

THE GOVERNANCE OF EXTENSION AND ADVISORY SERVICES

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REFORMING GOVERNANCE TO IMPROVE EXTENSION SERVICE DELIVERY

Public delivery of extension services has not kept pace with the emerging expectations and challenges faced by farmers. Administrative, structural and legal reforms in extension governance are long overdue, argues RM Prasad.

Improving public service delivery is one of the biggest challenges world-wide. Organizing public service provision is deemed to be a core function of governance (Box 1).

Box 1: Governance

Though governance and administration are related, there is distinct difference between these two concepts. World Bank (2002) defined governance as “the manner in which power is exercised in the management of a country’s economic and social resources for development”. Governance is the brain that creates various aspects of society and identifies the functions, whereas administration is the act of implementing the end results of governance.

Extension is a public service in most developing countries and its failure to effectively support rural producers has led to its reform (Box 2).

Box 2: Reforms in Governance

When we refer to reforms, it is evident that there are both supply side reforms as well as demand side reforms.

Supply side reforms relate to public, private and third sector service provision and financing, administrative and fiscal decentralisation, capacity strengthening and budgeting.

Demand side reforms relate to the principles of participatory planning and implementation. For ensuring good governance, it is necessary that proper reforms are adopted, in relation to administrative reforms, structural reforms and legal reforms.

Administrative reforms seek to focus on issues related to people and systems / processes. Administrative reforms are defined as comprising reforms in three important elements, viz. Human Resources Development and Personnel Management; Internal Systems and Processes; and Citizen Interface Systems and Processes.

Structural reforms refer to changes in the structure and function of institutions as a result of structural or technological changes.

Legal reforms refer to changes in the function of institutions as a result of policy changes or changes effected by law or legislation.

Reforms in Extension

There are many reasons for perceived failure of extension services, which call for reforms in extension service delivery. In the context of governance, administrative reforms focus on

access in terms of inclusion, extension service delivery. In the context of governance, administrative reforms focus on access in terms of *inclusion*, structural reforms focus on technological advances in terms of innovation and legal reforms focus on quality of services in terms of *incentivization*. Extension programmes are shifting from a delivery model that prescribes

technological practices to one that focus on building capacity among farmers to empower them to identify and take advantage of available technological and economic opportunities. Extension reforms, therefore, need to address three types of extension, namely clinical extension, livelihood extension and entrepreneurial extension (Table 1).

Table 1: Reforms-extension matrix

	Administrative Reforms (access) Inclusion	Structural Reforms (technological advances) Innovation	Legal Reforms (quality) Incentivization
Clinical Extension	Counselling	Facilitation	Farm & Rural Legal Service
Livelihood Extension	Access to Resources	Structural Adjustment related to Climate & Market	Policy on Food and Nutrition Security
Entrepreneurial Extension	Value Chain Development	Innovation	Regulatory and Quality Assurance Services

Clinical Extension

Clinical extension should be based on a thorough differential diagnosis, followed by an appropriate treatment regime. Clinical extension needs an overhaul in order to be much more like modern medicine, a profession of rigour, insight and practicality. The extension personnel have to adopt a strategy to meet the differential needs of the various categories of farmers. For instance, farmers in distress require a range of different resources and services to be provided by the extension system, such as financial counselling, legal advice, social support, personal guidance, emotional counselling, etc.

Counselling

Extension personnel have to be properly oriented to serve as counsellors, who are professionally trained to relate with, and empower farmers. They have to be trained and provided knowledge and experience on dealing with people who face stress. Farmers often need crisis counselling to tide over crisis situations in farming and to deal with risks and uncertainties involved. Similarly credit counselling is important for farmers to deal with debt and to compare different options to manage credit.

Facilitation

Facilitation refers to the process of developing an enabling environment for farmers to proactively participate in different extension services. Capacity building programmes may be organised with the help of domain experts to assist farmers to acquire practical skills to improve their access to resources

and to create space for their actions by playing supporting and enabling roles.

Extension personnel have to engage in three categories of facilitation:

- Technological facilitation for productivity and profitability enhancement,
- Process facilitation in the contents and quality of extension service with focus on competitiveness, social sensitivity, environmental concern and sustainability, and
- Empowerment facilitation for new skills and competence for improved livelihoods.

Farm and Rural Legal Service

There is need to provide legal help to primary producers who are experiencing financial hardships related to their business. There is an absolute need to frame a policy to benefit small farmers so that they do not lose out in the windfall gains made by the corporate, the rich and the powerful in the urbanisation process currently underway. There is a growing trend of 'farming out' agricultural land (send out or subcontract work to other people) to realtors, which needs to be addressed.



Livelihood Extension

A livelihood comprises the capabilities, assets and activities required as a means to a living. Extension should contribute to sustainable livelihoods among rural communities. Analysis of existing livelihood patterns can help extension in organising the needed support. Extension should consider how different activities 'fit' with livelihoods rather than how it aligns spectral programmes (agriculture, animal husbandry, fisheries etc) or with academic disciplines and this would require a shift in the way programmes are currently designed.

Access to resources and services

Women, youth and the landless are often at a disadvantage in terms of access to both resources and services, and therefore it is necessary that the extension services pay particular attention to reaching and supporting these unreached groups. Governments face constraints in terms of how much they can and should spend on different sectors depending on its finances. Constraints can also be gender-linked. For instances, constraints to increased productivity are often the result of gender-linked differences in access to inputs and resources.

Adjustment related to climate and market

Climate change is perhaps the most serious environmental risk impacting agricultural productivity. Agriculture is a major provider of environmental services and it plays an important role in sequestering carbon, managing watersheds and preserving biodiversity. At the same time, agriculture is also a major user and polluter of natural resources contributing to underground water depletion, agrochemical pollution of soil and water, exhaustion of soils and thereby also contribute to climate change. Agricultural extension personnel should have knowledge related to adaptation to climate change and also knowledge on ways of reducing the contribution of agriculture to climate change.

Policy on food and nutrition security

Extension policy is not just about policies towards extension agencies, per se. The roles of agricultural extension agencies need to be defined within policies that facilitate the involvement of different activities involved in livelihood extension. The audience for 'pro-poor extension' comprises of subsistence farmers, small farmers struggling to increase their commercial production, those who lack sufficient land, labour or markets to engage much in farming and they need support in combining agricultural activities with an array of other livelihood options.

Entrepreneurial Extension

Entrepreneurial Extension should focus on enhancing value to the efforts of individuals and groups involved in farming by bringing together resources to develop and deliver projects while simultaneously pursuing financial sustainability of the project. The three underlying dimensions of entrepreneurship are: innovativeness, risk-taking, and pro-activeness, which could be summarized simply as an entrepreneurial attitude and behaviour.

Value chain development

Value addition and efficient marketing determine the success of most of the production-oriented development programmes. Efficient backward and forward linkages play a significant role in lowering the cost of production and ensuring higher price realisation, resulting in higher returns. An ideal value chain should bring all the stakeholders engaged in the production system on a common platform to contribute their best, while ensuring fair deal and transparency. The value chain will include all the input suppliers, service providers, knowledge intermediaries such as research and extension agencies and all those that are involved in capacity development and linking different agencies. Agencies like financial institutions and market information centres are also part of the value chain. Efficient linkage of these various stakeholders potentially improves production, price realisation and profitability.

Innovation

Extension services enable farmers to take up innovations, improve production, and protect the environment. Enhancing individual and collective capabilities, ensuring farmers participation in innovation networks and value chains and influencing the enabling environment to be more supportive of innovation are critical for innovation. There is need to effectively link new knowledge with user communities such as farmers and enterprises. Developing an innovation strategy can potentially enhance innovation culture within extension organisations and also in identifying ways of enhancing innovation among farmers.

Regulatory services in extension

Regulatory services protect the state from exotic and invasive species, ensure that pesticides are used safely, regulate the input industry, monitor quality of inputs, certify products against standards including organic products, provide diagnosis of pest and disease infestation and ensure readiness to respond to catastrophic events impacting the state's agriculture. The presence of a legal

and policy framework will help streamline the confusion currently existing in the efficient and effective delivery of extension services to farmers, particularly in the areas of service provision and networking and enhancing the capabilities of extension service providers.

Way Forward

1. Farmers in different contexts require different set of support and services from the extension system. Extension services therefore should have staff with good understanding of technical knowledge plus skills to manage social processes.
2. To ensure good governance, the reforms should focus on administrative, structural and legal aspects of extension provision. Improving governance of extension and enhancing capacities at the organisational level to deal with these aspects should be the main focus of

policy reforms in extension.

3. Extension should broaden its services from technology dissemination to facilitation, provision of legal services, inclusion of disadvantaged groups, improving accountability and supporting farmers to deal with climate and market risks.



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GOVERNANCE: THE MISSING PIECE IN KVK REFORMS

Krishi Vigyan Kendras (KVKs) do face a number of governance challenges. Addressing these issues is important to enhance the contribution and impact of KVKs argues PN Ananth.

Establishment of KVKs was an important institutional innovation by the Indian Council of Agricultural Research (ICAR). Over the past four decades, the number of KVKs has expanded to 642. While its role and contribution to agricultural technology assessment and dissemination is widely appreciated, it has also received an equal share of criticism. No other agricultural system large or small in the world has such a frontline decentralized research capacity at the district level. Recent reviews on KVK (ICAR, 2013) have raised several concerns on its performance. But several issues related to Governance of KVKs remain unrecognised over the years. This blog discusses some of these issues.

Governance: The Missing Piece

The AESA Blog 46 (Chander, 2015) discussed in detail the evolution of KVKs. KVKs face a number of challenges. This blog deals with the governance of KVKs which hasn't received enough attention so far, though NARS is discussing about Good Governance in Agriculture for some time (Box 1). I feel that the performance of KVKs directly depends on the quality of its governance.

Box 1: Good Governance in Agriculture

Governance is defined as the way a system or organisation is guided and steered. From the perspective of NARS (National Agricultural Research System), governance is related to guiding, actuating and steering its research; education and extension functions towards growth and improved performance. Growth and improved performance depend upon an enabling environment to perform (internal processes i.e., rules and procedures) and generation of S&T (Science & Technology) goods with relevance and utility to all stakeholders. Good governance certainly rises above the routine application of internal administrative and financial rules and procedures in managing the affairs of organisations.

Good governance framework is built around three dimensions—internal mechanisms, performance and accountability.

