

A CONCEPTUAL STUDY ON SCOPE OF PARTICIPATORY DEVELOPMENT COMMUNICATION IN PROMOTING SUSTAINABLE AGRICULTURE IN INDIA

Pratima Mutyala

Jain Deemed-to-be University, Bangalore, pratima.vishnu@gmail.com

Abstract

Agriculture is one of the most important economic activities for any nation to have self-reliance and food security. Indian agriculture has unique challenges given its geographic, social and demographic variations and farming practices that tie deeply with local culture and rituals. Environmental sustainability is now a central discourse in all aspects of socio-economic development as we witness the growing adverse impact of climate. Governments and policymakers all across the world find it hard to accommodate the Millennium Sustainable Development Goals while trying to feed their growing population. A possible solution lies in large-scale adaptations of innovative farming practices that compromise neither on yield nor on the sustainability of the land. The challenge lies in trying to change traditional agricultural practices that have been used for thousands of years, which fall in the domain of behaviour change through development communication. This paper focuses on using the participatory form of development communication to help in establishing an ecosystem of integrated farming. Agricultural extension and its messaging need to be modified to imbibe the values of sustainable farming along with the dissemination of innovative technology and inputs for farming. The paper uses conceptual analysis from different sources of secondary literature to propose a set of key messages and themes around which extension workers can create a dialogue with farming stakeholders. Adapting these communication approaches may help in creating an essential connection between rural and urban aspects of Indian agriculture.

Keywords: farming practices, SDG, participatory development, integrated farming, communication approach, economic sustainability

Introduction

Access to a nutritious diet is a universal human right, and the food security of a sovereign state is one of its key strategic assets. India in her early decades of independence from British rule had a rather difficult phase coping with food production to feed its population. Keeping a singular focus on increasing yield and productivity per hectare, the 'Green Revolution' brought in the much-needed boost to our economy and morale as a newly independent nation, but caused irreversible damage to the ecosystem. (Shiva, 2016). This approach was followed by most developing economies in the 1960s-1970s, resulting in undesirable consequences for the entire biosphere in the South East-Asian region. As nations awaken to the responsibility to save what has been destroyed, the onus of producing food sustainably falls on the global farming community, agricultural leaders, scientists, experts, and policymakers. One crucial component in this process of sustainable food production that connects and catalyses all other stakeholders, is multilateral communication.

In the Indian agricultural scenario, extension is a highly structured communication process mainly aimed at technological knowledge transfer from 'experts' to the farmers. It is essentially a top-down communication following the 'diffusion of innovations' approach (Rogers, 2003) that worked well for the green revolution era as it enabled policy and technology implementation at the grassroots levels. Communication for agriculture today has to move beyond just educating farmers. It has a significant role to play in bringing a shift towards sustainability and coping with the new challenges of food systems today. This paper attempts to highlight a few major challenges to the implementation of sustainable agricultural practices in India, and how the participatory development communication approach towards farming communities can provide solutions to some of these.

Background of the Study

India is one of the top three food grain producers in the world, with a grand official figure of 264.8 million tonnes in the year 2013-14. The country is self-reliant in most food grains and has the distinction of being the largest producer of milk and pulses. According to the data given by the Planning Commission for the year 2014 nearly 50% of its population is engaged in agriculture and related activities, and this sector contributes to about 20% of our National GDP. One would assume that the farming community of such a progressive agriculture-dominated economy is financially stable. But data from the Report of National Statistical Organization's Situation Assessment Survey on Agricultural Income for the period Jan 2019 to Dec 2019, showing 50% of agricultural households in debt paints a different picture. Despite being the world leader in food production, India's share in world export markets for agricultural commodities is a meager 2.1% in the year 2019 (Press Bureau of India, 2019) mainly due to chronic issues like excessive dependence on rainfall (around 60% of the net sown area), low capital to labour ratio, and high incidence of poverty and inequality (Singh & Shishodia, 2016). Apart from these, there are newer challenges to resolve like micronutrient deficiency and poor soil health, nutrition deficiency in foods produced, lack of marketing and business solutions for the agriculture industry, and high wastage of food.

The concept of Sustainable Agriculture finds its origins in the World Commission on Environment and Development Report titled '*Our Common Future*' (1987). Agriculture is a key resource and input for most of the industrial production, it is pertinent that sustainability as a principle is adapted and imbibed in this process first. Though many cultivators today are aware of the consequences of environmental damage, they do not see practical solutions for changing over to sustainable methods. Agricultural Extension services that are commonly used for educating and informing farmers also do not place sufficient emphasis on sustainability as a key factor in Best Farming Practices.

