

Farmers'- led extension:

Contexts, experiences and way forward

Usha Das¹ and Souvik Ghosh²

G.B. Pant University of Agriculture and Technology, Pantnagar, Udham Singh Nagar, Uttarakhand 263 145

The current phase of agricultural development aims at greater inclusiveness and equitable transformation, whereby farmers are able to reap economic benefits. The doubling farmers' income (DFI) Committee is guided by the fact that more than 85% of the farm holdings are small and marginal, and are economically challenged. To achieve income growth, there is a need for deploying scales of operation, and therefore, the need for promoting new generation farmer collectives, such as Commodity Interest Groups (CIGs), Farmer Producers Organisations (FPOs) – both as Cooperatives and Companies and Village Produce Organisations (VPOs). Farmers' led extension approach has been successful in different parts of the country and complement public led agricultural extension for improving farm income and livelihood.

Key words: Agriculture Extension, Farmer's led, KHBP, MDKU, *Pani Panchayat*, Production led

EXPERIENCE over the last twenty years has fueled debate concerning the role of public sector Agricultural Extension and most significant shortcomings of it are mentioned as (a) unresponsiveness to the variation in farmer needs, (b) lack of ownership by the intended beneficiaries, (c) failure to reach poor and women farmers, (d) limitations in the quality of field and technical staff, and (e) high and unsustainable public costs. If Extension is to meet the diverse needs of modern farming, a fundamental change of approach is called for toward educating and enabling farmers to define and solve their own problems and determine and take some responsibility for the extension services they require.

Views on Extension have changed from an agency of technology dissemination with emphasis on agricultural production to helping farmers organize themselves, linking of farmers to markets and providing environmental and health information services. Extension is viewed as a part of agricultural innovation system - AIS.

In the changing situation, farmers need to transform themselves from mere producer-seller in the domestic market to producer cum seller in a wider market sense to realize good returns on their investments, risks and efforts. In order to achieve this goal, farmers need to know answers to questions like what to produce, when to produce, how much to produce, when and where to sell, at what price and in what form to sell their produce. Farmers have received most of the production technologies from the extension system. The Extension system needs to be oriented with knowledge and skills related to the market. This revamping of Extension system will certainly play a catalytic role for ushering in farmer-led and market-led extension in India.

Paradigm shift in agricultural extension system

The combination of Green Revolution technology in the late 1960s and Training and Visit (T&V) system in the mid-1970s enabled India to achieve food self-sufficiency

during the 1980s. During 1990s, the Indian Extension system was at crossroads after withdrawal of World Bank's support for implementation of T&V system. Thus, a new decentralized extension approach i.e. Agriculture Technology Management Agency (ATMA) by integrating the functions of key stakeholders involved in agricultural development in the selected districts was pilot-tested under innovation in technology dissemination component of National Agricultural Technology Project (NATP). The approach was pilot tested in 28 districts spread over 7 states between 1999 and 2003. A study conducted at the pilot phase suggested that the reformed extension system contributed to increasing farm income and rural employment through agricultural diversification. During this period, average farm income across the 28 pilot project districts increased 24%, in contrast with only 5% in non-project districts. Based on the success of this pilot in the 7 states, in 2004 the Government of India has expanded this model with its own

funds across all 567 districts in the country. The revised guidelines of ATMA since 2012 have been focusing on agricultural diversification through farmers' led, market-oriented and bottom-up extension.

Although the requirements of farmers and rural families often go beyond agriculture. The technology development (research) and technology transfer to farmers (extension) are performed by two separate organizations with tightly defined and mutually exclusive roles. Such organizations also do not have strong linkage with other public agencies with allied roles in the agricultural and rural development sector. However, the goal of Extension has been moving from technology dissemination to system management, building coalitions of different stakeholder, leading the innovation agenda and building new learning organizations.

