Systems** that the Digital Green has adopted includes the humility, excellence, accountability, empathy and integrity. And how these things are being practiced. So that we will be looking into their experiences.

Approach

The approach adopted by Digital Green includes,

1. The participatory process for video production on improved livelihood practices. There are number of practices that the farmer is taking up. And when we look into the agricultural

operations, since generations they are following these things but the only thing that is essential is how can we make minor modifications in these practices. And how can we communicate these practices to the fellow farmers or the community at large. So that is what is, where the participation of the end-users are very very essential and Digital Green is ensuring that.

2. Then coming to the second issue, that is the human mediated learning model for video dissemination and training. Because the experiments on video production are not new. In the late 1970's and early 1980's the organization known as SEWA(Self Employed Women's Association), they also documented number of videos, and they disseminated this information among the different parts of the country, through their volunteers and through their organizations. So the process of video production during those period was totally different. And the process of video production under Digital Green is with modern technology with electronic mediation and we can disseminate these messages in a very easy manner.

3. Then hardware and software technology platform for data management. So in those days the videos produced were stored in the form of video disk or the hard disk. But here digitally you can manage all these things and you can bring in lot of modifications into these technologies at regular intervals.

4. An iterative model to progressively address the needs and interests of the community, with analytical tools. Because the preferences, the choices, the needs of the people are changing at regular intervals, and accordingly so the Digital Green can take care of those things and satisfy the needs of the society

The basic data management software has the feature of Connect-online as well as Connect- offline

So this is what is the unique feature that is adopted under Digital

Green. So the details that will be looking into the further discussions.

Comparison

If we compare the efforts of Digital Green with those of traditional extension service providing mechanisms. So the cost in case of Digital Green is 10 times lesser than the traditional mechanism of delivery of extension services. And if we compare the adoption of innovations with the help of this Digital Green efforts, is 7 times more than the traditional extension efforts. So this is what is the drastic change that the electronic mediation has brought into the paradigm of technology transfer. So that is where we feel the potential of the technologies, specially in case of information dissemination and information dissemination itself is known as the development dissemination.

Investors

So who are all the investors of this Digital Green efforts.

1. It begins with government organizations like the Ministry of Rural Development, which is directly a part of this
2. Then Bill-Melinda Gates foundation, which is an international body
3. Similarly USAID.
4. DFID
5. Then international research organization (ICRISAT)
6. Then the technology giants like Cisco, Google, Oracle

So all these public, private as well as government institutions are part of this particular system.

Partners

If you look into the partners of this Digital Green effort, so there is a wide range of institutions that we come across. So it involves as a partner, so there are government institutions, government supported institutions, non-governmental organizations, research and development organizations. Number of institutions are coming

together. What is the need for involvement of these number of people in the Digital Green effort? The first and foremost reason is.

   So the videos produced under the Digital Green concepts are by the grass roots people. So if you want to reach these grass roots people, we need the support of non-governmental organizations. We need the support of technical research institutions and to some extent government institutions support is also needed. So that is how the concept of Digital Green is taking the help of all these institutions for making, their ideas a reality.

Role of Digital Green

So if we look into the role of Digital Green. So basically the role is to

- Promote the agricultural growth by providing development messages. By providing innovative messages.
- Then promoting nutritional securities among the rural people. So they have the resources. But how to make use of those resources. And how to get the benefit of those resources. So that's what is the essential issue. So the Digital Green by production of videos is disseminating such information.
- Then integrating technology for quality training. So the training earlier were only in the traditional mode. But with these production of videos, the level of training is being improved as well as people are developing the skills.
- Then increasing income through the improved market access. So a marketing App has been developed under this concept and how the farmers are getting the benefits of this. So that we will be looking into, in the subsequent slides.
- Then bringing together urban as well as rural communities in India with the help of the technology. So buyers and sellers are on the same platform. The sellers are none other than the primary producers. They can get the benefits of all the

marketing intermediaries and the marketing channels, because they are into the direct selling efforts.

- Then using multi-media channels to reach more and more farmers. So the base of this or the effort is being widened with the help of the technology.

Then coming to the concept of CoCo as I have already discussed. It is data workhorse, which connects online as well as offline. So whether the receiver is having the network connectivity or not, the internet connectivity or not, but the contents of this effort are readily available for the farmers. And that is what is the mechanism that CoCo provides.

It is an analytic dashboard which allows the user to collect and visualize the crucial insights at anytime, anywhere on any device. So this process facilitates the receiver, motivates the receiver to go for accessing the contents on Digital Green platform. So if you look into the achievements so far, the Digital Green has

- Has produced more than 5000 videos in 50 languages. So these figures are itself an indicator, to what extent that this organization is working. Because development of videos in the regional languages, in regional dialects is an uphill task. And making use of the grassroots people as a resource person; that is another thing wherein huge amount of capacity building efforts are needed. So this is how the team of Digital Green is working.
- Basically the videos are screened offline as well as online by ensuring the wisdom captured continues to improve the livelihoods of the farmers and their communities. So with this purpose the videos are being screened among the communities.

Capacity Building. Then coming to the capacity building of the frontline workers. They are being trained, so that they can be a part of this over a period of time, and they can enhance their skills

with the efforts of Digital Green. If you look into the reach of the Digital Green, not only nationally, but in some other countries also. In Ethiopia alone so they have reached around more than 2.5 lakh farmers. And the practices that they covered so far includes 85,721. In Indian context more than 4.5 lakh farmers are part of this particular system, wherein they are focusing on 1,85,988 practices, wherein they are involved with.

- So **Loop app** is the facility wherein the farmers can directly enter into the process of marketing. He can become a trader, that too directly through the users of those products. This particular app facilitates the farmer to sell their produce as quickly as possible for the best possible price, because the buyer is a direct consumer and the seller is the primary producer. So they can negotiate the price and they can fix the price. And both are in a win-win situation, because both are the beneficiaries, there are no intermediary channels in between. And it is not taking the additional time of the farmer. Being part of this production system, the farmer can make use of this app. That is the Loop app.

And using this app so far the farmers have sold, 4,700 tons of vegetables; which is if you look into that particular thing in financial terms. It is coming to 750 thousand U.S dollars. So this is what is the amount the primary producers are realizing. So this is what is the important contribution of Digital Green efforts, that we can say.

Conclusion

To conclude, I would like to quote again Rikin Gandhi who said that ". A journey of a 1000 miles begins with a single step". And Digital Green has already taken that step. And it is amassing the people, it is taking the people into that particular journey. So those millions

of people are targeting to cover millions of miles. So that we can achieve the end goal of enhancing our living standards and better living. With this we are coming to the end of this discussion on the Digital Green. And in the next interaction we will be talking on the concept of MOOCs. You are already part of this MOOCs, but how the MOOCs can be utilized for the purpose of education as well as for the purpose of extension services. So the details that we will be discussing in the next interaction.

Thank You.

Download

PDF: Digital Green

5-2 Practical application of e-Extension – MOOCs for Agriculture

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Transcript

Hello Friends. I am sure you are being motivated by the experiments of Digital Green, that we discussed in our previous class. How a grassroots professional or the farmer can also be a development messenger. In this discussion we will be taking up the concept of MOOC, specially for agriculture. Agriculture is one of the important sector in the Indian economy. As on date about 18% revenue that is being generated with the agricultural operations. Agriculture is contributing to the extent of 18% to the Indian gross domestic product. So we can realize the importance of agriculture. And it is supporting more than 50% of the population.

Introduction

- And because of that, it demands attention in terms of human resource development as well as capacity building. Traditionally people are trained in agriculture. But technologically they need to be trained and their capacity are

to be built, so wherein the human resource development activities are very very essential. But the existing, the traditional education system as well as the capacity building system. Are they sufficient to train this huge amount of population? So that's what is the question mark. And that is where the concept of MOOCs is coming in.

- So the concept of MOOC **can satisfy this particular need** of the society by giving appropriate information to the huge amount of population.
- Basically it is an online platform that provides free access to numerous high quality basic as well as the advanced courses in that particular domain. So it is an educational platform, it is a learning platform for all. So number of people can be part of this particular system.
- And generally the courses are being offered by the renowned faculty from the premier institutions of the country.

MOOCs Means

The term MOOC is an acronym. The elements involved are.

- The first element is the **massiveness**. So why we call it as a massive, because it allows access to large number of learners. In the traditional education system we have limitations like, in a particular class we cannot have admissions maybe, 50, 100, 250, 200; Whatever it is, the numbers are fixed by the competent authorities. So we cannot think of beyond that. But in case of MOOCs we can have number of people. It maybe in few thousands or few millions, so it may go beyond that also.
- Then **openness.** What is that openness? So in a formal education we have number of restrictions, that these are the age limits and these are the prerequisites to offer this particular course or to be part of this particular educational mechanism. So but here there are no restrictions. So that is how it is open. There are no restrictions as well as there are no prerequisites.

- The third element is **online.** Because we are serving huge number of people across the geographical area. So online digital platforms are the only way wherein, we can reach these many number of people
- Then basically it is a course. It has its own syllabus, it has its own educational content and it has its own methodology to deliver. And they conduct the test and ultimately certificates are also being issued. So that is why we call it as a course.

Put together it becomes a **M**assive **O**pen **O**nline **C**ourse. That is MOOCs.

Agricultural Education in India

Now coming to the Agricultural education in India. Agricultural education in India is being imparted with the help of 75 State Agricultural Universities, 4 Central Universities with the faculty of agriculture. Some colleges which are affiliated to the traditional universities. And number of private institutions which are affiliated to different State universities. So this is what is the educational infrastructure that we have in case of agricultural education. They are admitting the students based on their own criteria. Somebody is having the National level entrance test. Somebody is having the State level entrance test. So like that the student's are being admitted.

1. But the basic issue is whether all these students are having an access to the quality learning material. Number one
2. Whether the University has the competent professionals for each and every topics that are covered as a part of the syllabus of agriculture. These are some of the issues that MOOCs is looking into, so that how can we overcome these lacunae. Because there are a number of colleges wherein the number of

faculty members itself is very less. Even though there are sanctioned posts, but the posts are vacant.

And even though the field posts are there, the expertise or the specialization as well as superspecialization of that particular faculty member is not matching with the course. Number of such issues are there with each and every educational institutions. But how to overcome these things. Basically we can say that the paucity of the faculty members in the State Agricultural Universities or in general, the agricultural education system. How can we overcome them? So the best alternative that we can think of is, development of MOOCs.

- So there are certain e-mediated efforts in case of agricultural education. Just to quote some of them.
  - The concept of e-PG Pathshala, launched by the University Grants Commission. So the number of lectures that were video recorded and they are put on this particular platform with the help of Inflibnet, and so they are accessible to all. Topics are available in Pdf format. Any student, any learner can download them. The video lectures are also available. But they are not offering a particular course in the form of MOOCs. But the video lectures are available, the Ppt's are available, the Pdf format in the form of notes are available.
  - Then coming to the agMOOCs platform. Which is one of the important platform in providing the MOOCs for the students of agriculture. So far 14 courses have already been developed by registering, about 2 lakh students have already been benefited out of these 14 courses. So still the efforts are continuing to offer the latest developments in the courses as well as according to the syllabus of students of agriculture and allied sciences.
  - Swayam is another platform which is again managed by University Grants Commission, so wherein the people are

educating themselves with the help of this Swayam. Now the Swayam is also becoming mandatory for the students and they are also offering the courses as a part of your syllabus. So universities are slowly entering into those mode. So that student maybe belonging to arts stream, science, or law, management etc etc faculties. So they can offer the courses online. And they can get the benefits of that.