Practices of sustainable farming, unlike the more technology and science-based innovations, do not require infrastructure, materials, and investment. In the majority of cases, a genuine effort put into communicating the idea of why sustainable practices are better than traditional methods would suffice. However, this communication requires planning, groundwork, and most importantly participation by the local farming communities. The use of Participatory Development Communication approaches in designing and delivering extensions for sustainable farming can prove to be the missing link in achieving Sustainable Development Goals (SDGs) by the year 2030. This is the central idea propounded in this paper, along with recommendations for implementation at the grassroots and policy-making levels.

Objectives and Methodology

This paper is a conceptual study to explore the application of development communication strategies to promote sustainable farming in India. The main objectives are:

- To explain the importance of adopting sustainable farming in present times
- To identify challenges that prevent sustainable farming to be taken up, especially by small landholders
- To analyse how concepts and methods of participatory communication can improve the situation and find solutions.

The paper uses the qualitative approach of conceptual analysis. Using a literature review and secondary sources of reliable data, the author has presented key themes of communication that can be used to reach out to the beneficiaries. These themes are then mapped to suitable options of media that can help in making the effort participatory and effective.

The Past and Present of Agricultural Extension in India

Extension as a practice of the elder and experienced farmers educating the next generation on how to till the Earth has been part of the Indian farming system since ancient times. A modern extension has its origins in the pre-independence era of experimentation and field demonstrations, but the process

began in the right earnest in the year 1964 with the Indian Council of Agricultural Research (ICAR) beginning National Demonstrations, followed by the Training and Visit (T&V) system started in 1974. Maunder (1972) defines extension as a “service or system which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting the social and educational standards of rural life.” As extension evolved and spread to the developing nations, it was realized that mere instruction in new techniques was inadequate to improve the farming process and the livelihood generated by it. Mosher (1978) has noted that in the case of developing countries, farmers are not necessarily resource-poor, but often lack access to one or two critical inputs that cut down productivity. Hence according to him, the role of extension agents is not only to train and teach farmers about new and better methods of farming but also to help them get access to essential farm inputs like seeds, fertilizers, credit, etc.

In earlier times, extension simply meant the application of scientific research and innovative approaches to agriculture through farmer education. Today extension services, especially those run by non-government agencies, cover a wide gamut of communication, training, and motivational activities for the farming community. This is much relevant to sustainable agriculture because it requires the assimilation of knowledge about various disciplines like environment, soil assessment, water management, biological pest control, marketing, and health studies. Skilled communicators and trainers convey these concepts to the farmers in an easy-to-understand language and also help in implementing the same in farming practices.

In India, the concept of extension historically included both education and services in the past. The following observation of the Report on Organising Agricultural Extension in India (Department of Agriculture, Government of India, 1970) makes interesting reading:

“The dichotomy between extension (education) functions on the one hand, and supplies and services function on the other, is largely artificial in the Indian situation. Educating the rural community in techniques designed to bring about better living is no doubt the primary objective of extension, but the educative process itself is unlikely to succeed in the long run unless its relative efficiency can be demonstrated and it is guaranteed that the adopter shall have no difficulty whatever in implementing it. The process of change has to overcome the drags of traditional social structure, and these drag frequently are the financial, supplies, production, distribution, and marketing (in brief economic) arrangements in the society. Resistance to change derives much of its strength from the inconsistency between these arrangements and the contemplated innovation.”

A critical analysis of the different definitions will reveal the following common elements (Roling, 1988):

1. Extension is an educational process that aims at voluntary change.
2. Extension is an intervention deployed by an institution.
3. Extension makes use of different communication channels and teaching methods.
4. Extension focuses mainly on the promotion of presumed collective or public utility, rather than some private interest.

The following definition as given by Roling (1988) encompasses the above common elements: Extension is a professional communication intervention deployed by an institution to induce change in voluntary behaviour with a presumed public or collective utility.’

Axinn (1988) has identified the participatory extension approach as one emphasizing the formation of farmers’ organisations and groups such as self-help groups and the need for learning from farmers’ wisdom. Farmers are involved not only in decision-making related to programme planning and implementation but also in controlling it locally

The job of an extension service worker is slightly different from teachers in adult literacy, health awareness, and similar campaigns. Here the farmers already know their farms and methods of farming, sometimes even better than their trainers. The objective is to unlearn old practices that can cause long-term damage to the land’s productivity, and learn new methods to improve the natural resource base i.e., soil, water, seeds, etc. Hence the communication should be interactive, based on mutual respect and trust among the trainers and trainees.