This renewed definitions and concepts of Extension multiply its potential to move beyond purely production and productivity concerns to those knowledge and information intensive, organizing clients into groups and marketing. In order to successfully address above issues and

challenges, Extension needs to look into an altogether new perspective. The farmer-led and market-led extension so far is a peripheral issue and alternative approach in today's Extension scenario. Hence, there is an urgent need to shift the paradigm of extension system from mere production-led to farmer-led and market-led extension system on end-to-end basis (Table 1).

Few initiatives of farmers'-led extension

Farmers'-led extension approach of Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri: MPKV has been implementing the novel concept of Farmers-Scientists Forum (FSF) since October, 2005. The FSF established at Central Campus, comprises 40 Farmer-Scientist Clubs (FSCs) of 1,500 member-farmers in the jurisdiction of ten districts of the university. Each FSC has coordinator and these FSCs are attached to the Colleges, Agricultural Research Stations and Agricultural Technology Schools. These FSCs function as Commodity Interest Groups (CIGs). The basic idea of formulating the FSCs is to demonstrate and to educate the farmers about the technologies generated by university at different locations. MPKV has

developed the farms of these members as a model for the village and these farmers in turn are servicing as farm leaders to disseminate the university technologies to other farmers in their area. Participatory research- extension approach is being promoted through the FSF.

Farmers'-led extension approach under Kerala Horticultural Development Programme (KHDP): KHDP conceived in 1992 to improve the overall the overall situation of fruit and vegetable farmers in Kerala by increasing and stabilizing their income, reducing cost of production and improving the marketing system. KHDP used self-help groups (SHGs) as its key concept for promoting the development of farmers and experimented with different approaches to provide better access by farmers to technology markets and credit. Every SHG selects three master farmers one each for production, marketing and credit related activities and each one of them are trained by KHDP. KHDP constituted more than two thousand SHGs, involving about fifty thousand farmers. Through group marketing farmers form their own market and