- The National Platform for Technology Enhanced Learning is focusing on the engineering education in India. And they have also developed a number of courses. The entire undergraduate as well as the syllabus has been covered with this NPTEL courses.
- Some efforts are also being made through this National Institute for Agricultural Extension Management. They are also offering courses on the teaching skills and the communication skills. Then the NAARM has also offered some courses for the benefit of faculty members as well as students.

So these are some of the efforts that are being made in Indian context. And with some efforts in case of agriculture sector. Basically so now I will be discussing the outcomes of the study, that we made specially on the agMOOCs, the courses offered under agMOOCs.

   The objective of that study was to assess the learner's perception and feedback about the courses offered on agMOOCs platform. So before we exactly enter into the study, Let us look into the features of this agMOOCs platform,

Attributes of agMOOCs Platform

- So which is agMOOC is a user friendly format.

- The registration process is very very simple. You need not fill into huge forms with lot of formalities. It is very simple. In a couple of seconds you can complete that.
- And it has an access to all the courses offered. Once you register. Maybe you are registering for a particular course. But you can access all the courses that are on that particular platform.
  The contents are available in audio, video as well as the Pdf formats and agMOOCs app has made the accessing the course of agMOOCs platform very very simple. So it is an excellent example for m-Learning also. Which we discussed in one of our previous discussions. So wherein just by using this app you can have access to all the courses.
- Then there is a mechanism of monitoring of attendance. So as a learner your attendance is also being monitored on this particular platform. If your attendance is less than 80%. So even though you complete the examination successfully. You will not be offered certificate because of your lack of attendance. So that kind of systematic monitoring mechanism is there.
- Then offline availability of the course contents is another feature, which helps students who are facing some issues with the connectivity.
- Then there are number of announcements that are being announced by the administrators at regular intervals, they are always available on the announcements section.
- Then static as well as the dynamic resources are also there. The static resources as I have already said, the PPT's are available, videos are available. As well as the dynamic resources are also available. Maybe the weblinks and you can move from this link to that various other platforms also.
- Then forums are there to put your views and get answers to the doubts. Students can always ask the question. The number of questions that we are facing for MOOCs that are being offered. And those things are being addressed by the

concerned course instructors.

- The Hangouts for chat with the fellow learner. So this provides an excellent opportunity for every learner to have their own community, to establish new friendships and new circles on their own.

So these are some of the features of this agMOOC.

Methodology

The methodology used for this study was,

- Of the 14 courses that were offered, 2 courses were offered from 20th Feb to 31st March, 2018. Which has observed the registration of 4884 learners across the country.
- So each and every student registered was given an opportunity to provide the feedback. So of the 1098 active registered learners. So I said active registered learners, it means whose attendance was being monitored, who were having more than 80% attendance. So that is the number that I am counting here. Out of which 952 learners have given the feedback, which amounts to around 87% of the learners have given their feedback. So that is what just I am trying to put before you.

Result and Feedback

The first effort to have the crosstab of age and gender participation in agMOOC courses. Because this was one of the curiosity that the team was having. So whether is the gender limiting factor. Or the age a limiting factor. So looking into the results, so we can say that, there is no restriction on gender as well as age, because we can find the participation of each and every age group. Starting from 17 years to more than 65 years of people who were participating in this particular course. And gender was not an issue again.

And when we ask the learners to provide the reasons for participating in the course. So 66% of them said that to increase their knowledge base as well as awareness. Because right now they

have number of sources of information in addition to their formal education systems. Of which more than 66% selected the agMOOCs platform, because they have that inquisitiveness, as well as they want to learn more about this particular concept, as well as they want to be part of this system. So this is what is the outcome that we get.

Then 18% of the respondents said that they are part of this course because of their professional development. And if you look into the device with which they accessed the MOOCs courses is, so a majority of them used the mobile app. So which is another welcome step. We say that m-learning provides connectivity anytime anywhere based on your time of convenience. Majority were using the app and the beneficiaries of that.

Then so if we look into the distribution of learners based on the perception of easiness of using the agMOOC app. You can say that 79-80% of the respondents, so were of the opinion that it is very easy. So of which more than 55% said that it is very easy and 29% also agreed to this particular view. So if you look into their association, there is no association between the gender and the perception of learners regarding the easiness of agMOOCs platform, it means so male as well as the female participants did not have any difference in the perception of, in use of this agMOOCs app.

So when you look into the distribution of learner based on the gained knowledge on agMOOCs platform. So majority of them said that they are sharing the contents as well as the outcomes of this course with their friends. And the next category was they shared it with their fellow students in their class. So that becomes a motivating factor for taking up the further courses. So this is how we can see the participation of the learners.

So if you look into the distribution of learners based on perception regarding the pace of content delivery by the course instructors. The pace was according to the need of the learner. So this is what was the opinion of 513 out of 900+ learners. And about 210 respondents said that it was very comfortable with them; it was most comfortable with them. So it means that the majority of the

learners perceived that the pace of content delivery is as per their needs. Then looking into the examinations that are being conducted on this particular platform. Whether they feel it as a relevant or not, because many times we observe that students are scared of examinations, but when under online platforms, online educational efforts. So what is their perception regarding the examinations. So majority of them said that either most relevant or relevant, and only few remained neutral, and very few said, negligible learners said that it is not relevant, because they wanted to have that freedom, because they wanted only to gain the knowledge.

Conclusion

To conclude, so we can say that

- gender and age neutral technology, that's what is the electronic mediation. With the ease of use, has the higher penetration rate in the society, so this is what we can observe with the penetration of MOOCs, and the concept of MOOCs, specially in the case of educational sector.
- The findings are encouraging specially for the instructors. Because the learners have shown their positive attitude towards the concept of learning the new platforms of learning.
- Then it is an excellent opportunity to reach the unreached. So specially the students who are in the remote areas. Specially the colleges and the universities where there is a paucity of faculty members. Under such circumstances this is one of the excellent opportunity.
- Then ultimately we can say that providing such platforms is to internet communities and motivate the population to harness the benefits of this particular concepts is one of the opportunity that the entire community has. So they can make use of the existing platforms. And also they can create new

platforms under the concept of MOOC.

With this we will be coming to the end of this discussion on MOOCs for Agriculture. And in the next discussion, we will be talking of open educational resources.

Thank You.

Download

PDF: MOOCs for agriculture

5-3 Practical application of e-Extension – Open Educational Resources (OER)

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Brief Synopsis

Hello Friends. In our last discussion we came to know about the concept of MOOC, and the perception of the learners regarding the agMOOCs as well as the issues associated with that. In this discussion we will be talking of Open Educational Resources, which understanding of Open Educational Resource is very important for resource person, a faculty member, a researcher, a student etc etc. because we need to know about development of the resources as well as making use of these resources. So that's what is the content that we will be discussing now.

History of OER

If you look into the history of open educational resources.

- So it begins with the MIT open course project, on "global open education resource movement"- 2001.
- So the term was adopted by UNESCO in 2002, that OER(Open

Educational Resource) this term was adopted in 2002 on a forum on the **"Impact of Open Courseware for Higher Education in Developing Countries"**

- So the open educational resources movement comprised of.

  1. Open Courseware (OCW)
  2. Open Publishers
  3. And Open educational resources Repositories
  4. And publicly funded initiatives

So now we will be looking into them one by one.

Definition

So coming to the definition of Open Courseware. It is an educational content created by institutions and published for free access by the target communities via internet under intellectual property licenses. So there are two important issues that we need to identify

Number one the educational content is open and free access for the entire population and there is the concept of intellectual property license. If you want to take the advantage of this, you can go through it, you can understand that. But when you want to reuse it or when you want to reproduce it. So the IP issues are coming into the picture.

Principles

Then the principles of this open educational resources include.

- **Reuse:** the first one is the reuse. The people are allowed to use all or part of the work for their own purpose. You can download it, you can save it, and you can reuse at any point of time, because you are free to do that. So that's what is the openness means.
- **Redistribute:** then redistribute. You can share the downloaded contents with your peer group, with your students, or with your co-learners etc, so that they are also getting the benefits of these things.

- **Revise:** then you can revise it. People can adopt, modify, translate or change the work. For example a book written in English can be translated into Hindi audiobook, or like that we can think of. So that's what is the meaning of revision.
- **Remix:** then you can go for remixing of that. People can take two or more existing resources and combine them to create a new resource. So the already existing material can be combined and a new thing can be created.
- **Retain:** and then next principle is retain. No digital rights management restrictions. The content is yours to keep, whether you are the author, or you are the instructor using the material or student. So you can easily retain the contents that you have downloaded or that you have obtained from any of the open educational resources.

Different Formats of OER

Then coming to the different formats of open educational resources.

- We have online textbooks
- We have YouTube clips. So number of YouTube clips that you are already enjoying.
- Then animations and simulations
- There are a number of MOOCs that are available
- Video recorded lectures are available on different platforms. As we have said, agMOOCs is one such platform, Swayam is there, e-PG Pathashala. Number of such video lectures that are available. NPTEL courses are there.
- Then web based textual materials available on different formats.
- Then the digital diagrams as well as graphics are also available.

Classification of OER

Based on Type:

So they are available in different formats like maybe

1. Text/print
2. visual/photograph
3. audio
4. video/audio-visual
5. animation

Based on Licensing:

So the licensing includes. There are certain issues

1. copyright protected. That I will be showing at the end of this discussion. What is meaning of this copyright protection?
2. Then there are Creative Commons
3. And there are some public domain issues.

So all these things that we will be showing at the end of this discussion.

Advantages

The advantages of open educational resources include:

- There is an expanded access to the learning, specially for the learner.
- So scalability is another thing, because you can enhance the efficiency under these systems.
- Then augmentation of class materials. So already existing material that you can take, and you can add to it, modify it. So that becomes an opportunity for the learner.
- Enhancement of the regular course content. So whatever the existing content. You modify it according to the things and you can update the data. So that becomes part of your course content.
- Then quick circulation using the information-communication technologies.
- Then less expense for the students because the cost of development has already been incurred by certain agencies

- Then continually improved resources over a period of time, just you can keep on adding while use of that.

Limitations

The limitations of this OER include.

- The quality issues. Who will be assessing the quality of the contents that are available in open educational resources is an issue, is a limitation.
- Lack of human interaction between teachers and students. So if the student starts depending more and more on this electronic resources or the open educational resources. His interaction with his own teacher is going to be reduced over a period of time. So that is another concern
- Language barrier. Then language is one other barrier, because majority of the content is available only in the English language. The contents in regional languages are very less.
- Technological issues : then the technological issues. Maybe you are becoming addicted to the technology. You are using or misusing technology for various purposes.
- Intellectual property/copyright concerns. Then intellectual property rights or the copyrights are another concern. Because people start using the same content in their own name. Or just the issues related to plagiarism are coming into the picture.
- Sustainability issues. Then the sustainability issues over a longer period of time. How long it is going to be sustained, the concept of openness

Organizations in OER

The organizations who are involved in this open educational resources. There is a huge list of organizations specially in Indian context as well as at the global level.