- The internal mechanisms relate to how decision-making roles and responsibilities are defined, accepted and applied to establish overall work culture.
- Performance dimension—a key external variable of good governance—relates to the use of resource inputs with product outputs.
- Accountability—an external dimension of good governance, is defined as responsibility for performing those tasks or achieving those results for which the individual or the organisation is delegated the necessary authority.

Source: NAAS (2002)

The major issues related to governance that affects the performance of KVKs are discussed below.

Support from Host Institution

The success of a KVK ultimately depends on the quality of support it receives from the host institution. KVKs are hosted by different types of organisations such as ICAR Institutes, State Agricultural Universities, NGOs and even agriculture and other development departments. The host institutions at first need to fully understand the mandate of KVK and should have adequate resources to support the functioning of the KVK. While resources are available, there are cases where these are not extended to KVKs. There are several instances where host institution deploys the staff of KVKs to handle other jobs and responsibilities in the host institution. The Programme Coordinator of the KVK has little control on his staff in such situations. This is affecting the performance of the KVKs and there should be a mechanism to address this issue at the earliest.

My personal experiences with the host institution managing one of the KVK hosted by the NGO helped me to fully understand the critical role of host institution in the performance of KVK. The host institution rarely comes forward to support the KVK financially whenever there are delays in fund transfer from ICAR. While working as Training Organiser with that KVK, all my staff including myself used to get salary at the end of each month only for 6-7 months. Later, we used to get it together after 4 to 5 months due to the delay in fund transfer to the KVK. The same situation prevails even today. Sometimes I wonder what other sacrifices KVK personnel need to do to support this system? Even in KVKs under the ICAR institutes, it is hard to get the powers of a Programme Coordinator fully delegated from the Institute. All these highlight the need for addressing some of these issues so as to provide the right environment for KVK personnel to perform better. Often host institutes utilise the expertise of KVKs in mobilising farmer groups for their work and allot duties based on their priorities, but rarely support the KVK in delivering its mandate. Without the full support of the host institution, it is difficult for KVKs to perform up to their potential.

Capabilities of KVK

As a team, KVK is competent to manage its mandate, as the administrative and financial guidelines regarding its management are clear. The KVK personnel are also capable of

organising any type of training including training of extension functionaries, etc. The Programme Coordinator and SMS (Subject Matter Specialist) are aware of the prevailing situations, farmer needs, technologies in the market and what not. Moreover, the trainers of KVK are as equally qualified as any academic faculty from the SAU and any Scientist of ICAR. Unfortunately, the capability of professionals is assessed by their place of posting. Many believe that the training of extension functionaries should be handled by the scientists of SAUs or ICAR only (though they have little field experience) and not by the KVK faculty.

Moreover, while the KVK personnel often have the same level of educational qualification and years of experience within the system, they are placed in lower grades than people working in the research centres. Though many call KVK personnel as KVK scientists, officially they don't belong to the scientific category (except the Programme Coordinator). We need to look at these issues too while we reform KVKs. The High Power Committee on Management of KVKs has recommended converting the SMS positions in KVKs to the scientific cadre (ICAR, 2014). I hope a decision on this would be taken soon.

Issues on Technology Assessment

One of the major features of KVK (which really differentiates its functions from the state line departments such as Department of Agriculture, Horticulture, etc) is its mandate on technology assessment and refinement. (But unfortunately many consider KVKs as merely training centres). But whether the KVKs have real capability to assess and refine technologies is an important question? Do they have a concrete mechanism to pass on assessment results to the research system though they report annually to controlling agencies? Every year, KVKs search for new technologies to be tested for its micro location specificity and many KVKs are constrained in obtaining these technologies for testing and also for demonstration. Invariably ICAR institutes demand KVKs to pay for these technologies. In some cases, for instance, getting good hybrid seeds for assessment and demonstration from public sector is extremely difficult.

Visibility Crisis of KVK

Many talk about the poor visibility of KVKs at the district level and they expect every farmer in the district to know about the KVK. A KVK with 16 staff members cannot do wonders in a district on its own. Until and unless it collaborates with the mainstream extension machinery of the state and organises proper assessment and communication

of technologies its effectiveness and visibility will always be questioned.

Every year a KVK is set with a target of 24 On-farm trails, 24 Front Line Demonstrations and 72 trainings by its six experts. To perform these activities each KVK is approximately provided with INR 6-10 lakh. Cost of all critical inputs for trials and demonstrations, cost of fuel, post, telephone, teaching materials, food charges during training and other daily expenses in each KVK have to be met from this meagre operational budget. Keeping in view this limitation, KVKs should avoid the temptation to initiate larger development interventions in the district to show its impact. KVKs should focus on technology assessment and supporting agricultural planning in the district.

As noted in one of the good practice note from KVK shared through AESA web portal (www.aesanetwork.org) "while the KVK demonstrations could convince several farmers to use a package of scientific practices and learn from their impacts (reduced use of inputs, less pollution, higher profits and enhanced climate resilience), the upscaling of the technology package was possible only through the concerted efforts of the Department of Agriculture, ATMA, Local Self Governments and input agencies" (Muralidharan, 2015). Despite the guidelines to work together, there is lack of partnership between KVK and ATMA (Glendenning, et al 2010; Babu et al, 2013). Exceptions do exist but these are mostly driven by individual interests.

Box 2: Successful impact of collaboration: KVK-Puducherry

Apparently, farmers in Sorapattu village of Mannadipattu in Puducherry have a lot of information on using integrated pest management (IPM) for protecting their crops rather than using chemical pesticides for the same. The emphasis on IPM in the region is in practice since 1994, in order to bring down the indiscriminate usage of pesticides to contain crop pests and diseases while conserving and protecting natural insects in crop ecosystem. Perunthalaivar Kamaraj Krishi Vigyan Kendra (PKKVK), Puducherry, in co-ordination with the agriculture department is responsible for bringing this tremendous change in the attitude of the farmers towards this method. Pesticide consumption in this region has come down significantly from 163 metric tonnes in 1990-91 to 40.92 tonnes in 2013-2014, resulting in a two-thirds reduction in its consumption. Similarly, the number of pesticides outlets has decreased from 196 in 1990-1991 to 115 in 2013-2014, nearly a 30 percent decrease.

<http://www.thehindu.com/sci-tech/science/an-entire-village-shuns-using-chemicals-for-growing-crops/article6809021.ece>.

Partnership Experience from KVK-Khordha

To enhance the contribution and impacts KVK-Khordha under ICAR-Central Institute of Freshwater Aquaculture started an initiative called "People and Partnership". The initiative helped it in developing strong networks with more than

10 organisations having similar mandates in the district. Partners started seeking help from the KVK in different ways to work in tandem for the development of agriculture in the district and it helped the KVK to increase its reach from 7000 to 14,000 farmers/year. Certain partners provided funds and others provided manpower for larger development (Table 1).



Table 1: People and Partnership at KVK, Khorda-An Analysis

Partners	Role of KVK	Benefits to KVK	Reach of activities	Provision of
State Employment Mission, Government of Odisha	Entrepreneurship development through skill development	KVK entered into entrepreneurship mode in freshwater aquaculture Strong link with State Department of Fisheries; KVK poses technical resources in local language	250 Entrepreneurs from three districts in fisheries	Finance
Odisha Community Tank Management Project	Joint implementation of Agricultural Livelihood Support services component	Community mobilization through Pani Panchayati. e Water Users Association; Additional manpower to KVK; Extensive outreach of activities by KVK; Experience in Farmer field school approach; Envisaged farmer to farmer extension model	Developed operational infrastructure for KVK at two blocks; Strengthened the footing in four blocks; 7556 ha benefitting 6000 farmers in agriculture/ horticulture, 2000 in livestock and 500 households in fisheries in the command villages.	Finance, Manpower
Odisha Watershed Mission	Training on off season vegetables; Training on rural livelihoods	Sharing experience to farmers of Nuapada district; Developed local language training modules on off season vegetable cultivation; Established link with Department of Horticulture with Orissa University of Science and Technology; Trained 140 extension workers of mission on rural livelihoods	Extended services to farmers of Nuapada district; Trained 140 watershed Management Teams on rural livelihoods	Finance, Manpower
ATMA-Khordha	Technical Backstopping, varietal trials and Skill Development Training	Massive coverage of paddy land under line transplanting; Concluded varietal trials	10,000 ha of paddy land under line transplanting; 5921 farmers benefitted over four years	Finance

KVKs do convergence not only with ATMA but others too. But some organisations only want to sub-contract a few set of activities (e.g.: Training) without engaging in sharing expertise and experiences which may not be ideal. A lot more needs to be done to promote sustainable and mutually rewarding partnerships at the KVK level.

Reporting

While KVKs do a lot of interesting and innovative work, they have been generally poor at reporting, reflecting and sharing their experiences. The current reporting requirements do not appreciate documenting best practices and preparing quality case studies. For instance, Programme Coordinators of KVKs working under ICAR institutes have too many to report and these include, Controlling Officer of the host institute, Director, Extension of the concerned state agricultural university, Zonal Project Directors

of the concerned Zone and at times even to the District Magistrate/Collector. Day-to-day reporting has become very cumbersome and apart from this many other works are also entrusted to KVKs. This also needs review. Fortunately we currently have an e-platform like AESA (Agricultural Extension in South Asia) which is keen to publish good practices of KVKs. However, KVKs do need more support and encouragement to document, analyse and promote their innovative experiences.

Way Forward

KVKs are viewed as one of India's important institutional innovation inspiring the world in the 21st Century (ICAR, 2012). This institutional innovation is also likely to spread to other parts of the world like Africa (Kumar, 2013). If KVKs have to contribute effectively, their roles need to be clarified and their relationships with the host

institute needs to be streamlined. KVKs should have the freedom to decide on its functioning without getting involved in the activities of the host institute which are not in line with the mandates set for the former. Powers to implement the approved technical programme of the KVK should be fully delegated to the PC. KVKs being a field oriented organisation need a different type of management which is different from the way a research institute is managed.

KVK personnel working in the host institutions have to be brought back and existing vacant posts in KVKs should be filled up urgently. The recommendations of the High Power Committee on Management of KVKs should be implemented without any further delay. Without addressing these types of governance challenges, one shouldn't be expecting any major impact from the KVKs.

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DEMAND-DRIVEN EXTENSION: NEED FOR PUBLIC EXTENSION TO TURNAROUND

“Is it not strange that agriculture in India has transformed itself, while the public extension has lost its way? The supply-driven extension, now regarded as largely inaccessible, ineffective and irrelevant, should make way for a more dynamic ‘demand driven’ extension system”, argues Arun Balamatti.