Table 1. Paradigm shift from production-led to farmers-led extention system

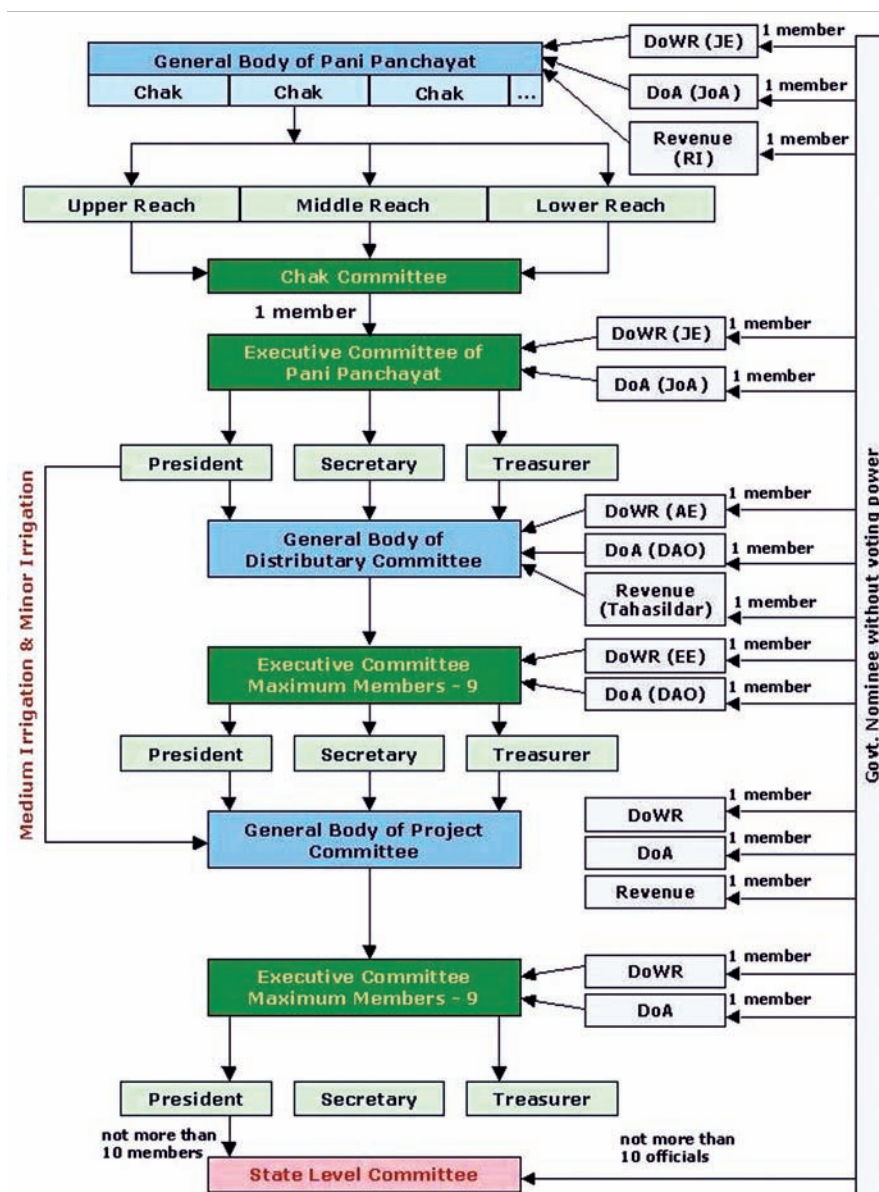
Component	Production-led	Farmers'-led
Purpose/Objective	Transfer of production technology	Capacity building (especially farmers extensionist), create para-professional extention workers, creating or strengthening local institutions
Goal	Foodself-sufficiency	Livelihood security including food, nutrition, employment to alleviate poverty, sustainability and conserving bio-diversity
Approach	Top-down, commodity and supply driven	Participatory, bottom-up and demand driven
Actors	Mostly public institutions	Pluralistic with public, private, non-government and farmers organisations as a partner rather than competitors
Mode	Mostly interpersonal/individual approach	Integration of clients oriented on-farm participatory/experiential learning methods supported by ICTs and media
Role of Extension agents	Limited to delivery mode and feedback to research system	Facilitation of learning, building overall capacity of farmers and encouraging farmers experimentation
Linkages/liasion	Research-Extension-Farmers	Research-Extension-Farmers Organizations (FIGs, CIGs, SHGs)
Emphasis	Information manegement, Production "Seed to Seed"	Knowledge management and sharing
Nature of technology	Input intensive, crop based and general recommendations as per agro-climate zone, fixed packages of information	Knowledge intensive, broad based, farming system perspective and blending with ITKs
Critical areas	Improvement, production and protection	Decision support system, integrated farming system approach, natural resource management, clients group formation and community empowerment
Critical inputs	Money and material	Access to information, building human and social capital
Accountability	Mostly government	To farmers rather than donors

Source: Kokate et al. (2009)

get traders to come and buy. KHDP contracted the state agricultural university to generate and access needed technologies for its farmers. An impact study reported a significant increase in area under fruit and vegetables in 86% of the SHGs and an increase in income in 75% of the SHGs. The same study also reported that the number of farmers availing credit increased. New institutional arrangements evolved through partnership with other organizations as evident from the KHDP that partnered with research and financial institutions, and traders to make the whole system successful. The success KHDP in supporting vegetable and fruit growers in Kerala has been due to its adoption of institutional learning as the key management tool and implementation of farmers'-led extension.

Farmers'-led extension approach through Pani Panchayat under Participatory Irrigation Management (PIM): The irrigation systems, designed top-down for hydraulic efficiency and convenience of the canal system management, lack flexibility and are becoming increasingly incompatible with present agricultural system, which is intensively and diversely cropped and is posing water demand sharply targeted in terms of time, amount and locational accessibility. An unpredictable water supply encourages top-end users to take more water than they actually need in order to protect themselves against any future uncertainty of water supply. This leads to the waste of water resources and increase in inequity within the same unit of command area. It is perceived that adequate operation and maintenance requires involvement of farmers and organised farmers group activity can manage the systems.