So **Campus of Open Learning** which is situated at New Delhi.

- It was established to introduce job oriented courses to the youth while pursuing their studies.
- A type of distance education as well as the vocational education courses.

Then **Commonwealth Open Schooling Association (COMOSA)** in the State of Uttar Pradesh

- Basically it is a non-profit organization, committed to support the efforts of open schooling institutions, the school dropouts or providing platform to those who are the disadvantaged sections of the society.
- The programs of school education for sustainable development in commonwealth countries, through open distance learning mode is an objective of COMOSA.

Then coming to **NCERT** which is the national level institution under the Ministry of Human Resource Development.

- So the basic objective was to undertake, promote and coordinate research in areas related to school education; so prepare and publish model textbooks, supplementary material, newsletters, journal and develop educational kits, multimedia digital materials and keep it open for the use of the students. Specially the school educational material are available on the NCERT websites.

Then the **Central Institute of Educational Technology (CIET)** which is situated in New Delhi. It is basically a premier national institute of educational technology, to promote utilization of educational technologies like maybe radio, tv, films, satellite communication and the cyber-media. So how we can develop different formats and how we can enhance the qualities, the issue that is being dealt with by CIET, New Delhi.

Connected Learning Initiative (CLIX)

- is another technology enabled initiative at the scale of high school students. So they are catering to the needs of the high school students.

Then **Information and Library Network (INFLIBNET)** which is an initiative of MHRD.

- So connecting libraries as well as the information centers, through a nationwide high speed data network. So all the e-PG Pathashala contents are available through this INFLIBNET network only.

Then the State of Karnataka has taken an initiative of launching an initiative like **Pratham Books.**

- So non-profit children's book publishing house. It uses CC licenses (Creative Commons licenses) to further distribution, translation and reuse this particular work at the State level.

Then **National Institute of Open Schooling,** which was established in 1989.

- Basically providing an opportunity to the school dropouts and the disadvantaged sections of the society by developing the courses of study through open and distance learning (ODL) mode. And largest Open Schooling System in the world, that we can say.

The **Indira Gandhi National Open University (IGNOU)** which was established in 1985.

- It is offering high quality teaching through the Open and Distance Learning mode.
- So there is the School of Agriculture (SOA), which was established in 2005 at IGNOU. It also strives to develop agricultural entrepreneurs and agri business managers with

the help of using these open educational resources.

OER Services

Some of the services of OER include.

e-PG Pathashala

- I have already said, it covers more than 70 subjects, belonging to the social sciences, arts, fine arts, humanities, natural sciences, mathematical sciences, linguistics as well as languages.

National Repository of Open Educational Resources (NROER) again at the national level which is acting as a storehouse for open educational resources.

Then at the State level we have the initiative of the State of Telangana. **Telangana Open Educational Resources (TROER).**

And **Vidya Mitra** is another effort by the government.

- An online learning portal for all e-connected projects developed under the National Mission on Education-Information-Communication Technologies (NME-ICT) of Ministry of Human Resources Development.

Audio-Visual OER

The audio-visual open educational resources are being developed by

The NPTEL, we have already discussed about this in the agMOOCs platform also. National Program on Technology Enhanced Learning, which is focusing basically on engineering education.

Consortium for Educational Communication (CEC) which is broadcasting huge number of programs for the benefit of the society through the television. So they have exclusive channels like the Gyan Darshan, which is an educational channel through Edusat.

Then Project on **Open Source Courseware Animations and Repository,** which is popularly known as OSCAR. It is an initiative

of IIT, Bombay in collaboration with NME-ICT, which creates a repository of web based interactive animations for teaching various concepts as well as technologies. So their specialization is based on the development of animations and inculcating these animations into educational systems.

e-GyanKosh of IGNOU is another repository. Audio-visual repository that is available which provides access to the outstanding video lectures recorded at the IGNOU studio of Gyan Darshan, and which are for the use of public.

agMOOCs is another effort. So we are all beneficiaries of this. Initially it was launched with NPTEL in collaboration with IIT, Kanpur as well as Commonwealth of Learning. So focusing on developing quality educational content for agricultural education.

Swayam is an initiative of again the Ministry of Human Resource Development. So the full form of Swayam is (Study-webs of active learning for young aspiring minds) program. So they have also come out with a number of MOOCs courses, wherein subjects of science, arts, humanities, law, management etc etc, specially at the graduation level. Number of students are accepting or adopting these courses as a part of their learning efforts.

Textual OER

The textual open educational resources include,

1. The NCERT
2. E-GyanKosh of IGNOU
3. Then, National Science Digital Library
4. Vidyanidhi, it is the effort of University of Mysore.
5. Krishikosh, it is an initiative of the Indian Council of Agricultural Research, under the National Agricultural Innovation Project.

So these are some of the textual open educational resources.

Websites for Open Educational Resources in India

There are certain websites for open educational resources in India. The prominent of them are

1. www.nroer.in National Depository for Open Educational Resources.
2. Then e-Basta is the government digital initiative.
3. Then NCERT is another example that we have already discussed.
4. Then ictcurriculum.gov.in So wherein you can get huge amount of resources.
5. Then books.google
6. As well as scholar.google

These are some of the platforms where you get open educational resources.

Licensing Descriptions

Now coming to the most important aspect. When I want to download anything, reuse, or modify or accept the things. So we need to emphasize on the marks that are mentioned on the paper, somewhere on the website or on the paper. So what does this mean. The first one

- If it is written public domain. It means, it is free content available globally without any restrictions. You can use it, you can modify it, you can circulate it. All types of freedom is there.
- So if this mark is attached on a particular paper or a video or whatever it is. It means you need to attribute the authors and the Institution, which has produced that.
- So the next symbol says that, so it needs to be attributed as well as in the similar efforts that you can share it.
- And this particular symbol denotes, the attribution is essential, as well as you can go for noncommercial circulation.
- And this particular symbol says that, you can attribute. It should be non-commercial and you can share it.
- And this particular symbol says that, attribution but you should not modify it. There are no derivatives of it.
- And this particular symbol says that you need to attribute or you need to acknowledge it. But it is non-commercial in nature

and no derivatives are allowed.

So we need to understand these licensing descriptions, provided by or given by the author. So this is what we were referring to the 'intellectual property rights' as well as the copyrights that we need to keep in mind, while using the downloaded material from the web.

Conclusion

To conclude we can say that

- Education is limitless. So the open educational resources are an opportunity, as well as if the care is not taken, that becomes a limitation also.
- Electronic mediation are widening the limits of this education and providing lots of opportunities for the people.
- And it satisfies the knowledge hungry learner. Because of the repositories, the number of sources that are available.
- And the licensing issues make the creator as well as user more responsible. So we need to take extra care while using the things that are created by somebody else, because the Intellectual Property Rights belong to him or her who has developed that. We need to respect that. And at the same time your rights are also being respected by others.

With this we will be coming to end of the discussion on Open Education Resources.
    Thank You.

PDF: Open Education Resources

Resources (OER)

5-4 Practical application of e-Extension – Vikaspedia

Hello friends. In our previous discussion we were talking of open educational resources, and the important issue of licensing mechanism, as well as how we can attribute the efforts of the content generator. And while making use of that, what are the precautions that we need to keep in mind. And various repositories that are available. This is all we discussed in our previous discussion. So in this part of the discussion, we will be taking up the concept of Vikaspedia.

ICT Trends—Past, Present and Future

So if you look into the ICT trends in the past, present as well as in the future.

- So the era of mid-eighties to mid-nineties was emphasizing on the concept of 'information is wealth'. Because the availability of information was very very scarce in that particular period.
- In the next decade. The mid-1990's to mid-2000's, we said that the 'knowledge is power'. Because the accumulated or the generated information was translated into knowledge and people started realizing that, really knowledge is the power

and we can do number of things, we can create wealth, we can do number of achievements by using or taking the help of knowledge. So that is how we started identifying knowledge as the power.

- But the era of 2006 and beyond, till date, so now we are of the opinion that knowledge sharing is both wealth as well as power. Because the knowledge has been accumulated. But now it needs to be shared and it needs to be converted into various products as well as services. So that is why it can create wealth and it can give you the power.

Vikaspedia Portal

So the Vikaspedia portal, basically it is a Government of India initiative.

- So wherein it was launched in the year 2014,
- with the objective of providing e-Content and using ICT based applications for societal empowerment. A number of areas were taken into account for providing the services.
- So this Vikaspedia portal is available in 23 Indian languages.
- So the 6 domain areas include agriculture, health, education, societal welfare, energy and egovernance.

So these are the basic areas that the Vikaspedia is covering.

Need for e-Content in Regional Language

The need for e-Content in the regional language becomes very-very relevant in today's context. Because in India we have about 418 languages, of which 22 are official languages. The population of the country as you are already aware is 1.28 billion, and more than 600 million internet users are there are in India. So why we are talking of these statistics, because that has a relevance. So this many huge number of people are getting the benefits of internet as well as the platforms that are available; the avenues that are available, making use of the services that are available which are having e-mediation. But if you don't have content so in your regional language, maybe

this particular huge number of population are devoid of the real benefits of the technology.

So there are about 1182 million mobile users are also there, which means,

- So of this 193 million mobile internet users are there. It means accessing internet on a mobile, nowadays it is a very common feature
- 64% of the rural users search content in the local language
- And 25% of the urban users search content in the local language

So these two figures force us to develop content in the regional language. So huge amount of population specially residing in the rural area. So they need the content in their regional languages. If you provide in regional dialect, so that is well and good. So it is not that there are no efforts. We have already discussed one such experiment under the heading of Digital Green, which is already working in this. But that is not the only experiment which can satisfy all the needs of the people. But government is also considering such efforts.

Collaborative Content Creation

So just to take care of that, making use of the similar concept, so the organization is working on the collaborative content creation.

- So wherein they are making use of the concept of **crowd sourcing model.** It means just they are asking the opinions of people. What are they saying about? And what are the expertise that they have? Putting all their experiences together, so they are developing the content. So inviting the community for active contribution of content in their own language. So the moment they start contributing, there is somebody who is editing that. And there is somebody who is adding value to that. So that is how the content keeps on improving. And with the people's participation only.

- Any individual or volunteer can contribute the content. Edit the content or comment on the existing content also. So it is similar to the efforts of the Wikipedia. So the Vikaspedia is also working.
- Then contributed content is validated by the identified experts, and moderated by the State nodal agencies in the respective States. It means, that it is not that what the crowd is telling is going to be true. Yes there are lot of valid contents that are available. But that needs to be further validated by the experts, so which are being appointed by the government, who will be going through the contents that are provided by the crowd sources. So then ultimately that takes the proper shape to place in the website.
- Similar to Wikipedia. But with more reliable and authentic content in the local languages, specific to that particular region for which that this content is being developed.

Information Services

- The information services include in the local languages. It may include the success stories, the technologies, best practices, govt schemes. So this can be the areas, so wherein you can provide the information.
- Then it can be presented in any of the multimedia products.
- You can design the e-Learning courses.
- You can think of value added courses like (e-Vyapar, Ask an expert, question/answer forum) like that
- And development of mobile apps for the key livelihood sectors that you can think of.