Commonly used methods of agricultural extension are face-to-face interaction, and the use of Information Communication technology like mobile networks, audio-visual mediums, and the Internet.

Sustainable Agriculture – Issues and Perspectives

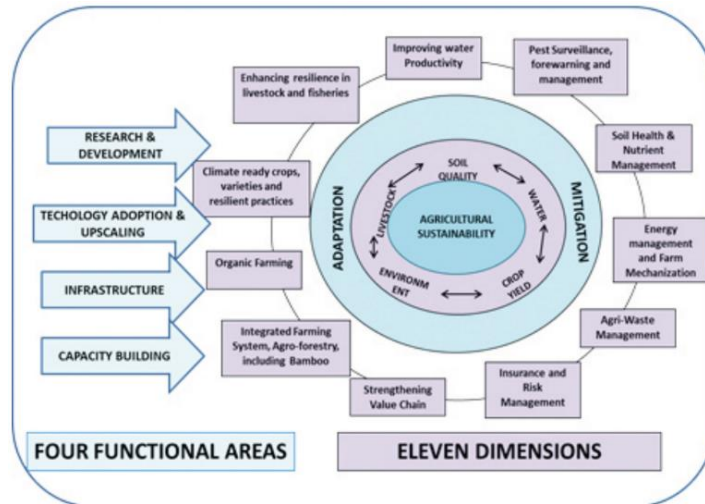
It is interesting to note that despite profound differences in geographic conditions, climate, choice of crops, and social and cultural factors, the story of the small-scale Indian farmer is similar throughout the country, maybe with a few exceptions in the wheat belt of Punjab and Haryana. After the tremendous boost received by this crucial sector in the form of the Green Revolution, there seems to be a prolonged period of stagnation that has seen declined yield, reduced soil fertility, and a deep financial crisis among farmers, especially among the ones holding small farms. Government policies at both state and central levels have tried hard over many years to improve yield and income levels for such farmers, but none seems to have achieved that goal in a satisfactory measure. The worst sufferers are the individual farmers whose livelihoods and even daily diet depend entirely on what grows on their piece of land.

The Green Revolution era taught them to farm their lands by pumping in heavy amounts of fertilizers, and pesticides and extracting the maximum possible yield from their piece of land. Even the majority of farm cooperatives and government-supported institutions like retail shops advocate the same methods by subsidizing chemical inputs. But the inputs still do not come cheap, for which farmers are forced to enter the vicious circle of debt and repayment to local money lenders. The irony is that even these measures do not give them the expected results. ‘The land is not what it used to be’ is one of the oft-quoted phrases in farmer interactions.

Adaptation of Sustainable Agriculture practices, backed by participation in a community provides a feasible alternative to many of these issues, and this needs to be emphasized in extension communication. Sustainable Agriculture, coined by Australian Agricultural scientist Gordon McClymont means ‘*an integrated system of plant and animal production practices having a site-specific application that will last over the long term*’. It is a philosophy, a way of life that asks the farmer to treat the land as an organism and take from it only that much that can be replenished naturally. When the land is allowed to breathe and replenish, it gives back much more than what the farmer puts it. Methods of sustainable agriculture tackle the major causes of agrarian crisis namely farmer debt, crop failure, declining yield, and increasing cost of inputs. In the Indian rural setup, the best way to implement the concept is by making an entire community committed to farming their lands in this way, and helping out each other.

A shining example of the successful adaptation of sustainable farming is the Community Managed Sustainable Agriculture (CMSA) in the state of Andhra Pradesh, initiated by the State’s Rural Development Ministry in the year 2004 in selected districts. With the help of NGOs and the World Bank, similar projects can motivate small-scale farmers to shift from input-intensive to knowledge-intensive farming. The demonstrated results in the CMSA Project results are remarkably positive, with benefits for the participant farmers including increased yields, improved health, and a life free of debt to start with.

The government of India through its various agencies is putting in all efforts to create and nurture more of such self-sustaining environment-friendly initiatives in agriculture. The following figure gives a glimpse into that direction.