As a result of the debate over non-performance of publicly supplied irrigation system in early 90s, PIM and IMT have been advocated as a solution. On the concept of peoples management of developmental infrastructures that requires local solution to local problems affecting them, the National Water Policy of



Chak (Outlet), Pani Panchayat (WUA), DoWR: Department of Water Resources, DoA: Department of Agriculture, RI: Revenue Inspector, JE: Junior Engineer, AE: Assistant Engineer, EE: Executive Engineer, JoA: Junior Agriculture Officer, DAO: District Agriculture Officer

Fig. 1. Structural arrangements of WUA/Pani Panchayat in Odisha

Government of India of 1987 and 2002 stressed on farmers participation in irrigation management. Accordingly, several states (Andhra Pradesh, Odisha, Maharashtra, Madhya Pradesh, Gujarat, etc) in India have been implementing PIM and transferring the irrigation management to water user association (WUA)/Pani Panchayat (water council) with a view to providing equitable, timely and assured irrigation. This programme envisages making farmers to water resources planning and management and agricultural activities in the jurisdiction area. The structural arrangements of WUA /

Pani Panchayat (Fig. 1) indicate the involvement of both irrigation and agriculture department to facilitate proper planning of irrigation and agriculture in the irrigation command.

WUA/Pani Panchayat has been successful in devising and enforcing the rules for water distribution, fee collection and conflict resolution. Farmers perceived improved water distribution, increase in cultivated and irrigated area, shift to higher value crops and increased yields as per the common findings under various impact studies in Andhra Pradesh, Tamil Nadu, Maharashtra and Odisha. Water forms the

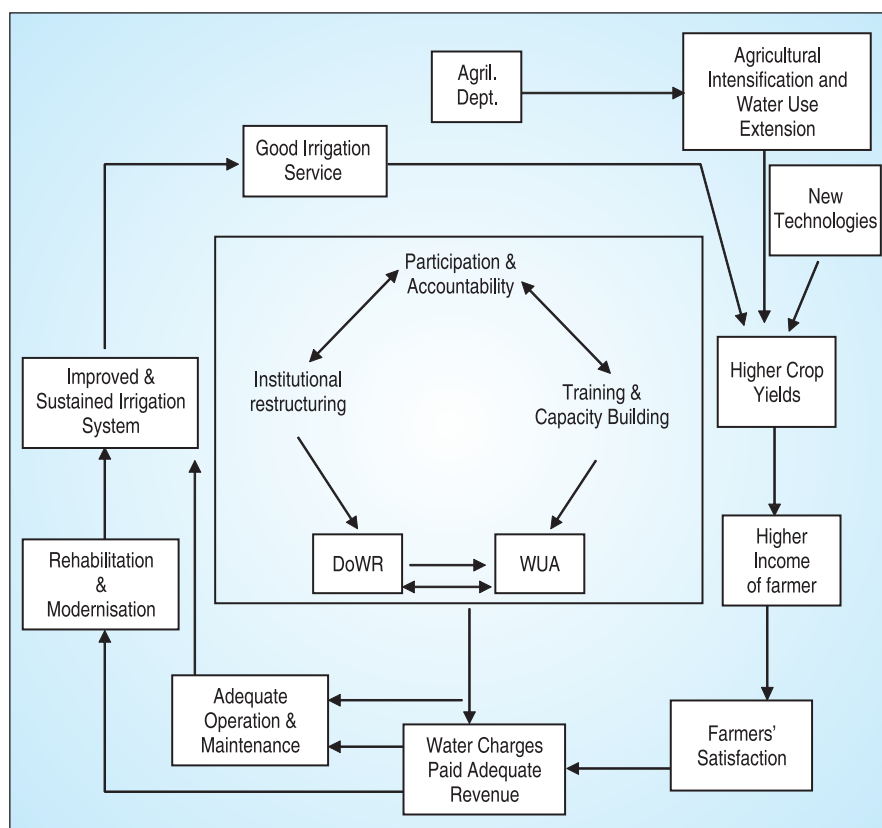


Fig. 2. Virtuous circle of irrigation and agricultural sector in irrigated areas

are influenced by the effectiveness of local level institutions like user groups. Integrated watershed management programmes (IWMP) is launched by Ministry of Rural Development with objectives to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcomes are prevention of soil run-off, regeneration of natural vegetation, rain water harvesting and recharging of the groundwater table. This enables multi-cropping and the introduction of diverse agro-based activities, which help to provide sustainable livelihoods to the people residing in the watershed area. In addition, there is a scheme of technology development, extension and training (TDET) is also being implemented to promote development of cost effective and proven technologies to support watershed management. Till