So this is how the homepage of Vikaspedia looks,

1. Which focuses on issues related to agriculture. The entire practices that are available here covering the major crops in the regional languages.

2. Similarly the health related issues are also being covered by this Vikaspedia.
3. The content related to education, which covers issues like the child rights, then policies and schemes, child corner, teacher's corner etc-etc, which gives an opportunity for the learner.
4. Similarly the social welfare which emphasizes on empowering the marginalized and the rural communities. And the various issues associated with the women are being covered here, by giving appropriate information.
5. Similarly the energy page is there
6. Then e-governance page is there giving lot of information regarding various govt schemes etcetc. if you look into the e-governance, it becomes very relevant that. So availability of the information regarding government schemes. So that itself is one of the important source.
7. Because as on date, there are more than 140 projects related to agriculture and allied sciences are in operation. But how many of the farmers are aware of this, out of 140 projects or the program schemes that are for the benefit of farmers. So it is very difficult for an individual to remember all these things. So that is why the portals like this, the platforms like this becomes more relevant.

VikasPedia – Current Status

The current status of Vikaspedia is,

- Hosted Content and Service

    1. So there are about 14,000 + web pages are there
    2. Then multimedia content if you look at- the audio is of about 2330 mins, video for about 13, 923 mins. So this is all the content that has already been developed

- Portal Utility (Since launch in Feb, 2014)

So if you look into the utility of the portal since Feb, 2014

- 9.2 million hits per month, that this portal is getting.
- 2.2 lakh unique visitors per month that it is having.
- 26 million page views per month
- And 8405 content volunteers across 10 languages, who are working for development of content for Vikaspedia.

Conclusion

To conclude we can say that.

1. Search for need based regional language e-content is increasing owing to the mobile internet users. So as the mobile as well as internet penetration increases, the search for content also increases. If there is no content available, the user is going to divert himself while making use of the internet sources.
2. The key challenge for Vikaspedia is to ensure credibility and authenticity of the content for the communities. Care has already been taken by employing the people to validate the content.
3. Then converging Vikaspedia with the existing public library system in India will ensure greater reachability. So this can be a virtual library for the entire country. It is available for the use of the whole country.
4. Then crowd sourcing model is effective in meeting the growing demand for region specific information needs in India.

So looking into the diverse nature, diverse culture that is available, and the diverse agro-climatic situations that are available in the country. So crowd sourcing is one of the best model, but the validation of the content that is generated through crowd source is

also there. So this is how the Vikaspedia model is working for the benefit of rural people, covering maximum number of farmers.

With this we will be coming to the end of this discussion. And in the next interaction we will be talking of the electronic- National Agricultural Marketing.

Thank You.

Download

PDF: Vikaspedia

5-5 Practical application of e-Extension – e-NAM

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/ eextension/?p=68#oembed-1

Brief Synopsis

Hello Friends. In our last interaction we discussed about the concept of Vikaspedia. I am sure by now you all might have visited the portal of Vikaspedia and obtained huge number of details that are available there. And over a period of time, you can add content as well as you can be the beneficiaries of the concept of Vikaspedia. In this interaction we will be taking up the issue of e-National Agricultural Market. This is a virtual marketing place, that has been created by the Union Ministry of Agriculture. And it is giving an opportunity for a primary producer or a farmer to be a trader also.

Earlier there were a number of restrictions for a farmer to become a trader. So because of that he was not getting the remunerative price for his produce. So the government thought, so if we translate this farmer into a trader, so that he can directly market the produce that he has. So that he can realize the benefits of the marketing channels, what otherwise the traders are really harnessing, the profits. So keeping these things in view, the Govt of India launched the e-NAM.

e-NAM

- It is basically an electronic trading portal. Which seeks to network the existing Agricultural Produce Marketing Committees(APMC) and other market yards, to create a unified national market for agricultural commodities. So basically there is a beautiful marketing network that is throughout the country, so wherein there are number of APMC's that are working. So now all these things, APMC's are being connected electronically, so that they can exchange the price, they can exchange the commodities. Their arrival and at what price they are being sold etc etc are being exchanged electronically, so that it gives an opportunity for the farmer to trade his produce. Basically the National Agricultural Market is a virtual market. But it has a physical market at the backend.

We cannot think of the National Agricultural Market, without this backend support, because you are there into trade of physical good.

- The National Agricultural Market is an effort to create a national network of existing mandis, which are already existing. But now there is only an effort to link them electronically, which can be accessed online. It seeks to enable buyers situated outside the State, to participate in trading at a local level. So earlier there were also restrictions that the farmer of one State cannot enter into another State for the purpose of trading, for the purpose of selling his produce. But now with this, so the entire country is acting as a particular village.

Vision
The vision of e-NAM is to promote uniformity in agricultural marketing by

- Streamlining the procedure across the integrated market. So earlier there used to be a policy for each State, for each region. But now the entire country has the same policy for trading as

well as marketing of agricultural produce.

- Removing information asymmetry between buyers as well as sellers. So some of the buyers were having huge amount of information and some were not. And some of the sellers were having appropriate information, many were not. So this information asymmetry was removed, because all are having equal access to this information contents.

- Then promoting the real time price discovery based on the actual demand and supply. So what exactly is the demand in the market and accordingly how the price is behaving is determined by this particular effort. So this is what is the vision.

Mission

The mission includes,

- The integration of APMC's across the country to a common online market platform to facilitate pan-India trade in agricultural commodities. Providing better price discovery through transparent auction process, based on quality of produce along with the timely online payment.

So if you look into this mission, there are 3 or 4 important issues. So now you can trade your produce pan India, it means it is your geographical area of marketing of your agricultural produce is not limited to the State which you belong to, which was the earlier case. The second one is, you can discover the best possible price for your produce based on its quality. And the process of auctioning is transparent, because everyone is bidding online and everyone can know who is bidding what price. So that is how the transparent bidding, sorry the auction process is already there, is being provided. Then the quality of the produce is also visible, because the bidder is asking for a quality, the trader is asking to explain his commodity with the qualities.

And ultimately when it comes to the payment, farmers are the

real losers. Many times they used to wait for months for getting the payments from these government channels or the government offices because of the procedures and number of things. But once the payment has been made online, it has become easy as well as timely.

Stakeholders

The stakeholders of this e-NAM include,

- The farmers, who are the primary producers
- And they themselves are translating themselves into the traders when they harvest the product.
- APMC is basically a marketing place wherein the farmers are the members
- The Farmer Producer Organization(FPO), because the marketable surplus of each and every farmer is not much, looking into the Indian situations. The small holdings. So that is why farmers are organizing themselves into farmer producer organizations, so that they have a bulk production, they have a bulk commodity to sell in the market.
- As well as the Mandi board which are supported by the State as well as Central Govt.

Need for NAM

The need for NAM arises because of

- The APMC regulated market yards limit the scope of trading in agricultural commodities as per the previous norms, but now they are being opened up.
- So even within the State there are transaction costs on moving the produce from one market to another area. So that was the traditional system. The earlier system that was having. But NAM is going to overcome all these problems.
- Then multiple licenses are necessary to trade in different markets in the same State. So each and every trader was having a license to engage into the trading of agricultural

commodities in one market. If you want to enter into another
market, so then he has to have another license. So this multiple
licensing also came to an end with the introduction of this
National Agricultural Marketing System.

Then NAM Intends to Reverse the Process

- Fragmentation of markets
- Lowering the intermediation cost
- Wastage and price for the final consumer. Because ultimately
  the farmer should get all the benefit of all these efforts. So that
  is what is the basic idea here.
- It builds on the strength of the local mandi, and allows it to
  offer its produce at the national level

So now the farmer should feel proud because he himself is entering
into the trading process, number one, and he can sell his produce at
the best possible price and to the intended customer.

**The Basic Criteria for a State to Plug into the National
Agricultural Market** is

1. The State APMC Act must have specific provisions for
   electronic trading. So now because agriculture being a State
   subject, the State has to modify its norms, so that they can be
   part of this NAM (National Agricultural Market)
2. Then the State APMC Act must provide for issue of licenses to
   anyone in India to trade through the National Agriculture
   Market in the local Mandis. So this type of modifications are to
   be brought into the APMC Act in every State, so that they can
   be part of this National Agricultural Marketing System.
3. Then there must be one single license for each State to
   facilitate trading in all Mandis of the State. It is not that
   multiple license, but it should have a single license and a single
   point levy for transaction fee. The transaction fee also to be
   charged at once. It is not that multiple fees that you are

charging.

So with these modifications a particular State can be a part of the National Agricultural Market.

Then coming to the **Benefits of Direct Marketing – NAM.**
When we look into the monetary benefits, the farmers are getting

- The higher share in the consumer rupee. Because whatever the consumer pays in Indian context, only 25% is going to the farmer, and 75% to the marketing channel. So now farmer becoming a trader with e-NAM, so he can get the additional benefit in the market.
- Then marketing cost is minimized because the primary producer is involved into this process.
- Then lower transaction cost because of the modification of the APMC Act. Reducing the multiple licenses, reducing the transaction fees etc etc.

Then non-monetary benefits to the farmers include.

- Number one the farmers directly come in contact with the consumers and come to know about the consumer's requirement also. Earlier, so there was a middleman who was explaining all these things. But now these middlemen are eliminated. Farmers as well as the final consumers, so they are having face to face situation.
- It reduces the post-harvest losses of the produce because there is no time gap in after harvest as well as its sale to the end user.
- Then farmers increase their efficiency by access to the better technologies, because they are becoming part of this electronic mode, obviously they will be beneficiaries.

The Modus Operandi include

- The Small Farmer Agri-Business Consortium(SFAC) is the lead

promoter of National Agricultural Marketing. So which is in operation since 1994, SFAC, so which is taking the lead.

- Then it will select the strategic partner through open tender to develop, operate and maintain eNAM platform in a particular State.
- Then Department of Agriculture and Cooperation (DAC) will provide a budgetary grant to begin with.
- Then SFAC will operate National Agricultural Market with the technical support by the committees.

Then the User Friendly NAM. How it has become user friendly?

- Because of the e-NAM app
- Because of the availability of app in the regional languages.
- Because of availability of e-Learning videos
- Because by making use of these videos, you can self learn number of operations, transactions that you can or you are expected to take up in this platform.
- There is space for frequently asked questions(FAQ) wherein you can ask the question and you can get the clarification and you can have the appropriate answers.
- There are manuals for operations
- The AGMARKNET updates are already available
- There is a helpline which you can call all the time. You can get the required information.
- There is a space for registration
- And you have an access to 585 Mandis from 16 States.

So these are some of the features which makes the NAM a user friendly approach.

Conclusion

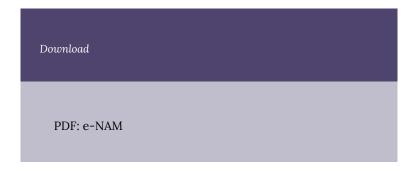To conclude we can say that the e-National Agriculture Market

- Is an opportunity for a farmer to become a trader. Earlier he was only the farmer, but now he is translating himself to be a trader.
- Then there is a need for changing the attitude of the farmer, the primary producer. And at the same time the traders as well as the government officials also.
- Then the stakeholders should work collectively. Then only they can generate the appropriate data which is needed for this market. Initial stages that effort has to be holistic in nature, otherwise problems will sustain.
- Then institutions have the responsibility of providing timely and appropriate information, otherwise it is not going to be successful. We have the appropriate information, the timely information, then only you can be an efficient trader.