NMSA Strategy Document (2018-2030)

Figure 1: Schematic diagram for National Mission for Sustainable Agriculture, GOI
 Source: www.agricoop.nic.in, Annual Report 2021

Sustainable agriculture has three broad forms of expression, namely ecological sustainability, social sustainability, and economic sustainability (Ossewaarde, 2018). Ecological sustainability covers soil management, water management, renewable and non-renewable resources used as inputs into farming, and animal health. Social sustainability refers to acceptance, inclusiveness, and trust among participants in the community. The third form, economic viability refers to income security, food security, and optimal profits in the long term. Any rural project seeking to make sustainable farming a way of life for the community needs to address all three forms with equal attention.

Challenges to Implementation of Sustainable Agricultural Practices

Adapting a sustainable approach to farming is a long-term process that requires perseverance and the ability to withstand low returns in the initial stages. For many small farm cultivators, this risk-taking ability is a deterrent as farm income is a question of basic sustenance and survival. Extension workers promoting sustainable farming methods need to address apprehensions, questions, and assumptions with clarity and sincerity. Though there is demonstrated evidence of community-based sustainable farming projects having high success rates in many districts across India, there are common challenges to expanding them in new areas and maintaining them in existing areas. Let us look at some of these.

Challenges to initiating the sustainable agriculture model:

- **Institutional structure:** Agriculture in India is taken care of by the respective State Governments. Institutional support or the lack of it can make a significant impact on the choice of farming methods. Credit and lending facilities, incentives for adopting sustainable farming, improved market access and higher support price for crops grown sustainably are some of the ways in which institutional support can be materialized. An example of a positive initiative in this direction is the setting up of Agricultural Technology Management Agency (ATMA) at the district level in selected states. ATMA, funded by the World Bank through National Agricultural Technology Project, functions as a Registered Society comprising important stakeholders in the agricultural activity of a district, aimed to disseminate technology and resources in the form of extension services towards adopting sustainable agriculture practices. The main idea is to have the structure small enough to work at the community level, and yet strong enough to implement the methods of Sustainable Agriculture rigorously.
- **Seeking Voluntary Participation by all farmers in a community:** The entire sustainable agriculture model is a voluntary concept, so the workers, as well as the farmers, are all volunteers, getting involved in whatever capacity they wish to. The structure and organization, roles, and responsibilities of participants may be allocated democratically or by discretion,

whichever option is acceptable to all. The organizational structure, as well as the functioning of the institution, should be horizontal, decentralized, open-ended, and transparent.

- **Creating a knowledge resource system:** Sustainable Agriculture is a knowledge-based farming system comprising internal and external sources. Internal knowledge is what the farmers may have learned from their elders like preparing bio-manure from plant and animal waste, methods of water conservation and storage, etc. This knowledge was kept aside as the farmers were drawn to the yield-maximizing methods of the Green Revolution. Tapping this resource and developing the tacit knowledge into usable standard farming practices is a big challenge. External sources comprise agricultural experts and scientists from educational and research institutes. Their research needs to be taken to the fields in the form of easy-to-understand lessons to the farmers, a job tailor-made for extension service.
- **Social acceptance and sustainability:** Rural communities are often deeply divided on the basis of caste, creed, religion, and occupation. Since sustainable agriculture goes beyond the main farming activity, including supportive activities like making bio-manure, setting up NPM (Non-Pesticide Management) shops, animal rearing, etc., it requires the cooperation of everyone in the village. This can be achieved when villagers perceive two important attributes of the sustainable farming model, namely inclusiveness and fairness being present at every step. This is a task that requires specialized communication efforts.
- **Inclusion of women:** Active involvement and participation of women in the community are important for the success of any rural community project. Most women are either farmers themselves, or actively support the men of the household in the farming process. Many are involved in peripheral activities related to farming. The involvement of women in the decision-making, execution, and management of the project makes a big positive impact on its acceptability and smooth operation. Hence their cooperation must be actively sought by the volunteer workers, again through effective and persuasive communication.
- **Monitoring:** It is imperative to regularly check the progress of participants and make sure that they do not go back to old practices mid-way, either by force of habit or by the temptation of short-term gains. The commitment of participant farmers to stick to sustainable practices only must be validated and encouraged from time to time.

Participatory Development Communication and its Application to Community-based Sustainable Agriculture

From the discussion above, we can identify a few common threads that connect the concept of sustainable farming. First, this activity and its success almost entirely depends on community support. Many of the challenges in initiating the switch from traditional to sustainable farming methods, and expanding to newer areas can be effectively resolved by using the development communication approach.