Public extension indeed had a lead role during the Green Revolution (GR). Post GR, however, everything else about agriculture has changed. The nature of farming has changed from being self-reliant to externalized farming; the purpose of farming has changed from largely subsistence to market-oriented; traditional, yet confident, self-contained farmers as a community are now operating as individuals; are disillusioned and seem to have lost confidence. Public extension system that worked with the eagerness and energy to act as a springboard for farmers to adopt high yielding varieties (HYVs), hybrids, chemical fertilizers and irrigation technologies during GR is no more the same.

Loss of farmers’ seed sovereignty, exploitative markets and new challenges like climate change seem to have unsettled the public extension system. The government’s desire to double farmers’ income by 2022 comes in as an added pressure on the public extension system. Improving productivity as well as profitability is the name of the game, today. Is the present public extension system prepared to live up to the challenge? It seems highly unlikely, unless the public extension system recognizes, that it has not only lost its way, but also that it must turn around and change its orientation.

Farmers Missed the Change that Everyone else Embraced

The constant research and technology development efforts are impacting our life significantly, including the food we eat, the clothes we wear, the means of our transport, the communication we do and the gadgets like computer, television, mobile phones that we use every day. Similarly, research and technology developments have brought enormous changes in the field of agriculture, in the crops, varieties, farm machinery and the agronomic practices. Unfortunately, majority of the farmers are not able to adopt the new technologies and practices. There are many reasons why farmers are unable to access and adopt new technologies, such as: the diversity in agricultural ecosystems and in the range of crops being grown, the direct and indirect influences of biodiversity on diverse cropping systems, language and cultural heterogeneity. These reasons aside, the ‘information gap’ is also a major constraint, which is reflected in the lack of awareness about new and relevant technologies due to lack of a suitable, responsive and comprehensive ‘agricultural extension system’. Therefore, the gap between generation of technological innovations and their ‘utilization’ is constantly widening.

Agricultural extension system, traditionally, has had two main functions: imparting knowledge and developing attitude and skills, so that farmers can use the new knowledge. Agricultural extension today, known as Rural Advisory Services (RAS), has an extended scope that includes provision of information, services and skills to farmers, including recognition of multiple players involved in the process such as public, private and civil society organizations. Delivering knowledge is relatively easy in the information era that we live in, today. However, building the necessary attitude and skills among a vast majority of farm families is a difficult task. Many farm technologies are being developed, often beyond the comprehension of an average farmer. Since the end users of the technological advancements are farmers, their capacity building, although inevitable, has largely remained inadequate due to absence of effective institutional mechanisms and inadequate human resources under the present agricultural extension system. An alternative system of agriculture is imperative.

Agricultural Extension: The Current Supply-Oriented System

The system in operation in India and many developing countries is essentially a 'supply-oriented agricultural extension'. The National Agricultural Research System (NARS), headed by the Indian Council of Agriculture Research (ICAR) through its country-wide research institutions and the State Agricultural Universities (SAUs), undertakes research to develop technologies on crops, varieties, nutrients, pesticides, agronomic practices, farm implements and equipment etc. The Department of Agriculture (DoA), under the aegis of the state governments, has the mandate of transferring the technologies to farmers, along with its various development departments.

The Research and the Development agencies operate in the context of agro-climatic zones and their technology development and RAS are aimed at farmers and farming. On the other hand, private input agencies who sell seeds, fertilizers, pesticides, farm machinery, irrigation equipment and so on. While the end beneficiaries of research, extension and input trade are the same - the farmers - there seems to be little coordination between the actors involved in research, extension and input trade. In the process, farmers are left with no choice but to seek different agencies for different purposes.

Inadequacies in the supply-oriented extension system

There are certain fundamental inadequacies in the present 'supply-oriented agricultural

extension system'. Extension is designed to be a public service system. While public extension is mainly the mandate of the DoA, the SAUs focus more on research and teaching and hence have limited contact with farmers through their limited extension activities. The DoA, on the other hand, working under pressure to deliver government's welfare schemes and subsidies, has reduced itself from being an 'agency of technology transfer' to a 'subsidy shop'. Various reports and studies say, that the information flow within the public sector moves linearly, with content focusing on the transfer of technology for increasing crop production.

A wider definition of agricultural extension, beyond improving crop productivity, has not been embraced. Information flow is supply-driven and not need-based or area-specific, so farmers see the quality of information provided by the public extension staff as a major shortcoming. This is due to the static and inflexible nature of the organization, where a top-down hierarchical approach continues. Access to extension is also an issue, because of the low level of outreach by public extension services. This is partly due to the public staff being overburdened with implementing state and centralized schemes, which are also not easily modified to suit local needs and conditions.

Under these circumstances, as the public agencies are moving far and away from farmers, private traders of seeds, fertilizers, pesticides and farm implements are coming closer to farmers, often through aggressive marketing strategies. It is these private traders who are now deciding what the farmers should use - the inputs, their quantity, quality and even the time of use of inputs (See Box 1).

Therefore, it is not the problem in the crops or the perceived requirements by farmers, but it is the corporate interests of private players that persuade and influence farmers' decision. The farmers, in this 'supply-oriented agricultural extension system' have become hapless consumers rather than being the 'end users of technologies'.

The Need for Demand-Driven Extension Services

Today, farming is no longer a means of subsistence but an enterprise. Farming requires not just the successful cultivation of a crop, but also demands a reasonable price for the farmer to succeed in the complex 'marketplace'. This complexity is a challenge to farmers of all socio-economic status, be it big farmer, smallholder, literate or illiterate. Every farmer needs to put together the available knowledge, technology and financial resources

in addition to other essential inputs like seeds, fertilizers, pesticides etc. The key to success here lies in farmers acquiring quality inputs at competitive prices, putting them into use on their fields appropriately, harvesting a good crop and selling for profit. Thus, farmers are required to be skillful and shrewd managers. Unfortunately, many farmers are good at cultivation, but have limited managerial skills, especially on the market front, hence, even the best of the farmers are losing in the market.

The term 'demand' is defined as what people ask for, need and value to an extent that they

are willing to invest their resources, such as time and money, in order to receive the service (Chipeta 2006). Demand-driven extension (Box 2) involves, extension clients actively identifying which advisory and educational services are needed. However, this note is not about collectives where farmers organize in to farmer producer organizations (FPOs), watershed associations (WAs), water user groups (WUGs) etc., where the collectives are in a position to assert or bargain for information, services and products based on the sheer strength of their unity. Such collectives are few and sporadic.

Box 1: Farmers access to information

The latest Situation Assessment Survey of Agricultural Households in India (NSSO, 70th round), based on a countrywide survey (July 2012-June 2013) of nearly 35,000 households revealed that "farmers continue to remain far removed from new technologies and guidance from state run research institutes including KVKs (Krishi Vigyan Kendra)" (NSSO, 2014). Over 59% of the farm households received no assistance from either government or private extension services. Of the 40.6% households who received extension assistance, only 11% of the services came from the government machinery - extension agents, KVKs and agricultural universities.

More farmers depended on other progressive farmers (20%), media including radio, TV, newspaper (19.6%) and private commercial agents (7.4%). *Source: NSSO (2014)*

Glendenning et al. (2010) concluded from a review of agricultural extension in India, that despite the variety of agricultural extension approaches that operate in parallel and sometimes duplicate one another, the majority of farmers in India do not have access to any source of information; this lack of access severely limit their ability to increase productivity, income and reduce vulnerability. *Source: Glendenning, et al (2010)*

Box 2: Demand driven extension

Demand-driven extension / agricultural advisory services represent a break from the earlier understanding of agricultural producers as beneficiaries of services. Instead, in demand-driven extension the users' demands define the content, quality, and mode of delivery.

Its main principles are:

- Services are based on user demand,
- Service providers are accountable to users, particularly on content and quality,
- Users have a choice of service providers.

Source: Blum M and Chipeta S (2016)

Demand-driven extension service in this note emphasizes the needs of those unorganized individual farmers, who, in their pursuit of farming, approach private traders seeking inputs and products. In doing so, they invest their resources, such as time and money, but are not as assertive as a collective could be. As they are alone and often ignorant, they become vulnerable to exploitation and this calls for a need to safeguard their interests.

The market, in agriculture, has two dimensions. The middlemen dominated 'produce market' is a familiar one where the farmer is a constant loser; the other less familiar dimension, is the 'input market' where the farmer must buy various

inputs. Farmers constantly struggle to choose and procure the right quantity and quality of seeds, fertilizers, pesticides, and farm machinery. Only those farmers succeed who can deal with input as well as output markets. Unfortunately, overwhelming majority of the farmers does not have the knowledge, skills and capacities to cope with these challenges. While there is a wide recognition of the exploitative practices of middlemen and the poor prices for crops, the difficulties in accessing technology and proper inputs are not adequately debated. While the call for demand-driven extension has existed for several decades now, new modes of reaching out to farmers could have significant impact in India, as they might better reflect the local information

needs of farmers (Gupta and Shinde, 2013).

All farmers require advice on the following aspects:

- **What to grow?** Choosing the right crop, variety and agronomic practices;
- **How to finance?** Accessing low interest loan from banks or borrow from money lenders at high rates of interest (often, this is the case with majority farmers),
- **What inputs to use?** Harnessing seeds, fertilizers, herbicides, pesticides etc., from the DoA at subsidized prices or struggle to procure them from the open market without being sure about the quality and price,
- **Where and how to sell?** Selling their produce in the market at competitive price defying the clutches of the money lenders.

Often, majority of the farmers either do not approach or do not get what they need from public agencies and hence end up at private input traders. In the present system, when farmers approach the SAU, they might get good information on crops, variety and agronomic practices but they are directed to either the DoA or traders for acquiring the required inputs. When farmers do approach the DoA or a trader, they find out the inputs suggested by the SAU are either not available or are too expensive. The traders then offer alternatives to farmers as they deal in products harnessed from both public and private sources, further complicating farmers' decisions. The farmers are relieved of their dilemma eventually by the traders deciding for them and thus the farmers are deprived of making 'informed choices'.