With this we will be coming to the end of this discussion. And in the next week we will be looking into 5 different institutional arrangements, which are providing the e-mediated extension services. So those efforts include the

1. e-Extension initiatives of Indian Council of Agricultural Research
2. e-Extension initiatives of State Agricultural Universities.
3. e- Extension initiatives of the private organizations.
4. e-Extension initiatives of non-governmental organizations
5. and what are the e- Extension initiatives for the allied sectors of agriculture.

That we will be discussing in the next week.
   Thank You.

Download

PDF: e-NAM

6-1 e-Extension initiatives of institutions – e-EXT- ICAR

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Transcript

Brief Introduction

Hello Friends. In our previous discussions we talked about e-National Agricultural Market, which is a digital platform for sale as well as purchase of agricultural commodities. The unique feature is farmer can become a trader, and the digital platform provides him an opportunity to maximize his profits. So in this discussion we will be taking up the issue of the e-Extension initiatives taken up by the Indian Council of Agricultural Research. As you are already aware, Indian Council of Agricultural Research is a nodal agency for agricultural education, research as well as extension at the national level.

So apart from conducting the research on various agricultural commodities. So it also develops the policy for its marketing as well as its extension related activities. So the journey of extension, as we see from the adoption of traditional methods of extension services. So now we are in the era of informationcommunication technology

revolution, wherein largely the ICT mediation is there in delivering extension services and how ICAR making use of these. So let us have a look at them.

Initiatives by ICAR

This is an indicative list of the e-Extension initiatives of Indian Council of Agricultural Research. So we will have a look at them one by one

RKMP

To begin with the Rice Knowledge Management Portal.

Vision: So the vision of this Rice Knowledge Management Portal is to serve the wide range of stakeholders and help in better planning to realize higher productivity and production of rice through improved knowledge and skills with the help of this portal.

- Basically this acts as a comprehensive repository of knowledge regarding the rice cultivation and the management of the rice crop. The extension and the farmer domains on this portal provide production knowhow, the knowledge related to the production, package of practices, frequently asked questions in English as well as in local languages. So this motivates the farmer to be a part of this particular portal.
- It caters to the information needs of exporters and farmers through the trade information system. So it is not only the farmers, even the exporters are the beneficiaries of RKMP
- Then indexing of mandi prices from regulated markets with the help of the data from the Agmarknet helps the farmer to take the appropriate decisions, but the commodity that they are dealing with is only one; that is rice.

Consortium for e-Resources in Agriculture (CeRA)

Then coming to the Consortium for e-Resources in Agriculture which is popularly known as CeRA.

- Basically it is a consortium of agricultural libraries under ICAR for National Agricultural Research and Extension System

libraries. So, so far there are 152 members under this CeRA.

- Basically it deals with online access of select journals in agriculture and allied sciences to all researchers, teachers and students, policy planners, administrators and extension personnel, who are part of this National Agricultural Research System through IP authentication Means the entire knowledge that is being generated, related to agriculture and allied sciences are brought under one platform and made available to each and every stakeholder of agricultural research, education as well as extension system.

Objectives of CeRA

The Objectives of CeRA include,

- To upscale the existing R&D research and development information resource base of Indian Council of Agricultural Research institutions/State Agricultural Universities, comparable to world's leading institutions as well as organizations. Because the international agencies are becoming more stronger because of their huge amount of information base. Similar efforts are being made here so that we can compete with them and we can develop ourselves.
- To subscribe online journals/e-resources and create e-access culture among scientists, faculty members, ICAR institutions and the agricultural universities. The students, faculty members as well as the researchers are becoming part of this, so that we can develop the electronic access culture among these people.

KRISHI– Knowledge based **R**esources **I**nformation **S**ystems **H**ub for **I**nnovations in agriculture

The next effort of ICAR is the Krishi, the full form stands like this (as mentioned above). Basically it is a centralized data repository system of the Indian Council of Agricultural Research consisting of technology, data generation through experiments, surveys,

observation studies etc etc, based on the geospatial data, publications, learning resources etc etc are brought under a common platform, so that you can analyze it and come to the logical conclusion.

Objectives

The objectives of this KRISHI include

- To develop knowledge repositories related to proven technologies and publications. There are number of State Agricultural Universities and there are number of ICAR institutions who are coming out with technologies on a regular basis. So all these things are being consolidated on one platform. So that's what is KRISHI.
- Then to create agricultural geo-portal for strengthening visualization and analysis of this spatial data. So country is very large and diverse in nature. There are a number of cultural aspects as well as the agro-climatic aspects that are involved. Based on that whatever the things that are being developed in different parts of the country are brought under one platform.
- Then to develop agricultural knowledge portal, to provide access and manage this knowledge repositories is another objective.

Mobile Apps

Then coming to the mobile apps. ICAR so far has developed 117 apps on different areas of agriculture and allied sciences. Just to quote here, some of them, that is,

- The Herbal Kisan, which is focusing on the medicinal plants. The detailed information for the farmers, students, drug manufacturer regarding medicinal and aromatic plants and their cultivation techniques are provided through these mobile apps.

Farm Calculator

Then coming to the farm calculator which is one of the important innovation that has been contributed by the Indian Council of Agricultural Research that we can say.

- The farm calculator emphasizes on the fertilizer calculator,
- pesticide, fungicide and herbicide calculator
- Then the plant population calculator,
- Seed rate calculator
- And the seed blending calculator

So these are some of the very trivial issues in agricultural operations. So once we have customized mechanism for calculation of the fertilizer, the pesticide requirement, then the plant population, seed rate etc. Farmer can take appropriate decision. He can save huge amount of resources. Maybe it is seed or maybe it is a financial resource. Maybe it is a plant protection chemical which has adverse effects on both human-beings as well as the nature. So all such things can be avoided with the help of using this calculator.

Fertilizer Calculator

So let us look into the fertilizer calculator. So if you enter into the recommended doses of nitrogen, phosphorous as well as potassium, so you will be getting a number of combinations. So if you are having urea as well as SSP, this is the combination that you need to go for. And if there are various other formulations which are mentioned just below this, just you can scroll down and have different combinations, and accordingly you can go for purchase of these inputs and application of these inputs.

Pesticide Calculator

Then coming to the pesticide calculator. So just you enter the active ingredient, that is available in that particular chemical and ultimately it is giving you the result, that the quantity required is 50 ml or 50 gram of chemical for that particular volume of water and the amount that you need to spray there.

Similarly the plant population. The area you need to give there, then the spacing, then it gives the plant population that you are

expecting. So these calculators are ready reckoners so that farmers can make the best use of this. And it helps them to take appropriate decision. So that is how the farmer is getting empowered.

Then **ICAR Mushroom App**, the name itself is self-explanatory, designed for mushroom growers, mushroom entrepreneurs and mushroom researchers as well as the students.

Goal of Application

So the goal is

- To popularize mushroom cultivation and its nutritional as well as medicinal values, so that it can become a very good alternative for nutrient supplement.
- Then to notify the interested mushroom entrepreneurs for mushroom training. So you can get the training calendar also related to mushroom.
- Then to promote crop advisory to mushroom growers. What are the precautions that he has to take and what are the options and opportunities that are available.
- To provide information about newly developed mushroom technologies by the Indian Council of Agricultural Research—Directorate of Mushroom Research.

So these are some of the benefits of making use of this mushroom app.

SMS Broadcast Service by KVK

Then sms based broadcast service by Krishi Vigyan Kendra. As you are already aware, the Indian Council of Agricultural Research has a huge network of 700+ krishi vigyan kendras throughout the country, so which are registering the farmers with their mobile numbers and sending

- Weekly alerts on weather, disease forecasts and market information. So this makes and this empowers the farmer, because they are getting the information from the resource centers, the valid centers.

- Then alerts on important trainings and other programs through the farmer's clubs, and self-help group networks under the Krishi Vigyan Kendra. So it provides various other information in addition to the weather as well as the disease forecast.
- It is an efficient tool to disseminate development to farmers and empower them to face the challenges of upcoming free market.

e-Dalhan Gyan Manch

Then coming to the e-Dalhan gyan manch.

- So which is the product of the Indian Institute of Pulse Research situated in Kanpur. So which is providing all the information about the pulse crops and every related aspect of pulse farming in the entire country. So this is a unified effort of the IIPR, Kanpur. So that they can provide all the information related to the pulse production and pulse marketing.
- The users can register themselves on this portal to get voice based mobile agro advisory services. So this is what is the unique feature of this e-Dalhan gyan manch.

KIRAN – Knowledge Innovation Repository of Agriculture in the North-East

KIRAN is another effort which is focusing on the North-Eastern part of India, which has a huge potential specially in case of horticulture crops and the untapped potential is there, but the government now is focusing on that particular part. So this KIRAN stands for (knowledge innovation repository of agriculture in the north-east). The **objective** of this KIRAN is,

- To create a knowledge and technology repository for the north-eastern region. So looking into the geographical area of the north-eastern region, which is hilly in nature and their cultural aspects and their religious aspects. There are number

of variations from the mainland that we can say. And their needs are totally different from the rest of the country. So that is how there is a need to develop a separate repository for the north-eastern region.

- Then the second objective is to foster the linkage amongst the partners and collaborate with the State as well as the regional organizations. So that their network becomes more stronger, the linkages become more stronger.
- Act as a catalyst to strengthen the existing institutional capacity through convergence and networking.
- Then the next objective is to provide technology and development consultancy along with the details of technology dynamics and kinetics.
- Last objective is to develop programs for sustainable agricultural development in the region and provide support for future strategy formulation in research as well as extension.

With these objectives the KIRAN is moving ahead.

Expert System on Seed Spices

Then coming to the expert system on seed spices. The seed spices have the highest prices in the market and there is huge amount of international demand. So that is why the cultivation of seed spices is going to generate additional income for the farmer.

- So the expert system is providing the complete information about the seed spice production management in the entire country.
- It covers the important spices like the cumin, fenugreek, coriander, fennel, nigella, dill and ajowain.
- It advises on the basis of area, cultural and climatic conditions and other characteristics of the farmer interest, that gives you advice whether you should go for this crop and in what season you should go for this and all this advisories that you will be getting.
- Then it suggests the appropriate cultural practices like field

preparation, fertilizer application, schedule of irrigation etc.
- Also this expert system guides on protecting seed crop from the insect, diseases, weeds etc etc.
- It also provides the solutions to the problems faced by the farmers through online queries. You can put your queries. There are experts who are delivering advises to you.

Conclusion

Then to conclude we can say that,

- The Indian Council of Agricultural Research is the nodal agency for education, research and extension activities at the national level.
- It is taking up the job of knowledge generation, as well as its institutions are involved in technology dissemination.
- Innovations in methods of technology transfer is a continuous process. And ICAR is taking a lot of interest in this and they are coming out with lot of innovations as far as the technology dissemination are considered. Few of such examples we have already discussed and there are many such experiments that are going on, and many are in the pipeline also.

With this we will be closing this discussion on e- Extension initiatives of the Indian Council of Agricultural Research. And in the next interaction, we will be talking about the e-Extension initiatives of State Agricultural Universities.