backbone for all the future endeavors to achieve the vision of food security. Capacity building will play a pivotal role in translating the vision into reality. This approach follows farmers' led extension through WUA / *Pani Panchayat* as most appropriate institute for efficient water management and agricultural development in the irrigated areas. This farmers' led extension process through an effective institutional linkage mechanism will pave the way for creating virtuous circle in irrigation and farm sector (Fig. 2). Therefore, it has the potential to improve the irrigation intensity and efficiency resulting into increased productivity and shift to high value crops thereby becoming a game changer for enhancing farmer's income in irrigated areas.

Farmers'-led extension approach through Farmers Groups under Integrated Watershed Management Programme (IWMP): Integrated watershed management for efficient water harvesting and restoration of degraded lands are needed to enhance productivity of rainfed ecosystem. Creation, utilization and maintenance of water resources in the watershed

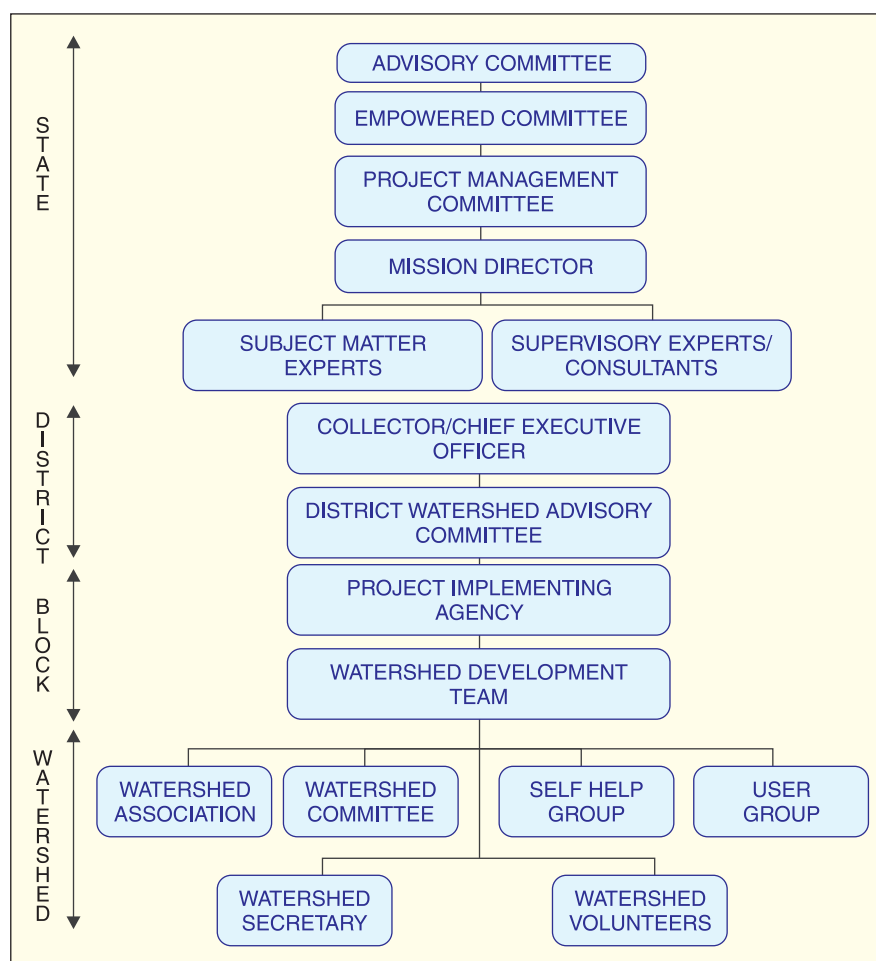


Fig. 3. Institutional arrangement of watershed development project

1.4.2008, three watershed programmes were implemented viz. integrated wastelands development programme, drought prone areas programme and desert development programme. Since then, those programmes have been brought under a comprehensive programme named as IWMP being implemented under common guidelines on watershed development, 2008.