It should be noted here that such a failure is not of the farmers but of the extension system. For every citizen to have food, nutrition and progress, farmers must succeed. When the farmers' access and abilities are inadequate, it

is the 'system' which should enable them and because the supply-oriented system is failing to meet the demands of 'market-oriented farmers and farming', there is a need to reorient the extension system in a way the system addresses farmers' needs from the market point of view. However, because farmers' welfare cannot be relegated to the 'profit oriented input traders and output buyers', it may be appropriate for a public agency to experiment with a 'social enterprise model'. Thus, to enable farmers to meet the growing challenges, there is now a need for reorienting the present supply-oriented system into 'Demand-driven rural advisory services'.

Way Forward

In the conventional 'supply-oriented extension system', the public research institutes are developing technologies, the public extension agencies are striving for transferring such technologies and the farmers are expected to utilize new technologies. This system is being rendered ineffective due to various limitations, and hence, the private input traders are becoming decision makers for the farmers. This is affecting both 'productivity' as well as 'profitability'. Productivity gets affected by wrong choices and use of inputs and technologies whereas indiscriminate use of agro-chemicals adds to production costs while exerting pressure on the environment.

The nation is looking beyond food security to ensure nutrition security and sustainability. Without addressing the deterrents like climate challenges and growing disillusionment among farmers, these goals will remain beyond reach. This demands a turnaround in the way the public extension system operates. While continuing to work towards improving productivity, the system should address enhancing profitability by helping farmers reduce their production costs and offering them remunerative prices.



Apparently, such a system transformation can only be thought of through policy shift. More of the same hasn't been very helpful. The policy shift should look at reorienting public extension system to make it dynamic and demand-driven. Extension agencies that can offer information, services and inputs as demanded by the farmers should be designed and nurtured. A public agency like KVK, for instance, may take over the role of extending technology as well as

input delivery, provided the mandates, staff structuring and other support systems of KVKs are redesigned to meet the change. Individual farmers could benefit from a competent and trustworthy agency like KVK, should they succeed in winning the confidence of few farmers to begin with. At the same time, farmer collectives like FPOs, WAs and WUGs could make better use of KVKs by playing the intermediary role between farmers and service providers.



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AGRICULTURE EXTENSION SERVICE DELIVERY IN FEDERAL NEPAL: ISSUES AND CHALLENGES

Nepal's agricultural extension service delivery system is currently at the crossroads as it tries to adjust to the changing institutional and policy context imposed by the new federal structure. In this blog post Kamal Devkota and Dhanej Thapa discuss some of these challenges and its implications for strengthening extension delivery in Nepal.

The new Constitution of Nepal 2015 has initiated federal, provincial and local governments in Nepal, each bestowed with respective rights, responsibilities and power. The erstwhile development regions, zones, municipalities and village development committees have been dismantled to form seven provinces and 753 local government units. The number of districts has increased from 75 to 77, with the division of Nawarparasi and Rukum districts. However, the districts remain administratively the same but with significant curtailment in power and authority. Along with this administrative restructuring, the governing mechanism has been changed as well. While developing the new mechanism of governance, the Constitution has given tremendous authority and responsibility to local governments, which is unprecedented and has never been experienced before in the history of Nepal.

After federalism came into operation, elections for this three-tier government were held successfully in 2017 with overwhelming participation from the people and the elected representatives have assumed their roles with huge excitement, renewed commitment and enthusiasm. At the same time, there are increased expectations from the general public, especially in terms of easy service delivery, infrastructure development, economic wellbeing, and local prosperity. Expectations on service delivery for agricultural development, which is considered as an engine of economic growth, is relatively higher.

Federalism and Agricultural Extension

Agricultural development relies heavily on an effective agriculture extension system. Nepal's agricultural extension system used to have a strong bureaucratic chain with high vertical accountability but less to farmers. But federalization has opened up an opportunity for making agricultural policies at the province and local government level and thus rise above bureaucratic control. This changing context has also brought in multiple challenges while achieving agricultural development goals envisioned in Agriculture Development Strategy 2015. This blog highlights the emerging issues and challenges in the changing institutional and policy context. It also briefly traces the gaps in the current extension model and discusses those issues where efforts should focus – to design a better agricultural extension service system in Nepal.

1. Inconsistent Institutional Structure

The initiatives with regard to implementation of federalism have already started with the

restructuring of institutions at national, district, and local levels. The apex body for agriculture development, the Ministry of Agriculture and Livestock Development (MOAD), has been split and then merged time and time again. Currently, the Federal Ministry of Agriculture and Livestock Development (MOAD), is comprised of three central departments, central laboratories, and commodity development centers, along with national priority projects such as the Prime Minister Agriculture Modernization Project (PMAMP).

At the province level, the Ministry of Land Management, Agriculture and Cooperative has been established. This ministry operates agriculture and livestock development-related Directorates, province-level laboratories,

Agriculture Knowledge Centre, Veterinary Hospital and Livestock Expert Centers at the district level. Agriculture and Livestock Learning Centers were recently formed in the district by replacing the District Agriculture Development Office (DADO) and District Livestock Service Office (DLSO). As per the new constitution, district level sectoral organizations including DADO and DLSO, were supposed to transfer into the local government offices. It was expected that farmers can get expert services within their villages. But these district offices remain within the district under different names and slightly changed mandates and authorities.

At the local level, a few agriculture staff members have been assigned to deliver agricultural services under local government. In each local government, there are separate sections for agriculture, livestock, and fisheries development. However, these sections lack adequate staff to cater to the needs of a large number of farming households. Apart from this, the extension agents working in those sections have limited technical expertise, with poor linkage mechanisms to provincial-level agriculture development offices. Thus, it seems that the ongoing practices of institutional restructuring of agricultural services in federal system is inconsistent with the spirit of the constitution, which envisages delivery of quick, quality and adequate services to people at the local level. Hence, Nepalese agriculture extension service delivery has been facing difficulties in transforming itself in the changed context.

2. Overlapping Power, Authority, and Jurisdiction

Article 51 of the Constitution of Nepal established the policies on agriculture and land reform. It aims at scientific land reform by ending dual ownership

of land, and promoting the rights and interests of farmers. It has prioritized the preferential right of the local community to protect, promote, and make environment friendly and sustainable use of natural resources available in the country. Similarly, the constitution has guaranteed the right of farmers to have access to lands for agricultural activities, select and protect local seeds and biodiversity that have been used and pursued traditionally, in accordance with law. The ultimate objective is to enhance production and productivity. For the implementation of these provisions, clear roles, responsibilities, power, and authority at different levels of government is needed. However, agriculture has been under the concurrent right of all levels of government – federal, provincial, and local. Agriculture and livestock has been allocated under the authority of provincial government whereas local governments are responsible for agriculture and animal husbandry, agro-products management, animal health, and cooperatives. Farmers can take services from all three tiers of the government. There is no clear demarcation as regards the power, authority, roles and responsibilities among the different levels of government. Currently restructured agriculture entities are operating under short-term working guidelines and are yet to be finalized vis-à-vis their terms of reference so as to avoid duplications of programmes and services. This has created confusion on mandates and sharing of authority. Quite likely there are deficiencies and duplications in the programs.

3. Weak Human Resource Capacity

People's expectations from the newly elected representatives with regard to development and provision of services is high, and the elected officials have already been feeling intense pressure. However, newly established institutions not only lack experience and expertise on agriculture service delivery, they also experience shortages of human resources with the necessary technical expertise. Agriculture extension officers are not willing to go to the local government offices and offer their services as they do not see better career opportunities and financial incentives. There is a general tendency to stay within the central or provincial offices and bypass the local government offices. Hence, the numbers of extension agents deputed to these local governments are far less than the required number for quality service delivery.

This has created multiple challenges in extension service delivery at the local level. For instance, Pokhara metropolitan city allocated more than one million dollars during the last fiscal year

for the agriculture sector, however, more than half of the budget remained unspent due to the limited human resources available to mobilize the fund. If a metropolitan city like Pokhara is facing such a human resource crisis, what about rural municipalities? They face even more challenges in offering extension services. Hence it must be said that the limited human resources available at the local government level have been impeding the expected agriculture extension service delivery in the changed context.

4. Shifting Policy Regime

Agriculture Development Strategy (ADS) 2015 is the main guiding document that presents the overall strategy, including action plan and roadmap, for the agricultural sector in Nepal. It was prepared under top-down planning of the earlier administrative structure with the assumptions of the central control and coordination system. It was supposed to support the implementation of the Local Self-Governance Act of 1999, which has since been replaced by the Local Government Operation Act 2017.

This strategy was formulated and harmonized in keeping with the principles of decentralization, local self-governance, and participatory planning and is most likely to remain valid in the future. However, the federal governance structure was not envisaged in the strategy. After the execution of the federal democratic structure, ADS 2015 seems paralyzed. Several provisions of ADS need to be amended in the new administrative structure. For instance, the strategy perceived DADO and DLSO based in districts as the key extension service providers and provisioned their capacity building mechanism in the strategy. However, the DADO and DLSO both are not in operation now. With the

dismantling of DADOs and DLSOs, responsibilities of agriculture services delivery has congregated under local agriculture units at municipalities and rural municipalities, which are not as envisioned in the ADS. There are many such features affected by the federal structure.

Way Forward

Nepal's current agriculture extension service delivery system is passing through several challenges – institutional inconsistencies, conflicting power, authorities and jurisdiction among multiple institutions across the scale, weak human resources specifically at the local level, and a shifting policy regime. Further, there are poor functional linkages amidst agriculture institutions at different levels of government.

With federalism coming into operation and the state having been restructured, agricultural institutional restructuring needs to be in line with the new state mechanism. Given that the constitution has greatly empowered local governments with power and authority, the agricultural institutional structure at local levels also need to be made equally powerful with sufficient human and financial resources. These restructured institutions need to have clear mandates, power, and authority so that they can make their respective plans and programs avoiding confusion and duplication. A clear incentive plan for extension workers may motivate them to go to the local government offices and provide their services to the farmers. These may include career and financial incentives, exposure, further study plans, social security, etc. Similarly, a bridging policy provision for ADS in the new federal context could be useful for linking with new structures.



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ACTORS, PROGRAMMES AND POLICIES: SRI IN TRIPURA

Harnessing the potential of other actors, programme and policies should be an important strategy for extension and advisory services. Suchiradipta Bhattacharjee and R Saravanan illustrate the importance of these aspects in the context of SRI promotion in Tripura.