Thank You.

Download

PDF: e-Extension initiatives by ICAR

6-2 e-Extension initiatives of institutions – e-EXT-SAU

Transcript

Brief Introduction

Hello Friends. In our previous discussion, we were talking of e-Extension initiatives of Indian Council of Agricultural Research, wherein we have seen a range of services which are having electronic mediation, being provided by ICAR for the benefit of farmers, students of agriculture, traders and the budding entrepreneurs. In the series, in this class we will be discussing about some of the e-Extension initiatives of State Agricultural Universities.

As you are already aware. There are more than 75 State Agricultural Universities who are providing education in various disciplines of agriculture and allied sciences, and number of privately owned colleges affiliated to some universities. And some deemed universities are also involved in teaching, research and extension activities. We will be focusing our discussion on the initiatives of State Agricultural Universities.

Kerala Agricultural University

Let us begin with the initiatives of Kerala Agricultural University, which have developed the

- KAU agri-infotech portal, which provides the concepts like
- E-Crop doctor
- And online courses.

So it is a one stop solution for the farmers, wherein once they enter into this portal by registering themselves, they can get access to a number of services that are being offered by this portal. This portal is covering the issues like e-Krishi Pathshala and,

- They are offering courses for farmers, extensionists, students and farm entrepreneurs, groups and other agri-stakeholders.
- Then coming to the training workshops for the farmers and extensionists which are being organized are flashed on this portal. So that you can be part of this particular system.

So this type of effort that are initiated by the Kerala Agricultural University.

Tamil-Nadu Agricultural University

Now coming to the TNAU agritech portal, which is one of the most interesting as well as comprehensive agritech portal that we can see,

- Which provides information related to agriculture and allied sectors.
- It is supported by Rashtriya Krishi Vikas Yojana(RKVY)
- So it developed expert systems for

- Paddy
- Sugarcane
- Ragi
- Sheep & goad
- Coconut
- Buffalo
- Poultry
- Banana

So this itself shows the range of crops that this agritech portal is covering. And the expert system keeps on asking a number of questions to address your problems. And based on the questions and the responses that you are giving, so it is giving you the specific solution what you are looking for. So this is what is the methodology that was adopted by the TNAU agritech portal.

Punjab Agricultural University

Then coming to the PAU kisan app. Punjab Agricultural University has developed an App which will provide information about the crops, weather, seed, training, kheti sandesh and advisories etc etc. This App is basically for the purpose of farmers. So this is how the Punjab Agricultural University is providing services to the farmers.

Goat Farming

Then coming to the app of goat farming developed by **Guru Angad Dev Veterinary and Animal Sciences University**. So because animal husbandry is one of the allied enterprises of agriculture, which helps in increasing the income of the farmers. This allied enterprises, they derive their inputs from agriculture only. But by

maintaining these enterprises, so both the enterprises; the crop husbandry as well as the animal husbandry are mutually benefited. Until and unless we make the animal husbandry strong, the agricultural enterprises are also not becoming strong. So that is why allied enterprises are to be given due importance so that is how the animal based app is being developed to provide the information related to the care and management of this goats for the purposes of farmers.

Pig Farming

Then coming to pig farming another allied enterprises of agriculture. So the same university Guru Angad Dev Veterinary and Animal University, is through this app it is providing the information related to pig farming for the farmers.

Bihar Krishi App

Then the community radio station of **Bihar Agricultural University** is one of the most popular example in the entire State. So people are responding to the maximum extent as far as this community radio station is considered. In addition to that they have Bihar Krishi App, which is providing location specific information to the farmer, and at the same time they have Bihar agro-doctor also, so which provides solutions to the farmer.

Phone-in Live Programs : Rythu Mitra

Then coming to the State of Andhra Pradesh, which is launching

a program related to the live phone-in program, popularly known as Rythu Mitra. So *Acharya* N.G. *Ranga Agricultural University* is hosting this program in collaboration with the Dept of Agriculture (Govt of Andhra Pradesh) and TEJA channel. It's a privately owned channel. So the timing is 6:30 to 7:00 in the morning and 6:00 to 6:30 in the evening. The pre-recorded programs usually 3 programs of 10 minutes each on agriculture, horticulture and animal husbandry and other allied fields are being broadcasted through this TEJA channel. So this is the initiative of Acharya N.G. Ranga University.

Anand Agricultural University

Then coming to the Anand Agricultural University, which is providing the information related to the soil health card, which is one of the most successful case in the State of Gujarat, that we can say. The analysis of the soil properties and the application of fertilizers, based on the result of the soil health card. So once you enter into the portal and you provide your credentials, and the results of the soil health analysis once you provide into this portal. So that gives you the recommendation ki what are the fertilizers that you can go for your crops.

Prof Jayashanker Telangana State Agricultural University

Then coming to the efforts of (PJTSAU) so which created in the year 2001. So they established in the ATIC building.

- So the public and private TV channels telecasting this agricultural programs.

- So university became the knowledge partner of this and the channel started providing them the communication support. So this is how they started broadcasting the program.
- Then the production of video capsule programs, digital videos, video discs, Quickies and jingles, information kiosks and agricultural portals are some of the other initiatives of PJTSAU.

Indira Gandhi Krishi Vishwavidyalaya, Raipur

Then coming to the IGKV, Raipur. So they have developed the **Krishi Gyan** portal, which provides
information on the cultivation aspects of all crops that are grown in the State. It is again one stop
solution for the entire State. This is the only agricultural university that we find in the State, and which is
providing all information at one point of time.

Tamil Nadu Dr J Jayalalithaa Fisheries University

Then coming to the DJJFU, which has developed the **Fish Technology** portal, which provides information about rearing of fish, management, nutrition of fish for their growth and development etc etc. Means the fish farmers are the real beneficiaries of this particular initiative. So this examples of the efforts that are being made by the State Agricultural Universities reveal that the location specific situations are being addressed by these State Agricultural Universities, and the farmers are the real beneficiaries of that.

The Indian Council of Agricultural Research is making a nationwide effort wherein it may or may not suit a particular region.

But the efforts of State Agricultural Universities are addressing the location specific problems of the farmer.

Conclusion

So to conclude we can say that,

- Providing location specific information is the biggest challenge, what the State Agricultural Universities are taking up and satisfactorily they are doing information-communication technologies are really helping them to solve the problems of the farmers.
- And providing this services in regional language is another challenge before the State Agricultural Universities. Again with the help of software support as well as the experts belonging to the State Agricultural Universities and the various research institutions as well as some of the most experienced as well as progressive farmers are becoming a part of such initiatives, so that the ultimate information is reaching to the end-users who are the real beneficiaries.

So this is in a nutshell about the e-Extension initiatives of State Agricultural Universities. In the next discussion we will be taking up say the e-Extension initiatives that are supporting the allied sector of agriculture and the allied enterprises.

Thank You.

Download

PDF: e-Extension initiatives of SAUs

6-3 e-Extension initiatives of institutions – e-EXT- Allied Sector

> ⌨ *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/ eextension/?p=74#oembed-1*

Transcript

Basic Introduction

Hello Friends. In our previous discussion we were discussing about the e-Extension initiatives of State Agricultural Universities. And we could observe a range of services that are being offered by the State Agricultural Universities, which are location specific, region specific and in the regional language. In this particular discussion we will be taking up the issue of e-Extension initiatives which are launched for the allied sectors of agriculture. As we have already discussed in some of our previous discussions. Allied enterprises of agriculture are playing dominant role in strengthening the economy of the farmers.

So until and unless the allied sectors are becoming strong and directly they are dependent on the outputs of agriculture. So once they become strong, so that gives additional strength to the farming community and that is how they can strengthen their agricultural practices also. So there is a symbiotic relationship between the

agriculture as well as its allied enterprises. So that is why due emphasis should be given on the allied sector also. In that series, so now we will be discussing some e Mediated extension efforts in the allied sectors of agriculture.

e-Pasuhaat

The concept of e-Pasuhaat. So which was the web portal of Ministry of Agriculture & Farmers Welfare, Govt of India under the Dept of Animal Husbandry, Dairying and Fisheries.

Aims and Objectives

So basically this particular e-Pasuhaat aims at,

1. To provide e-trading support for the farmers for livestock germplasm and related services. Maintenance of the germplasm and when it is required for artificial insemination. Providing this germplasm is one of the important issue. So maintaining the pedigree is another important issue, which are being done with the help of this e-Pasuhaat.
2. Then this e-Pasuhaat is intended to connect the farmers with the breeders of Central, State, cooperative as well as the private agencies. So the breeding aspects are very very important in case of animal management. So that is why the regional, the local, State level as well as national agencies are coming on a common platform with the help of this e-Pasuhaat.
3. Then real time, authentic and certified information on availability of germplasm is there because this portal is being managed by the Govt of India.
4. Then centralized repository of information of Central as well as the State Govts. So this purpose is also being served with the help of this e-Pasuhaat.

Pashu Poshan

So another e-Extension effort by the National Dairy Development Board known as the Pashu Poshan. So they launched this mobile app for recommending balanced diet for cows and buffaloes. If you

look into the cost of production of milk, specially in case of animal husbandry. 70% of the cost is on its nutritional management and the feed management. So under such circumstances you can imagine the importance of giving a balanced diet to the animals. So that is how this particular app is going to help the farmers to design their nutritional packages for the animals.

Farmers should provide the complete animal profile like the breed, age, milk production, the fat content in the milk; apart from the food items being currently fed to the animal along with their cost.

So based on this basic information, the app is going to recommend you which are the combinations that you need to follow, and what is the quantity that is to be fed, maybe in the morning, afternoon, evening. Like that it gives you the complete information related to the nutrition.

Right now more than 5 crore farmers are the subscribers of this Pashu Poshan app of NDDB. So this is an indicator that how popular these initiatives are.

ICAR—CIRB Bhainsa Janan

Then coming to the Central Institute of Research on Buffaloes, which has come out with the Bhainsa Janan. So app related to the buffalo reproduction.

- To impart the knowledge for buffalo owners and guiding the veterinarians.
- So this particular app provides the basic information on different areas of buffalo reproduction.
- And the major areas covered include,
  o Targets of reproduction
  o Puberty
  o Sexual maturity
  o Heat symptoms
  o Breeding methods
  o Pregnancy diagnosis
  o Peripartum care

o Then bull selection

o Management for the breeding purpose

All these are the priority areas of this particular app of CIRB, known as Bhainsa Janan

m-Krishi Fisheries

Then coming to m-Krishi Fisheries. So fisheries is another important sector. India is having the vast coastal region of around 5000 kms. So which makes this particular enterprise very profitable enterprise.

The app which was developed by the Tata Consultancy Services in collaboration with the Central Marine Fisheries Research Institute(CMFRI) and

The National Center for Ocean Information Services(INCOIS). These three institutions put together developed this m-Krishi fisheries app.

So basically they try to provide information regarding the density of fish that are available in the seas, and it advises the farmers to go for fishing and where the dense population is available.

Vanami Shrimp App

Then Vanami shrimp app. Shrimp is another important aquatic enterprise. The Indian Council of Agricultural Research and this Central Institute of Brackish water Aquaculture(CIBA)has developed this shrimp app, which provides the technical support to the shrimp farmers, entrepreneurs, and the extension personnel and connects them to the scientific community. So basically the shrimp farmers they can ask their questions with the help of this App and they can get solutions for the problems what they are facing apart from the basic information that the App is already providing.