Watershed development activities involve management of natural resources like soil and water along with various agronomical interventions with a focus on livelihoods improvement through community participation in planning and implementation as inbuilt in institutional arrangement of watershed development project (Fig. 3). This follows the farmers' led extension process in watershed areas.

Project implementing agency (PIA) form a watershed development team (WDT) including representative

officials of all the line departments to plan the activities which are implemented by watershed committee (WC) and watershed association (WA). User groups (UG) are formed for maintenance and utilization of resources while SHGs take up non-land based / non-farm activities. This inculcates farmers' led extension process that focuses on building and working with people's existing strengths and resources. The approach is about informing, enabling, initiating and empowering appropriate choices for long-term well-being. It involves all sections of rural society across caste, class, gender and other divides.

Strategies for promoting farmers'-led extension

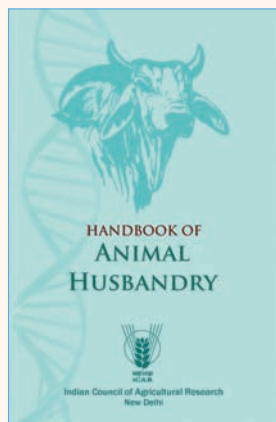
- Promoting Farmers Interest Groups, Women Interest Groups, Commodity Interest Groups for strengthening Farmers'-led extension.

- Capacity building of these organized groups for advanced agricultural production technologies.
- Farmers forum, association, etc. need to be replicated on a wider base. These member farmers will serve as para extension workers in their social system.
- Promotion of farmers participatory research and extension programmes for location specific technology development, refinement and dissemination.
- Farmer groups to be equipped with market intelligence and information and communication technology (ICT) for access to market information.

¹PhD Scholar, Department of Agricultural Communication, ²Professor and Head, Department of Agricultural Extension, Institute of Agriculture, Visva-Bharati University, Sriniketan 731 236, West Bengal. e mail: usha24.das@ gmail.com,

HANDBOOK OF ANIMAL HUSBANDRY

Livestock sector has created a significant impact on equity in terms of employment and poverty alleviation. After staple crops, livestock sector is the second most important contributor to the agricultural economy. The producer



prices of meat, eggs and milk, in India appear to be highly competitive as the domestic producer prices of these products are quite low compared to the ex-farm gate prices of major exporters in the world markets. A knowledge resource is essential to harness the potential of animal production. The Indian Council of Agricultural Research brought out first edition of *Handbook of Animal Husbandry* in 1962 for serving the end-users ranging from livestock owners to academicians. This is the Fourth revised and enlarged edition of *Handbook of Animal Husbandry* which includes 48 chapters under nine sections, such as Animal Genetics and Breeding; Animal Nutrition and Feed Technologies; Animal Management; Animal Reproduction; Animal Health Management; Animal Biotechnology; Animal Products, Technology and Machineries; Economics and Trade of Livestock and Poultry Enterprise; and Social Sciences. It has 19 new chapters like Impact of Biotechnology, Nanotechnology: Applications in Animal Sciences; Carbon Trading: Mechanisms and Opportunities in Livestock Sector; Intellectual Property Rights Regime; Indigenous Technical Knowledge etc.; and old

chapters were revised holistically. The fourth revised and enlarged edition of *Handbook of Animal Husbandry* will prove useful to the students, teachers, livestock/poultry farmers, and to especially those who visualize the economic growth of country with the support of livestock sector.

TECHNICAL SPECIFICATIONS

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