Agriculture is the only livelihood option for most of the rural communities in Tripura. A large majority of farmers are engaged in paddy cultivation. Though more than 75% of Tripura's cultivated area is under Paddy, it was dependent on other states for meeting its food grain consumption as the paddy productivity was very low. In 2001 the Government of Tripura launched its 'Perspective Plan for Self-Sufficiency in Food grains by 2010'. Achieving self-sufficient in rice by 2011-'12 was a major goal and the Government of Tripura gave all support to promote SRI (Systems of Rice Intensification) in the state. While initial efforts by the state Department of Agriculture in promoting SRI failed, it partnered with the Panchayat Raj Institutions (PRIs) to promote SRI. This collaboration was a great success and the area under Paddy grown under SRI increased many fold since then.

Box 1: System of Rice Intensification

System of Rice Intensification (SRI) evolved through participatory on-farm research in Madagascar during 1980s by Father Henry de Laulanie. It is a system rather than one specific technology because it is not a fixed set of practices. It uses certain management practices or principles like transplanting single, young seedlings in wide spacing and square patterns, keeping soil moist rather than flooding, weeding by mechanical weeder and using organic inputs. But they are not absolute in character and should be tested according to local conditions rather than simply adopted. For more specific information on SRI, see <http://agritech.tnau.ac.in/sri.html>. An e-learning course on SRI is available at: <https://www.youtube.com/watch?v=XdjoIpK0B4>.



Table 1: SRI vs. Conventional method of rice cultivation

Parameters	SRI	Conventional
Seed rate (kg/ha)	5-6	40-50
Seedling age (days)	10-12	25-30
Spacing (Row x Plant) cm	25 x 25	20x20
Seedling/hill	1	2
NPK + FYM	20:15:10 kg/ha + 10t/ha	120:60:40 kg/ha + 12t/ha
Water management	Only moist condition	Continuous flooding
Water requirement (mm)	900	1800
Weed management	Incorporated in field by weeder	Manual weeding/herbicides
Grain yield (t/ha)	6.0 – 6.5	4.5 – 5.0

(Source: Patel et al., 2008)

SRI in Tripura

Experiments on suitability of SRI in Tripura were taken up by the State Agricultural Research Station (SARS) under the leadership of Dr. Baharul Islam Majumdar in the beginning of 2000. After getting favourable and encouraging results on the experimental farms for around two years, field demonstration was started in 2002-03. Farmers were not keen to try SRI initially due to the widely different principles of SRI that contradicted the conventional techniques of growing paddy which the farmers have been practising for long. The only advocate of SRI in those initial years was the Department of Agriculture, Government of Tripura (DoA, GoT) which conducted on-farm demonstrations to make the farmers aware of the benefits of practising SRI.

Initial years of SRI promotion

Only a handful of farmers took up SRI but the number was mostly negligible compared to the large number of farmers cultivating rice and most of these farmers were very sceptical about SRI. The productivity of rice around that time (2005-06) was about 2635 kg/ha. Though the state extension system tried hard to educate farmers through (method demonstrations and result demonstrations) about the benefits of SRI, the farmers were not willing to take them up. The farmers were not convinced to take up transplanting rice seedling one at a time in wide spacing and in lines with water drained from the field at intervals as promoted by extension officials. The DoA/GoT soon realised the need for a different approach to promoting SRI.

New initiatives

Renewed efforts to promote SRI were built around inter-departmental and inter-organizational collaboration, especially with the Panchayati

Raj Institutions (PRIs). The state (like the rest of India) has a three tiered PRI system with the Gram Panchayat at the village level, Panchayat Samiti at the block level and Zilla Parishad at the district level (block and district are administrative levels in India). PRI are generally concerned with implementation of rural development programmes. But in Tripura, they took a lead in dissemination of agricultural technologies such as SRI in collaboration with DoA/GoT.

Since 2006-2007, the DoA, GoT started extensive dissemination of SRI with the help of PRIs. Hoardings and yellow flags, the characteristic feature of SRI farmlands of Tripura, were used to draw the attention of the farmers. In addition to these, leaflets and pamphlets were distributed among the farmers on market days in each and every village and audio visual presentations were given in the markets (once a week) on market days to create awareness among people. Regular meetings were also conducted with farmers to make them aware about SRI and its benefits.

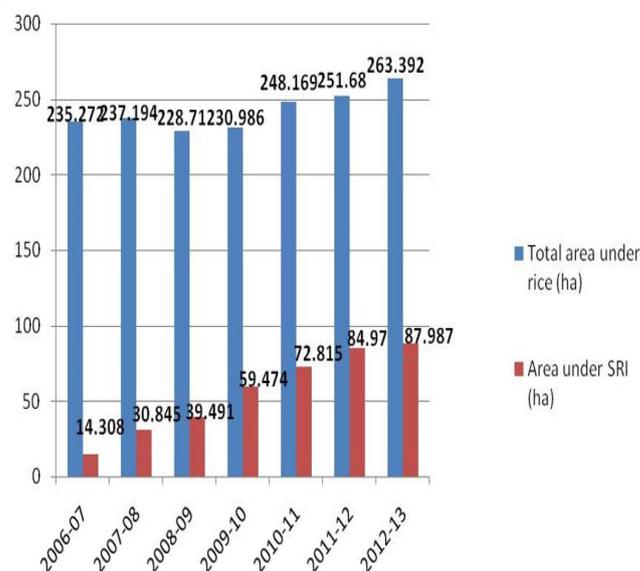


Fig. 1: Area under SRI in Tripura

The Gaon Pradhans (Village Panchayat heads) themselves took up SRI to set an example to the people so that they will follow. The village level workers of DoA, GoT went to the fields of the farmers and demonstrated the methods for field preparation, sowing and transplanting paddy as given in the SRI method. The PRI started selecting beneficiaries who would be given assistance in cash and kind by DoA, GoT for growing rice in SRI method. All these efforts started to pay off after a continuous and tireless campaign for around two years and SRI began to be adopted by several farmers in Tripura (Fig. 1)

What Made the Difference?

Two specific aspects led to the successful adoption of SRI

Collaboration with PRIs

The Panchayat members were themselves farmers mostly and SRI is something that they could personally relate to and they decided to try out this in their own field. When they adopted the method, it became a reference point for other farmers in the locality. The Gaon Pradhan and members are elected by the people from the villages and so they have a great rapport with the masses. Most of the elected members and Pradhans are full time or part time farmers and hence they could better connect with other farmers in the village. With SRI they took up the risk of adopting SRI and also took special interest to turn SRI's technological success into a people's movement. And they could do it because they are empathetic to the needs and concerns of the common masses.

Much has been talked about for developing empathy in extension personnel to make them more effective while working with farming communities. PRI members of Tripura proved how important it is in dissemination of a technology. While SRI has been promoted widely across the country by many including Agriculture Departments, State Agricultural Universities, Self Help Groups, and Non Governmental Organizations, the involvement of grassroot level democratic administrative units such as PRI was a unique feature of SRI dissemination in Tripura.

The SRI farmers reported that they visit Panchayat Office as frequently as they visit the Village Level Worker VLW Circle Office in the villages. They keep in touch with Gaon Pradhan and members not just because they are men of power but because they are one of them on whom they can rely on for any advice. The Gram Pradhans also in their monthly meetings with Superintendents of Agriculture of the Agricultural sub-divisions try to discuss all the problems of the farmers. And being

one of them, they are the best to decide what is appropriate in their contexts. Keeping these factors in view the DoA, GoT along with the Farm Science Centre (under it) worked very closed with PRIs to promote SRI.

Importance of complimentary and coordinated efforts

The Government of Tripura effectively used other programmes promoted by the Central Government such as Macro Management in Agriculture Scheme (MMAS), Rashtriya Krishi Vikas Yojana (RKVY) and National Food Security Mission (NFSM) to promote agricultural development in general and SRI in particular. For instance, during the initial stages of SRI in the state, the funds for research and promotion was taken from the funds received from MMAS. Since 2008-09, RKVY funds were allocated for the purpose of promoting SRI. Under RKVY, Rs 3916 (US\$ 64.94) is given to each farmer who opted for rice cultivation by SRI method. Under NFSM, Rs 7000 (US\$ 106) per hectare is given as assistance every season for one unit SRI farm (1 unit=10 ha). The beneficiaries for these two schemes (RKVY and NFSM) and they are chosen by the Gram Panchayat. All these complimentary and coordinated efforts have a positive effect on SRI in the state.

Outcomes

Currently, Tripura is expected to achieve self-sufficiency in rice in next two years. Though the goal of bringing 100 000 ha under SRI has not yet been fulfilled, around 85000 ha area is under SRI as of 2011-12. The state achieved 'Krishi Karman', a national level award for food grain production in Category III states in 2014 with total food grain production less than 1 million tonnes, mostly thanks to SRI. This high production and productivity has increased farm incomes and has given farmers new hopes in cultivating paddy.

Lessons

Successful promotion and application of new knowledge requires collaboration of several actors, complimentary policies and programmes and a favourable policy environment. Without the DoA-PRI collaboration, targeted use of complementary central government assistance and the political commitment to achieve self sufficiency in rice (through adoption of SRI), SRI promotion would have failed. Harnessing the potential of other actors, programme and policies should therefore be an important strategy for extension and advisory services.

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THE KRISHI VIGYAN KENDRAS (KVKs) IN INDIA: THE FULL POTENTIAL YET TO BE UNLEASHED!

Krishi Vigyan Kendra (KVK) is the only institution at the district level in India for technological backstopping in agriculture and allied sectors. While some of the KVKs have been effectively contributing to the technology development and promotion process, many are plagued with several problems. Though solutions to address these problems were pointed out by several committees, the implementation has been uneven. A lot more needs to be done to improve its performance including the public perception on the role and contribution of KVKs, argues Mahesh Chander.

The KVKs (Farm Science Centres) have been largely regarded as an institutional innovation that effectively link agricultural research and extension at the district level in India. So far, 642 KVKs have been established across the country with 100% funding support from the Indian Council of Agricultural Research (ICAR). Though established initially to promote new technologies through demonstrations and training, its present mandate covers assessment and refinement (if needed) of newly released technologies, training of field extension functionaries and production and sale of inputs such as planting materials. Several committees have evaluated the performance of KVKs from time to time. While several recommendations were made to improve their performance, many of these are yet to be implemented. A lot more needs to be done to enhance the contribution of KVKs to agricultural development.