Dairy Kannada

So there are apps in the regional language also. The Dairy Kannada app which was developed by Jayalakshmi Agrotech, private sector involvement is there. So they are providing animal husbandrysupport in their regional languages, which is equipped with the high end analytics and decision support system in the

regional language. With interactive audio-video content it delivers the information by breaking the literacy barrier. Even illiterate farmer can be the beneficiary of this app because the video contents are already available in this App.

Training Calendar

Then coming to the efforts of Tamil-Nadu University of Veterinary and Animal Sciences.

- So they have developed a training calendar for the purpose of farmers, specially the animal husbandry farmers.
- Farmers can view their upcoming events in training calendar, so that they will come to know that, which types of trainings that are being organized by the institutions and whether he is eligible for those trainings or not.

Then apart from that it gives a number of other extension services to the farmers also

IVRI—Pashu Prajanan App.

Then coming to the efforts of the Indian Veterinary Research Institution, which is situated at Bareilly. So they have developed an app known as the Pashu Prajanan app. Basically this app was designed by Indian Veterinary Research Institute as well as Indian Agricultural Statistical Research Institute, New Delhi. They put together developed this app.

- So this is a ready reckoner for the graduating veterinarians, veterinary officers and livestock entrepreneurs about the reproductive problems of cattle and buffaloes and measures to treat and control them. So this particular app is an educational input for a student and it is an instrument for the professional for providing the extension services, and for the researchers so they can keep on adding the values to this.
- Then it provides the basic information on artificial insemination in cattle as well as buffaloes. So there are a number of biological issues that are associated with this

particular app. Reproduction as well as artificial insemination is considered. So this app is giving you alerts as well as information.

- So this app is available in a number of regional languages like Hindi, English, Punjabi, Assamese, Bengali, Gujarati, Tamil, Malayalam. So now we can imagine the importance of this app and the application of this app, that are being used by the farming communities.

Then coming to the Marine fish sales app and Website developed by the CMFRI (Central Marine Fisheries Research Institution), so which connects the farmers as well as the fishermen and the consumers on the same platform. This app is developed by CMFRI as I have already told. It is a multivendor e-commerce tool for the farmers.

- To facilitate the direct sale between the fisher folk and the customers. So the primary fisher folk who are catching the fish now they can directly sell their fish to the consumers with the help of this app.
- The app envisions reasonable prices. There are no middlemen which are allowed. So with this the primary producers can maximize their profits with the help of this app.

Then coming to the **Swine App**. So this app is developed to deliberate the latest technical knowhow for the farmers as well as entrepreneurs. The pork is in high demand in the society. So that is how pig farms are becoming very popular among the farming communities.

- There is lot of importance regarding the pig farming and different breeds of pigs, because of its high demand in the marke
- This particular app is giving you the information regarding the selection and breeding planfor the pig farm.
- Reproduction, management, feeding as well as housing.

- Diseases and health calendar for the pigs.

Every aspect associated with the pig farming are being provided with the help of this Swine app.

Another allied enterprise of agriculture. So which again this crop is being cultivated on the farm itself. So that is known as the silk. The **Resham Bandhu app,** even though the silk cultivation is in the limited areas in different parts of the country. But this is giving additional income to the farmers.

- This particular app is designed and developed to provide the useful information as a user friendly reliable tool for the silk farmers.
- So the issues related to moriculture, cultivation of sericulture, reeling, then human resource development and extension activities.

So all these informations are being provided with the help of this Resham Bandhu app to the farmer.

So some more Apps for the Allied sector include the,

- AASAN is the mobile based milk collection system for the societies, which facilitates the process of milk collection from the farmers by the societies.
- The Directorate of Poultry Research has developed an app providing information about the germ plasm, the technologies developed, poultry breeding, then poultry seed project, latest news related to poultry etc etc.
- Then AHD digital extension app. This gives access to the information, informative materials, reports, news, alerts and other publications related to the Animal Husbandry Dept of Govt of Kashmir
- Then the sericulture calendar is a software, which guides the farmers about the activities to be carried out in case of sericulture. So MS Swaminathan Foundation has come out with

the Pan India Fisher Friend mobile application to provide the information to the fishermen.

- Then Mushroom farming in Hindi app is also available.

So these are some of the initiatives. It is not a comprehensive list, it is only an indicative list. So this gives us the confidence that the number of such applications are available for the purpose of farmers, specially in case of allied sectors.

Conclusion

To conclude we can say that

- Allied enterprises are part of farming system, because this crop husbandry as well as the allied enterprises are having the symbiotic relationships as we have already said.
- Then allied sectors need to be recognized as an enterprise, so that, that helps the farmers as well as he can enhance his income.
- Then the allied enterprises play the key role in changing the socio-economic conditions of primary producers, because they are into providing the regular income to the farmers.

So this is in a nutshell about the e-Mediated extension initiatives for the allied sectors of agriculture. So with this we are concluding this discussion. And in the next interaction, we will be talking of the eExtension initiatives launched by the non-governmental organizations.

Thank You.

Download

PDF: e-Extension initiatives in allied sector

6-4 e-Extension initiatives of institutions – e-EXT-NGO

> ## One or more interactive elements has been excluded from this version of the text. You can view them online here: https://opentextbooks.colvee.org/eextension/?p=76#oembed-1

Transcript

Basic Introduction

Hello Friends. In our previous discussion we were talking of the e-Mediated extension efforts initiated for the allied sectors of agriculture. And how they influence the crop husbandry. What kind of relationship both these enterprises have. In this section we will be discussing about the e-Mediated extension efforts launched by non-governmental organizations. Non-governmental organizations are the organizations which are having the motto of service. And which work on no profit no loss basis for the purpose of welfare of the society.

Department of Humane (DHAN) Foundation

- So having said this, so the foundation which was supported by the Oracle group. So which is providing the ICT enabled Community Resource Centers.
- So it provides services like producing and broadcasting voice

sms's for the local communities.
- Then it supports the activity of Voice sms on livestock management. Healthy and nutritious food for women etc etc. Means for animal husbandry as well as for the women folks.
- Then they are organizing WhatsApp group for sharing the information on crop diseases, livestock diseases and pests. So being a non-governmental organization. So they are taking holistic care of the entire community, whether it is the womenfolk or men or the animal husbandry, crop husbandry etc etc
- Then they are providing the support services like online consultations for health, education, agriculture, animal husbandry, fisheries and on legal issues also.
- Then they are developing the multimedia content in local languages for educational use and for developing software for agriculture and animal husbandry services.
- Then they support the community radio stations to design and deploy radio programs also.

So these are some of the activities of DHAN Foundation, a non-governmental organization which was founded in 1997.

MS Swaminathan Research Foundation

One of the most popular NGO, that is MSSRF, which was established in 1988.

- So they launched a Fisher Friend mobile app, basically a Decision Support System for small scale fishers.
- The basic idea of developing this fisher friend mobile app is reduction in risk from livelihood asset loss in the event of disaster, which are common feature, specially for the fisher folk who go deep into the sea for the purpose of fishing. Then increased income per trip. Because every trip it involves huge amount of risk. But whether they are going to get the required amount of fish or not, it is an issue. Then resource saving of fuel. Every journey incurs huge amount of resources, so that

can be conserved with the help of this app. And the reduced number of fishing days per trip.

So these are some of the objectives of introduction of this particular app.

- It offers a package of scientific and relevant information in a single window platform, so that the fisher folk is the real beneficiary of this app, which is an initiative of non-governmental organization known as MS Swaminathan Research Foundation.
- In partnership with Oracle, they started the GIS based forewarning system on the pest attack.
- About 500 farmers in Tamil-Nadu were trained on pest as well as disease management practices for paddy as well as brinjal and jasmine.

So it is available in the regional languages Tamil, English, Telugu, then various other Indian languages also. So that the farmers are the real beneficiaries of such apps in agriculture sector as well as in case of fisheries sector.

Coming to the **Jayalakshmi Agrotech- Crop specific mobile app in regional languages**, which developed more than 20 crop specific apps updated on the regular basis.

- So the basic target group of this apps are the illiterate farmers
- Which are providing the content in audio-visual as well as in multiple languages
- It reminds on irrigation, fertigation, spray etc etc for those registered farmers
- And it provides end to end information on every crop that the farmer desires
- Then it guides to use the growth hormones, fertilizers and pesticides. The use of growth hormones by the farmers are on a very very limited scale. But with the help of such app they try

to develop that scientific temperament, and they can go for use of these things.

- Then information on allied sectors the goat and sheep as well as dairy farming are also available with the help of this app
- Then this particular app reminds you regarding the vaccination of goat, sheep as well as cows.
- Then it provides the pricing analytics as well as the break even analysis as far as the marketing services are considered.
- And on demand weather reports are also available with the help of these apps.

Digital Green

Then coming to the case of Digital Green, another non-governmental organization. We had a detailed discussion on this. So far they have produced more than 5,000 videos in 50 languages. So which are spreading the information and knowledge, which are the outcomes of the efforts of the grassroots innovators.

The AFC India Ltd which was established in 1968.

- So they have customized the farmer's training and extension and online agriculture monitoring through application of information-communication technologies at block level in the State of Uttar Pradesh.
- The services include
  o Broad based consultancies. Agriculture and all allied sectors are part of this
  o Then grassroots project implementation in rural areas, this is another priority of AFC India Ltd
  o And training as well as capacity building is another area in which this AFC is working

The technical divisions which take the role in providing services include

- Agriculture and water resources

- Natural resource management
- Socio-economic changes
- Then monitoring and evaluation of the projects as well as the efforts
- Then external consultancy
- each division is equipped with manpower, just to take care of the needs of the society.
  The **Naandi Foundation** is another non-governmental organization,
- which is serving for the purpose of Adivasi community
- So they have created a Facebook page, from where the information related to the Araku coffee is being posted. Then farmers are really exchanging their informations related to the marketing of this Araku coffee.
- And they started selling their coffee through online auction. And they are receiving 3 times more than before because of this, being part of this Facebook page for the purpose of selling of Araku.
- More than 45,000 farmers are the beneficiaries of this particular Facebook page, and their involvement into the marketing of their Araku coffee

Then **Indian Society of Agribusiness Professionals (ISAP)** which was established in 2001.

- So basically it is an NGO with the support of Microsoft
- It offers the services like the Community Technology Learning Centers
- Query redress systems
- Then Community Radio Stations

So the **Community Technology Learning Centers** were established in the remote villages in Maharashtra to provide training to the 4,500 farmers and unemployed youth.

Working on online weekly prices monitoring system of 101 herbal

as well as medicinal plants, in 50 marketing centers across the country.

They collect the information and they disseminate it among the farming community. So that now they can begin the cultivation of this aromatic as well as medicinal plants. And they can enter into the marketing of them also.

Then **Query Redress System**

- Provides solutions to the farmers queries pertaining to agricultural practices. Problems related to productivity, improvement, scientific farming as well as the technology for production to farming community.
- Then queries received by mail, by post or through telephone are responded within 24 hours. This is what is the query redressal system.
- Currently ISAP is receiving about 300 queries per day. So this is what shows the popularity of this particular services, which are being offered in the States of Himachal Pradesh, Madhya Pradesh, Uttar Pradesh. In these three states.