Development Communication is a systematic usage of communication in support of community development. It aims at sharing knowledge and skills, imparting ideas, cultivating productive attitudes, and motivating stakeholders on the ground level to resolve a specific issue or to improve the existing condition of a community. There are two main approaches to using development communication:

1. **Extension The 'Diffusion of Innovation' Approach.**

The communication efforts in this form are mostly top-down, emanating from experts or authorities, and reaching, hopefully to the beneficiaries. This is the most commonly used methodology for almost all development projects, but not the most effective. The diffusion approach is useful for the dissemination of scientific concepts, new ideas, skills and products, but how well these are actually adapted by the beneficiaries remains doubtful. Rarely does the process of diffusion start with the need for analysis of the given community at the grassroots level. In many cases, the community's decision to accept or reject a new concept depends on the needs of the 'innovation adopters' or 'opinion leaders', who may be a handful of affluent landholders. The approach is criticized for creating knowledge gaps among different sections of the audience, due to varying degrees of exposure to the directive communication.

2. Participatory Development Communication Approach.

This approach to development communication begins with the voices of community farmers being heard, acknowledged and included. The process of communicating begins with analysing problems at the ground level, listening to opinions, and promoting open discussions on all issues. The extension workers can act as mediators, initiators and organizers of forums of open discussion among all interested stakeholders, including women. The ideas generated are then taken up for decision-making, proposals and policy formulations. Since these are ideas rooted in the community, it takes minimal effort to ensure their acceptance and compliance.

A majority of extension communication strategies used in agricultural communities today use the diffusion approach to inform the population about the projects, illustrating the advantages of the tasks at hand. The inclusion of a participatory approach can allow them to apply their ground-level experience to make the project a success. For example, to create awareness and interest in sustainable farming, communication media like posters, pamphlets, radio, and television can be designed at the village, Block, or District levels. Including people in the process of creating communication will maintain the cultural identity of local communities and positively impact the chances of the message being understood and accepted.

Hence the process here is *not merely inclusive of, but largely emerging from*, the traditional 'recipient' of communication.

Extension workers and officers must develop participatory communication media and systems to promote sustainable farming. Farmers should be given the right to decide whether to accept or reject the proposal, but this should be based on rational well-informed thinking. Technological advancements, on and off-field demonstrations, etc. should cater to their requirements, including training, funding, and administrative support to carry on sustainable practices.

Following are some of the central themes in the form of commonly asked questions in a community discussion.

- What is sustainable farming? Why should I adopt it?
- How will it affect my income? Will it help me grow more, and save more money?
- What about my poultry and cattle farming activities? Will these be incorporated in the new farming system?
- Can it improve the fertility of my land? Will multiple crops throughout the year be possible?

Along with these, farmers may have questions on methods of sustainable practices like soil replenishment by crop rotation, irrigation, water conservation and storage, use of bio-fertilizers, bio pesticides, and natural methods of pest control (NMP). Mentioned below are the suggested media options to convey these themes, for which the extension workers should get adequate resources and training.

- Interpersonal Communication: Face-to-face meetings, personal visits, counselling and consultations
- Group Communication: Village meetings at the Panchayat level (Gram Sabha), discussion forums among volunteers, informal social gatherings like festivals, weddings etc.
- Mass Media: Print – posters, banners, pamphlets, booklets for dissemination of scientific knowledge, technology and farming methods. Community Radio - for informative, motivating and persuasive communication. The content may be produced by the community members externally or presented with the participation of community members. Audio Visual Media – videos made by community farmers, Internet enabled media – YouTube, Social Media Platforms, etc.

Choosing the right message and the right form of communication channel depends on the local conditions and cultural factors. (White et al., 1994). Extension workers and officials should evaluate and map the appropriate media options to the relevant messages.

Conclusion

Sustainable Agriculture needs more human interaction and cooperation over one-way traditional approaches. Therefore, the right combination of diffusion and participatory approaches to extension communication should be used. The importance of agriculture cannot be exaggerated in the context of the Indian economy. Despite the fast-growing manufacturing and services sectors, farming is still the one core economic activity that feeds and gives livelihood directly and indirectly to billions of Indians. Hence it is a matter of grave concern that our farmers lag far behind their counterparts in Western nations when it comes to Human Development Indicators. The decline in the health of our farmlands too is no less alarming, considering it as a long-term threat to the nation's food security. In such a grim scenario, methods like organic and sustainable farming seem to be the only real solutions to averting an agrarian crisis in major food-producing states. India is blessed with some of the richest natural resources for farming on one hand, and with a rich pool of human resources in the form of brilliant young scientists and innovators. It is high time to make a symbiotic association between the two and improve the country's agricultural productivity as well as ecological balance.

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