Box 1: KVKs- A brief history

The Education Commission (1964-66) recommended that a vigorous effort be made to establish specialized institutions to provide vocational education in agriculture and allied fields at the pre and post-matriculate levels to cater to the training needs of a large number of boys and girls coming from rural areas. The Commission, further, suggested that such institutions be named as 'Agricultural Polytechnics'. The recommendation of the Commission was thoroughly discussed during 1966-72 by the Ministry of Education, Ministry of Agriculture, Planning Commission, ICAR and other allied institutions. Finally, the ICAR mooted the idea of establishing KVKs (Farm Science Centres) as innovative institutions for imparting vocational training to the practicing farmers, school dropouts and field level extension functionaries. The first KVK, on a pilot basis, was established in 1974 at Puducherry (Pondicherry) under the administrative control of the Tamil Nadu Agricultural University, Coimbatore.

The Planning Commission approved the proposal of the ICAR to establish 18 KVKs during the Fifth Five Year Plan Period (1974-79). Since then, several new KVKs were established by ICAR during each 5 Year Plan Period. On the occasion of the Independence Day Speech on 15th August, 2005, the Prime Minister of India announced that by the end of 2007 there should be one KVK in each of the rural districts of the country. By the end of the Tenth Plan (2002-07), the number of KVKs grew to 551. So far, the ICAR has established 642 KVKs across the country and these are hosted by different agencies such as Agricultural/ Veterinary Universities, Deemed Universities, State Governments, NGOs, Public Sector Undertakings and other educational institutions. Every KVK on an average receives about Rs. 10-15 Million (200,000 USD) each year from ICAR.

KVKs Mandate

KVKs are to provide a key facilitating role in the refinement of technologies to specific conditions, by acting as a two-way link between research and farmers. Application of technology/products through assessment, refinement and demonstration for adoption, thus, is the main mandate of the KVKs. To achieve this mandate effectively, each KVK is expected to perform following activities:

- On-farm testing to identify the location specificity of agricultural technologies under various farming systems
- Frontline demonstrations to establish its production potentials on the farmers' fields.
- Training of farmers and extension personnel to update their knowledge and skills in modern agricultural technologies.
- Work as resource and knowledge centre of agricultural technologies for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.
- Produce and make available technological products like seed, planting material, bio agents, young ones of livestock etc to the farmers.
- Organize extension activities to create awareness about improved agricultural technologies to facilitate fast diffusion and adoption of technologies in agriculture and allied sectors.

All KVKs are envisaged to reduce the time lag between generation of technology at the research institution and its application to the location specific farmer fields for increasing production, productivity and net farm income on a sustained basis. As technology transfer is the responsibility of the state line departments and ATMA, KVKs are playing only a limited role in field extension activities. The KVK technology demonstrations are called "frontline" as it happens for the first time in an area, whereas, line departments and ATMA conduct field demonstrations on large scale.

The High Powered Committee on Management of KVKs (ICAR, 2014) in its report has suggested a new vision, mission and mandate for the KVKs. This committee has defined the activities for each KVK as follows:

- On-Farm Testing (OFT) to assess the location specificity of agricultural

technologies under various farmings systems.

- Out scaling of farm innovations through Frontline Demonstration (FLD) to showcase the specific benefits/ worth of technologies on farmers' fields.
- Capacity development of farmers and extension personnel to update their knowledge and skills in modern agricultural technologies and enterprises.
- Work as Knowledge and Resource Centre for improving overall agricultural economy in the operational area.
- Conduct frontline extension programmes and provide farm advisories using ICTs and other media on varied subjects of interest to farmers.
- Data documentation, characterization and strategic planning of farming practices.

Performance of KVKs

In over four decades, several committees assessed the performance of the KVKs. Invariably every committee appreciated the huge potential of KVKs in delivering technologies to the farming communities including training farmers, farm women and rural youth (Box 2). Most of these committees suggested several changes required towards streamlining their performance. Unfortunately, many of the observations, suggestions and recommendation of these review committees were not taken up for implementation.

For instance, "van den Ban (1994) noted that many KVKs were found under resourced & have inexperienced staff. The World Bank (1990) found that many KVK training courses were under subscribed, raising doubts about their relevance. It was suggested to initiate an objective and scientific evaluation of all KVKs so that a case-by-case assessment could be made to guide the type and level of any further support. To intensify and enlarge such activities, it might be necessary to provide a few field level staff in each KVK (Farrington et al, 1997). Likewise, the Evaluation Committee on KVKs (1980), suggested that after imparting training to the farmers, these need to be followed up (ICAR, 1980). The 1996 Report on the Review of Extension System of ICAR also made several recommendations to strengthen the KVKs (ICAR, 1996). However, many of these suggestions have not been followed up.

Box 2: Achievements of KVKs

Some of the achievements of the KVKs during 2013-14 (DARE Annual Report, 2013-14) are as follows:

- **Technology Assessment and refinement:** Conducted 4189 on-farm trials on 537 technologies to identify their location specificity under different farming systems. 2,174 technological interventions were assessed by laying out 23,568 trials on the farmers' fields on various crops under different thematic areas. Besides, 452 technological interventions were assessed at 701 locations through 5,918 on-farm trials on animals covering a broad range of areas. Also, 143 farm-women specific appropriate technological interventions were assessed at 225 locations through 1,848 trials under the thematic areas, namely drudgery reduction, family resource management, health and nutrition, child care, processing and value addition and production and management.
- **Demonstrations:** A total of 1,897 trials were conducted at 309 locations to refine 253 technologies under different thematic areas. 1.71 lakh FLDs were organized by KVKs including 90,384 on crops covering an area of 26,399 ha. For popularization of improved tools and farm implements, 5,388 demonstrations on 3,229 ha farm area; 11,180 demonstrations on livestock enterprises; and 4,113 demonstrations on other enterprises including gender-specific technologies for women empowerment were organized. Out of the total FLDs, as many as 51,956 demonstrations were conducted exclusively on climate-resilient technologies under NICRA project.
- **Capacity Development/Training:** 61,495 training programmes were organized, wherein, 16.06 lakh farmers/farm women, rural youths and extension personnel participated. Skill-oriented training courses (7,489) were organized for 1.77 lakh rural youth, including 63,517 young women (36%) during the year. Capacity development programmes (5430 courses) were conducted for 1.18 lakh extension personnel, out of which, 28,289 were women extension personnel working in government and non-government organizations who were directly or indirectly related with the development of agriculture sector. The Zonal Project Directorates through their HRD programmes upgraded the knowledge and skills of 3,988 staff of KVKs by arranging 93 training programmes at various SAUs and ICAR Institutes in the frontier areas requiring capacity development of trainers.
- **Distribution of farm inputs:** 167.19 lakh quality planting materials of elite species of commercial crops, vegetables, fruits, ornamental, medicinal and aromatic crops, plantation crops, spices, tuber crops, fodder and forest species were produced and provided to 2.35 lakh farmers. Bio-products, namely, bio-agents, bio-pesticides, bio-fertilizers, vermi-compost, mineral mixture etc. were produced and supplied to the extent of 1.79 lakh q and 6.87 lakh numbers benefitting 13.74 lakh farmers. Animals of improved breeds of cattle, sheep, goat and buffalo including breeding bulls were produced and supplied to 800 farmers. Apart from poultry birds, pigs, rabbits, a total of 102.53 lakh fish fingerlings of different types of fishes were produced and supplied to 23,887 farmers.
- **Input Analysis:** A total of 2.91 lakh samples (soil, water, plant, and manure) were analyzed related to 2.29 lakh farmers of 0.37 lakh villages, with a revenue generation of Rs. 144 lakh.
- **Technology week:** under public-public and public-private partnership mode, was organized by KVKs benefitting 7.62 lakh farmers, farm-women, extension personnel, rural youth and members of self-help groups.
- **Mobile Advisory Services:** As a part of application of ICT in KVK system, Kisan Mobile Advisory (KMA) was initiated by the ICAR during 2010-11 to provide timely and need-based information to farming community. 3.89 lakh short text messages were sent to 16.28 lakh farmers on various aspects of agriculture, horticulture and animal husbandry, weather forecast and pest and disease control. In addition, 148 KVKs also sent 1,749 voice messages on different aspects of agriculture and allied enterprises to 30,752 registered farmers, which cumulatively benefitted as many as 10.04 lakh farmers.

The Performance Audit of Agricultural Extension activities in the ICAR by the Comptroller and Auditor General (CAG, 2008) is perhaps most revealing one about the state of affairs of KVKs and Zonal Coordinating Units. Based on a sample of 180 KVKs (13 from ICAR, 97 of SAUs, 53 of NGOs, 8 of State Governments and 9 Others) across the country, audited during May to November 2007, the CAG found:

- Eligibility criteria for possession of

minimum cultivable land were not observed in establishment of 50 KVKs (28 per cent). Most of the NGO KVKs (99 per cent) were yet to mortgage their land to ICAR. Further, improper site selection resulted in subsequent requests for change of selected sites and delay in conducting activities.

- 117 KVKs (65 per cent) did not assess location specific training needs based on

interaction with farmers and 53 per cent of the KVKs did not conduct training impact assessment. Shortfall in training courses for practicing farmers, rural youth and extension functionaries was observed in 121 KVKs.

- 94 KVKs (52 per cent) were still demonstrating older crop varieties released between 1948 and 1997 in Frontline Demonstrations. Average shortfall of 69 per cent was observed in 41 per cent of KVKs.
- 131 KVKs (73 per cent) did not conduct adequate number of on-farm testing.
- Inadmissible expenditure of Rs.5.70 crore was incurred by 123 KVKs on account of payment of salaries in higher pay scales and deployment of excess manpower.
- 44 KVKs (39 per cent) out of 114 established prior to the X plan were yet to fully establish mandatory infrastructural facilities. Further, infrastructure already constructed at a cost of Rs.8.15 crore remained unutilised in 46 KVKs. e-Linkage facility approved at a cost of Rs.41.02 crore for 200 KVKs during the X Plan was yet to be established as of January 2008.
- Only 0.34 per cent of the total rural youth trained were able to gain self employment.
- Coordination and monitoring of KVK activities by ICAR, ZCUs and KVKs were inadequate and needed to be strengthened. Shortfalls were observed in conducting meetings of monitoring bodies like Regional Committees and Scientific Advisory Committees.

Based on their observations, the CAG recommended that the KVK system must have updated, detailed and precise guidelines with clarity and precision. ICAR should formulate guidelines in respect of administrative and financial procedures for NGO KVKs.

The XII Plan Working Group on Agricultural Extension (Planning Commission, 2012) made following recommendations to make KVKs more effective:

- The KVK Farms should be developed as centres of excellence as role model for farmers. It needs to be ensured that every extension staff, including supervisory and administrative level officials, possesses

superior competency, skills and knowledge.