Then coming to the **Community Radio Stations of ISAP.**

- So it is an effective tool for communication and create platform to share experiences, perspectives, innovations. To increase the yields and reduce the labor

So basically this **Indian Agriculture Professionals (IAP) on Facebook** are also present.

1. So there are more than 2, 30,000 membership is there on this Facebook page. So basically to exchange the information on various issues related to agriculture.

Conclusion

To conclude we can say that,

- Non-governmental organizations are filling the gaps in the community by providing the services, where the government cannot reach or there is a difficulty in reaching the government functionaries. There the non-governmental organizations are taking this messages to the community.
- Then they are supplementing as well as complementing the public extension services, so that the ultimate beneficiaries of these efforts are the farmers
- Then with information-communication technology, the creative services are being offered to the stakeholders. So this is what is the unique nature of this non governmental organizations. They are working for the non-profit, but for the benefit of the society.

So this is in a nutshell about the e-Extension initiatives launched by the non-governmental organizations. In the next discussion we will be taking up interaction regarding the e-Extension services that are launched by the private sector organizations.

   Thank You.

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6-5 e-Extension initiatives of institutions – e-EXT – Pvt Sector

One or more interactive elements has been excluded from this version of the text. You can view them online here: *https://opentextbooks.colvee.org/eextension/?p=78#oembed-1*

Transcript

Hello Friends. In our previous discussion we were talking about the e-Extension initiatives of Non Governmental organizations, wherein a variety of services that are being offered by the nongovernmental organizations with the help of information-communication technologies and how the farmers are responding to those technologies, that we have already observed. In this discussion we will be discussing regarding the e-Extension initiatives of private sector organizations.

Private sector organizations are one of the important agencies, specially who are providing the input services, the marketing services and various other types of services for the farming community. Where the government is having minimum stake, there the private sector is having maximum stake. Ultimately so it is providing service also, but the only deviation is, the private sector is having the motto of profit maximization.

ITC e-Choupal

So the first such effort that we can take up is the ITC's e-choupal. So which is one of the very popular and mostly discussed initiative

of ITC, which is into agriculture sector. As we are already aware. ITC is having the agro-based products like the biscuits, atta and so many products in the market. So they need huge quantity of raw material like wheat, then soyabean and number of such products.

So just for procurement and to maintain the quality, they started the concept of choupal, wherein they are providing e-Mediated extension services totally free of cost. And at the same time they are providing inputs also to the farmers for cultivation purpose, and they are having the mechanism of buying back the product any marketing services. So all these services are being provided to the farmers in the form of a package.

So that is how the e-Choupal emerged as one of the most successful exercise in the States of Uttar Pradesh, Madhya Pradesh and in the State of Karnataka for coffee marketing. Like that they are expanding now the various things. Looking into the success of e-Choupal, they started launching SoyaChoupal in the State of Madhya Pradesh. Aqua-choupal in the State of united Andhra Pradesh, but now it is Telangana as well as Andhra Pradesh. Both the States that we can find such initiatives.

So the basic idea is, once you provide them the quality information. The farmers are into the production process. So they will be making use of those information. So only the mediation is with the help of information-communication technologies. And they are harnessing the benefits of that and they are coming out with the products as well as services. So this is in a nutshell about the ITC e Choupal program.

Tata Kissan Kendra

Then coming to the Tata Kissan Kendra, which is providing

- The agro-input services including the seeds, pesticides, fertilizers at the affordable prices to the farmers. And in addition to that they are providing the farm equipments and their leasing, then agronomic services, the bulk blending, training as well as information and so in case of agriculture as well as in allied sectors also they are providing the information.

- They provide sms to the farmers on various issues.

So this is about the Tata Kissan Kendra

Hariyali Kissan Bazaaris an institution that is promoted by DCM Shriram Consolidated Ltd, which provides the services related to

- the agricultural inputs. They provide all the agricultural inputs for the farmer such as the seeds, fertilizer, then the pesticides etc etc.
- The financial services are also being provided by this DCM Shriram. Access to the credit, then insurance, then various banking services to the farmers.
- Then the market linkages are also being provided to the farmers in the form of maybe the buyers or the sellers etc etc.
- Warehousing as well as commodity exchange services are also there
- Then they send the messages to the farmers on the cultivation, marketing, processing etc etc aspect.

Then the **Skymet Weather** is a

- private organization which is meant for the weather forecasting.
- They offer accurate weather predictions and release the related data frequently and the faster rate
- Then Skymet also provides agro-advisory and crop statistics along with the customized weather forecast. Based on the weather forecast what are the precautions to be taken, and what are its implications on various other agricultural operations. That is being provided by this Skymet Weather

Then **AgriApp** has been launched with a motto to connect the agricultural ecosystem with the digital world. While enabling and equipping the farmers with the next generation farming techniques like "Making each farmer a digitally enabled Agricultural entrepreneur"

The services offered under AgriApp include the bio-fertilizers, fertilizers, fungicides, seeds; all the inputs that we can say. So this is how the farmers are getting the benefits of this app.

Then coming to IFFCO Kissan App. SoIFFCO services include a huge range of services that are being offered by this IFFCO Kissan app

1. In addition to the free voice messages,
2. Then the dedicated helpline for query resolution by the experts.
3. Call back facility to listen to the voice messages.
4. Then mobile quizzes and phone-in programs
5. Then focused services for groups with common interest are some of the services that are being offered by the IFFCO.

Then coming to **Agri Media Video app**. As the title is itself self explanatory

- It is an online marketing place bringing farmers, agricultural input-output as well as the farming retail as well as the fulfillment services on this online platform.
- It provides chat services for the farmers to solve their query related to agriculture with the option of uploading the images of the infected crops, so that the experts can revert back with a solution.
- Farmers can easily chat with agricultural experts and discuss their problems, so that they can have the online solutions for the problems what they are facing at their individual level.
- Then provides videos related to agricultural practices, new technologies, successful farmers, the success stories, then the rural development, agricultural news etc etc.
- So as on date more than 10,000 farmers are the beneficiaries of these efforts.

Then coming to **AgroStar Agri-Doctor**

- So which is an initiative of ULink Agritech Pvt Ltd.
- It is India's foremost agritech startup working on the mission of helping farmers to win by providing complete range of agri solutions at their finger tips.
- Technology platform provides a combination of agronomy advice coupled with service and agriinput products that enable the farmer to significantly improve their productivity and income.
- Currently operates in the States of Gujarat, Maharashtra and Rajasthan. More than 5 lakh farmers are the beneficiaries of this AgroStar Agri-Doctor.

Then coming to the **Kisan Yojana (Kisan Yojana android apps)**

- It provides the information about all government schemes to the Kisan. So the major problem with the farming community is, as on date there are more than 140 schemes(8:01)related to agriculture that are implemented by the Union Government. But if we ask even the expert, so how many of the programs that they can count. So that number may go up to 5, 10, 15, 20. But beyond that it is very difficult to recall the names of various schemes that are launched by the government. So that is why this Kisan Yojana android app is listing all these government programs launched by the government under one platform.
- It commutes the information gap between the rural people and the govt. So even the people living in the rural areas are the real beneficiaries of this.
- It also provides the schemes of the State Govt in addition to the Union Govt.
- This mobile application also saves the time and travel expenses of the beneficiaries. As on date more than 50,000 farmers are the beneficiaries of this App.

Then **KrishiWorld.com** is a private blog

- To educate the farmer with the latest agro information. And to use new techniques to solve the inflexible farming problems. So once you enter into this thing. So that a knowledge repository is there, so that you can be a beneficiary of that.

Then coming to an organization known as **Farm Bee**

- So it is an app with less memory and easy user interface.
- It is available in 10 different Indian languages. The language barrier is broken here.
- Then it provides information at every stage of the crop life cycle.
- So the farmer can choose more than 450 crop varieties and more than 1,300 markets and 3,500 weather locations. So this is what is the range that Farm Bee is having. So that each and every farmer in different situations in the Indian context are the beneficiaries of this.
- It also provides the Mandi price and the weather forecast. So this is what is the information what the farmers want primarily. Their marketing related information and their farm based providing.
- About 0.5 million farmers are using this app

Then coming to **AkashGanga**

- Shri Kamadhenu Electronics Pvt Ltd (India) is providing this service of AkashGanga in case of dairy sector since 1996.
- It offers integrated solutions for Automated Milk Collection Centers. So the milk producers as well as the cooperative societies are the real beneficiaries of this.
- More than 8750 automated milk collection centers are getting the benefits of this
- The quality based payment system for the milk producers is the application that it is providing. So that it is acting as a ready reckoner for calculating the price of the milk and

farmers are getting the benefits of that.

Then coming to **MyAgriGuru app**

- It helps farmers to know and understand their crop in a more comprehensive manner.
- The farmers can send crop images to MyAgriGuru for a speedy resolution by the agriculturalexperts, who are sitting at the other end looking into these photographs. They can analyse and they can send the solutions.
- The success stories, the latest technologies and best practices related to the crop are uploaded on this app, so that farmers can get motivation and they can learn from the experiences of other farmers.
- Then weather condition and market prices are also being provided with the help of this app.

AGRIWATCH.com is a customized agri commodities research based organization. It has a network of more than 5 lakh farmers and 25,000 traders. This number itself gives us the volume of the business that these people are, these organizations are doing. And the number of beneficiaries that we can think of. So it is providing the services which include

1. The value chain studies
2. Sub-sector studies
3. Then the consumption studies
4. And the crop surveys which are very very important for the farmer

- Pre-sowing study of the farmer's sowing intentions, so that they can suggest based on the survey.
- Then study of crop progress during the crop growth phase. So that they can provide you all alternative mechanisms as well as the control measures for protection of the crop.
- Then harvest estimation and yield studies accordingly you can

plan for marketing, as well as you can think of doing business from these harvests.

- Then production estimates based on the studies which helps you to take the appropriate decision in trading your produce.
- Then satellite mapping and modeling, so that you can protect the crop from the various number ofvagaries.
- Then price forecast based on the time series modeling, so that the farmer can take the better decision in selling his produce.

Conclusion

To conclude, we can say that

- Private sector is more aggressive in delivering e-Mediated extension services. Because the primary motto of the private sector organization is profit maximization. In the process of profit maximization of this private sector. So that is indirectly helping the farmer because they are providing the quality services and they are providing the quality inputs. Ultimately the farmers are going to benefit out of that. And it also motivates the farmer to translate himself from mere producer to be a trader.
- Since the motto is profit maximization, the farmers can harness the potential of the private sector for their benefit also.

So with this we are coming to the conclusion of this topic, that is the e-Extension initiatives of the private sector

Friends with this we are coming to the end of this 6 week course. So after this you will be having a Quiz. So I hope you enjoyed this course. Still if you have any questions, I welcome you again to post your queries on the Forum, so that you will get the response from the course instructors. And at the same time if you have any innovative things to share, any experiences that you want to share. So that can add to the knowledge base of the entire learning community as well as your course instructor. So that yo can be a

part of this e-Mediated learning and exchange of ideas, activities also. I hope enjoyed this course, and we will meet again and again.

Thank You.

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