- Extension support is weak or non-existent in the case of animal husbandry and fisheries. As separate extension machinery for animal husbandry and fisheries are not going to be feasible in many states, this has to be integrated with ATMA. In districts where livestock and fisheries play a major role, staffing structure within ATMA and KVKs should be modified to include more staff with specialization in these sectors.
- The changing roles of and expectations from KVKs necessitate regular capacity building of its professionals. Hence, exclusive capacity building programmes shall be designed and conducted (like induction training, refresher courses, management and executive development programmes) for effective implementation of the mandated activities and image building/ branding of KVK system. NAARM, Agricultural Extension Division of ICAR and Zonal Project Directorates will jointly take up the responsibility for this.

To make KVKs more vibrant and visible, the ICAR recently constituted a High Power Committee (HPC), to review all issues pertaining to KVK system and suggest measures for improving their efficiency and relevance so as to meet the current expectations of stakeholders. This committee, since then has submitted its report (January, 2014), suggesting measures to improve relevance, efficiency and guidelines for implementation of policies for KVKs (<http://icar.org.in/en/node/8017>). The Committee has made recommendations on the mandate and domain of KVK activities; establishment and infrastructure; co-ordination, implementation and monitoring; convergence and linkage; administrative guidelines; financial management and visibility of the KVK System (<http://www.icar.org.in/en/node/7158>).



The key recommendations from this committee are as follows:

- a. The KVK Scheme is being funded from the Plan Budget since its inception (1974). Hence, the funds required for efficient functioning are often not available to the required extent as major component goes for staff salary. Therefore, it is critical now to project a part of the expenditure under Non-Plan instead of booking the entire expenditure under Plan. Accordingly, It is proposed that the requirement of funds in respect of eight ZPDs and KVKs (Salary, Travelling Allowance (TA), contingencies, HRD etc.) established till the end of X Plan (those in existence for more than five years) be allowed to be included under Non-Plan from the beginning of XII Plan period.
- b. With ever-growing nature and quantum of workload of each KVK, the existing six SMSs are finding it difficult to cope up with their responsibilities. It is, therefore, recommended that four additional posts of SMSs (Scientists) should be created in each KVK, thus, increasing the number of SMSs to 10. This is especially more important since lot of additional work is being entrusted to KVKs time to time, for instance, the KVKs undertook activities under NAIP (National Agricultural Innovation Project) and NICRA (National Initiative on Climate Resilient Agriculture). (<http://www.nicra-icar.in/nicrarevised/index.php/technology-demonstration>).

Perception on Performance

Over the past few years, there have been several reports in the media on the selection and governance of KVKs. Many of these reports have been highly critical of the way these KVKs were sanctioned to politicians and their affiliates (<http://archive.indianexpress.com/news/seeds-of-political-patronage/1116240/>).

- Appreciably the current government has taken note of such reports and constituted six member enquiry committee (<http://indianexpress.com/article/india/india-others/panel-to-inquire-into-functioning-of-kvks/>) in December 2014, headed by a former Agriculture Secretary. This panel has since then submitted its report(<http://indianexpress.com/article/india/india-others/follow-norms-says-krishi-kendra-review-panel/>).
- Based on its visit of just 4 KVKs (three run by Agriculture Universities and one run by an NGO) close to Delhi, it found that the KVKs don't follow norms and mostly

they lack expertise in the area of processing and value addition; agro-meteorology; agri-business; and diagnostic services. This panel has recommended that: In the case of NGOs, their credentials of dedicated working for espousing the cause of farmers and development of agriculture may be thoroughly examined before sanctioning KVK. The basic norms and criteria of quality sizeable land and potential of the host organisation to effectively implement the KVK activities should not be compromised.

- Skill Development training for rural youth has to be given more emphasis by KVKs. The process of skill development may be strengthened by establishing linkages of KVKs with National Skill Development Council.
- KVKs should forge PPPs at the district level to technically support the initiatives of private extension service providers.
- Apart from the quinquennial (recurring every five years) review, external evaluation may also be initiated for critical monitoring and evaluation of KVKs. The number of Zonal Project Directorates may be increased for better monitoring.
- KVKs should be linked up with Sansad Adarsh Gram Yojna, Pradhanmantri Sinchai Yojna and MNREGS, so as to proactively identify suitable technologies, service providers, experts and organisations.

Implementation of all these recommendations is important to improve the effectiveness of the KVKs. Even with many of the limitations pointed out by the different committees, the KVKs have made important contributions to improving production, productivity and farmers' income. The ICAR has also made tremendous efforts to recognize and reward the innovative and good work done by KVKs. Over the years, several KVKs have won the ICAR Best KVK award at Zonal Level as well as at the National level. These KVKs can be role models for other KVKs and in fact such KVKs should come forward to train the staff of underperforming KVKs.

Several KVKs have been doing outstanding innovative work in their mandated activities across the country, but the good practices being followed by these KVKs are not highlighted properly outside the KVK conferences and KVK Zonal workshops. Such innovative KVKs and their success stories need to be brought to the notice of wider

extension/development community. This can be done effectively, if good practices are published on online portals like AESA (Agricultural Extension in South Asia, which encourages such documentation (<http://www.aesanetwork.org>).

KVKs and ATMA: The need for Coordination and Convergence

With the support of the Ministry of Agriculture, Agricultural Technology Management Agency (ATMA) is currently under implementation in 614 districts of 28 States and 3 UTs in the country. ATMA provides an institutional mechanism for coordination and management of Agricultural Extension System in the district (Box 3).



Box 3: Agricultural Technology Management Agency (ATMA)

Agricultural Technology Management Agency or (ATMA) is responsible for all the technology dissemination activities at the district level through linkages with the line departments, research organizations, NGOs and other agencies associated with agricultural development in the district. Research and Extension units within the project districts such as ZRS or substations, KVKs and the key line Departments of Agriculture, Animal Husbandry, Horticulture and Fisheries etc. are constituent members or Key stakeholders of ATMA. Each Research-Extension(R-E) unit retains its institutional identity and affiliation but programmes and procedures concerning district-wise R-E activities are determined by ATMA Governing Board to be implemented by its Management Committee (MC). The objectives of ATMA are as follows:

- To strengthen research – extension – farmer linkages
- To provide an effective mechanism for co-ordination and management of activities of different agencies involved in technology adaption / validation and dissemination at the district level and below.
- To increase the quality and type of technologies being disseminated.
- To move towards shared ownership of the agricultural technology system by key shareholders.
- To develop new partnerships with the private institutions including NGOs.

KVKs & ATMA are expected to work in true partnership mode, wherein, the KVK function as a frontline extension system, while, ATMA- as a field extension agency work for large scale technology dissemination/adoption, out-scaling of successful technologies/innovations through large-scale demonstrations and further verification/validation etc.

A joint circular was issued in January 2011 by the ICAR (Department of Agricultural Research and Education) and Department of Agriculture and Cooperation (Ministry of Agriculture, Government of India) on required linkage between KVKs and ATMA, elaborating their joint responsibilities (<https://drive.google.com/file/d/0B0TX5SvS4IMReTUtMWNra0xYVFU/view?usp=sharing>).

The guidelines provide mechanism for close involvement of agricultural research system represented by ICAR Institutes, SAUs and KVKs and State agriculture and allied departments by pooling funds, resources, programmes and manpower to enable the farmers to draw full benefits of technological advancements as per

local needs. The Ministry of Agriculture issued new guidelines for ATMA in 2014 and this also emphasized the need for better coordination and convergences between ATMA and KVKs (Box 4).

The High Power Committee on Management of KVKs recommended that the PD, ATMA and his team should plan periodical joint visits to the cluster villages of KVKs for gaining first-hand knowledge on new technologies being demonstrated so that activities could be initiated under ATMA for large-scale disseminations. Apart from cluster villages, the problems or issues noticed by PD, ATMA and his staff in other villages could be brought to the notice of KVK staff to ensure necessary follow-up.

The KVK conferences are important forum to review & share the performances of KVKs at national level wherein, among other things, the ATMA-KVK convergence issue is also prominently discussed. For instance, the 7th KVK conference held at Ludhiana, recommended that the successful process and methodological aspects of KVK-ATMA convergence should be documented elaborately and made available to all

Box 4: ATMA and KVKs- Roles expected in the Modified ATMA Guidelines-2014

These new guidelines were issued for better coordination & convergence between ATMA & KVKs. The salient points from this guideline are as follows:

- The Programme Coordinators (PCs) of KVKs in the district should not only regularly participate in the ATMA GB & Management Committee, but also should have an interface meeting with the Project Director (PD), ATMA once a month during the cropping season and work out a strategy of providing crop advisories to farmers for various stages of crop growth.
- The SMSs of KVKs will advise and mentor Block Technology Teams in identifying technological needs in various Blocks in the District and programmatic interventions to meet such needs.
- Comprehensive District Agriculture Plan (CDAP) or District Agriculture Action Plan (DAAP) under ATMA developed on the basis of the Strategic Research and Extension Plan (SREP) should be refined in the process jointly by ATMA and KVKs from the Block level and acted upon for the purpose.
- PD ATMA and PC of KVK should jointly visit at least five villages every month in the District to guide and supervise the extension related work assigned to scientists and the extension officers, including BTM & SMSs supported under ATMA.
- At the end of the month, a joint progress report will be submitted by the PD, ATMA and PC of KVK, to the Secretary (Agriculture)/Director (Agriculture) of the State and the SAU.
- In consultation with the Secretary (Agriculture) of the State, the Vice-Chancellor(s) of the University (ies) will allocate districts to specific scientists in the SAU, who would interact again with the ATMA and KVK of the assigned districts and provide technological inputs to the farmers through this mechanism.
- ATMA and KVK should coordinate with each other in the conduct of Field Days, Kisan Melas, Goshties and setting up of Farm Schools, so that there is no duplication in coverage and they should ensure percolation of appropriate scientific practices down to the field level.
- ATMA Management Committee having PC, KVK as its member may review the progress of technology application - related activities funded by ATMA. Besides this, the KVK may also provide an Agricultural Technology Update (ATU) on half yearly basis i.e. before the start of Kharif and Rabi crop seasons to the ATMA for its wider dissemination among the farmers of the district.
- KVKs will provide advice to ATMA and the District Administration for the implementation of Flagship programmes of the DAC namely – NFSM, NHM, RKVY, NAIS etc. The KVK Scientists will technically advise the Block Technology Teams (BTTs) and will also be actively involved in preparation of Block Action Plans (BAPs), especially with regard to research related issues/gaps and strategies. Regular participation of a KVK scientist in the meetings of BTT will be ensured at least once in a quarter. The participating scientist will also take feedback for his colleagues in the KVK in respect of their respective areas of expertise.
- Zonal Project Directors (ZPD), State Agriculture Commissioners / Directors and directors (Extension) of the SAUs concerned shall together take a quarterly meeting with KVKs and ATMAs.

the stakeholders for replication as per the needs of the district. Also, it was observed that the fund flow from ATMA to KVKs is highly skewed and varies from district to district and hence there is a need for uniformity in fund flow to all the KVKs and must be provided to KVKs directly (www.icar.org.in/files/KVK_NC_2013%20Final.pdf). In this conference, it was noted that Feed forward provided by the KVK to ATMA and the utility of feedback received from ATMA in preparation of action plan of KVK has been a major gain of the convergence and needs to be harnessed appropriately.

Though such efforts are promoting convergence, a lot more still required to be done to institutionalize and strengthen convergence.

Staff shortage, fear of loss of power and control on resources and lack of capacity in designing locally relevant programmes are constraining achievement of real convergence. At the field level, the success of these convergence efforts is yet to be visible.

Way Forward

The latest Situation Assessment Survey of Agricultural Households in India (NSSO, 70th round), based on a countrywide survey (July 2012-June 2013) of nearly 35,000 households revealed that "farmers continue to remain far removed from new technologies and guidance from state run research institutes including KVKs" (NSSO, 2014). Over 59% of the farm households received no assistance from either

government or private extension services. Of the 40.6% households who received extension assistance, only 11% of the services came from physical government machinery- extension agents, KVKs and agricultural universities. More farmers depended on other progressive farmers (20%), media including radio, TV, newspaper (19.6%) and private commercial agents (7.4%). Such findings make it imperative that the KVKs improve their functioning. This is possible, if the observations/suggestions of various committees as discussed above are taken into account, while being more proactive and creative in undertaking the mandated activities. Some of the suggestions summarized here may be useful towards making KVKs more vibrant:

Entrepreneurship Development: KVKs must develop farmer entrepreneurs, who can further help in technology transfer through mechanism of farmer to farmer extension. This is possible only when the KVKs rise above the routine activities they often perform mechanically. KVK trainings should promote entrepreneurship among rural youth, helping them in gaining self employment.

Promotion of diversified farming systems including Agro-tourism: KVK farms and KVK adopted villages can be developed as agro-tourism sites, to demonstrate diversifying farm income portfolio. KVKs' demonstrations must be cost effective for adoption by farmers.

Resource Generation: KVKs can compete and tap funds available from various government schemes/NABARD/Agricultural Skill Council of India for skill & entrepreneurship development in rural areas. KVKs should be in a position to generate a part of their resources from the sale of planting materials and other produce from their farms. Training programmes can also be charged for to some extent. KVKs must seek long-term funding relationship with local constituencies, such as NGOs, and with national and international organisations. There is over dependence of KVKs on ICAR funds currently. Lack of funds for off campus training and on-farm farm trials is a routine excuse in majority of KVKs.

Address capacity gaps: KVKs are meant to enhance capacities of farmers and other extension staff, but often the KVK staff lack in capacity especially in the fast emerging areas of agricultural technology which are more knowledge

& skill driven. Apart from updating technical skills in the area of their respective subject, the KVK staff, especially the PCs, need to be trained on innovation management (Sulaiman et al, 2014). Capacities to perform several functional skills related to networking and partnership building; enhancing access to technology, expertise, markets, credit and inputs; setting up/strengthening user groups, advocacy for institutional and policy changes, reflective learning etc., have to be enhanced through trainings, action learning initiatives, exchange of good practices across KVKs.

Clarity on governance: Lack of clarity on governance is a big issue affecting the KVK functioning. The role and responsibilities of Vice-Chancellors/Director of Extension in KVKs under SAUs; Directors of ICAR institutes in the case of KVKs under ICAR and Trustee of the NGO in the case of KVKs under NGO have to be clearly spelled out. Quite often the PCs of the KVKs have to do the balancing act between the ZPDs & their respective controllers who often have conflicting priorities. In some of the KVKs, full autonomy has been given to PCs, while in most of them they have to be at the mercy of others who takes decisions on administrative and financial aspects.

ATMA-KVK link: Lot more needs to be done to achieve the convergence between ATMA and KVK (as envisaged under the joint circular) operational. There might be some success stories, wherein, the proposed changes like quarterly joint meetings, earmarking of funds to KVKs, visit of ATMA staff to the cluster villages of KVKs and ATMA sponsorship for Technology Weeks (being organized by KVKs) are achieved successfully, which may be shared for wider replication in other districts.

Role of Zonal Project Directorates (ZPDs): The ZPDs co-ordinate the activities of KVKs under their jurisdiction in the respective zones (often with limited staff). The ZPDs need to be proactive not only in collection of data, preparation of reports for prompt onward transmission to Agricultural extension division of ICAR, effective monitoring & evaluating the performance of KVKs under their jurisdiction, but also in guiding/facilitating the KVKs to play more wider roles to promote and apply new knowledge. They could also play a major role in documenting and analyzing good practices and generating quality evidence on performance of new technologies.

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INSTITUTIONAL CONVERGENCE FOR AGRICULTURAL DEVELOPMENT: THE CHANGING ROLE OF EXTENSION

Extension agencies globally face the twin challenges of limited finances and manpower. However, some extension agencies manage these challenges and achieve larger impacts by converging their efforts with others. Based on their experiences with convergence of activities at the Krishi Vigyan Kendra (KVK) in Khordha under ICAR-Central Institute for Freshwater Aquaculture, Bhubaneswar, Odisha, PN Ananth, S Babu, NK Barik, AK Dash and JK Sundaray demonstrate how convergence at the KVK level can enhance innovation and impact.

Krishi Vigyan Kendras (KVK), the farm science centres, have been claimed as one of the major institutional innovations of the NARS (National Agricultural Research System) in India. KVKs act as knowledge and resource centres for the district extension system in India. KVKs are fully sponsored by the Indian Council of Agricultural Research (ICAR) and are authorised to organise technology assessment and refinement. Apart from this they also organise demonstrations to provide technological backstopping to state agencies at the district level and training to farmers (Box 1). Agriculture is considered to be a state subject which means that states are mainly responsible for agricultural development. But KVKs are centrally sponsored. The KVKs work closely with the state governments in providing information and knowledge on latest innovations, along with technologies and updates on agriculture and allied sectors for district agricultural development.

Though KVKs are knowledge and resource centres of the district, the organisation is plagued with low budgetary provisions and inadequate manpower, which inhibits its ability to cater to the district's extension system, farmers, and other stakeholders. On average, a district in India has 10 blocks and between 1000-2000 villages ranging in area from 2500-3000 sq. km. So the potential coverage for a KVK is fairly large. However, each KVK is manned by only six subject matter specialists with one scientific cadre staff heading the unit, and has an annual budget of one crore (almost 80% of this amount is spent on salaries).

Why Convergence for KVK?

There is a general misunderstanding that a KVK has to cover the whole district (as it is a district level organisation) with its extension services. The latest directive speaks on Technology Assessment and Demonstration for its Application and Capacity Development. The earlier directive had also mentioned Technology Assessment, Refinement and Demonstration. Additionally many consider and feel that KVK is a training centre. Training of KVKs are part of the demonstration programmes and a standalone activity. Demonstrations too differ from the state government's way of demonstration as it is unique being a Front Line Demonstration (FLD). The FLDs of KVKs means that a cutting edge innovation/technology is demonstrated for the first time in the district involving scientists and extension workers of the state government.

Though the mandates of KVKs clearly indicate that it is entirely different from a full time

extension agency, many expect it to function like a district level extension agency. For instance, if a technology being assessed by KVK is found to be feasible and productive for farmers, many believe that it is the role of KVK to extend its outreach to the entire district. But it must be kept in mind that KVKs are not

appointed to play this role. Apart from this, they are also not in a position to do this because they lack adequate budget and manpower. However, it is possible for KVKs to expand viable, assessed and demonstrated technologies if they work with other partners at the district level.

Box 1: Achievements of KVKs

- All over the country KVKs have conducted 29,805 on-farm trials on 3301 technologies at 4312 locations – to identify their location-specific advantages under different farming systems;
- KVKs have organized 129,678 Front Line Demonstrations (FLD) to demonstrate the production potential of newly-released production technologies on farmers' fields;
- Trained more than 1.3 million farmers/farm women, rural youths and extension personnel in agriculture and allied fields;
- Conducted a large number of extension activities benefiting about 19.87 million farmers and other end users;
- Produced more than 339,000 quintals of seeds and 147.56 million sapling/seedlings/livestock strains, as well as various bio-products made available to farmers;
- Sustained functioning of 44 Agricultural Technology Information Centres in ICAR institutes and SAUs;
- Organized 358 capacity development programmes for 9878 KVK personnel;
- Organized 268 interface meetings involving scientists and development officials at the district level.

Source: <https://kvk.icar.gov.in/ABOUTKVK.ASPX>

There was an extensivereform during 2014-15 wherein KVK Heads were re-designated as Senior Scientists and Heads from the former designation as Programme Coordinators – this was done in order to leverage the district administration. The Heads of KVKs currently sit in the front row in meetings whereas earlier they used to sit at the back. Now it is time for KVKs to work on realistic district action plans and play proactive roles in extending the reach of its activities (although still plagued with low investments and manpower). This expansion process is always in the hands of KVKs, but it can happen only via self-induced practices/personal traits in the personnel working in KVKs rather than through external push factors (especially in the case of Heads of KVKs). With set mandates KVKs normally assess a technology, demonstrate, train and then sends it the state government for scaling out (a linear model is what a government-sponsored official offers). Such a linear model will not be good for better reach of technologies assessed and demonstrated by KVKs.

KVKs now have to devise mechanisms to overcome the challenge of low investments and inadequate manpower. This blog gives details on how a KVK in the eastern state of Odisha (in India) has expanded its activities, covered more farmers, and provided technical backstopping to other organisations using similar partners in the district and many other ways, including tapping into Corporate Social Responsibility (CRS) funds. The experiences

shared here are from KVK-Khordha, which works in the district of Khordha, under the administrative control of ICAR-Central Institute for Freshwater Aquaculture.

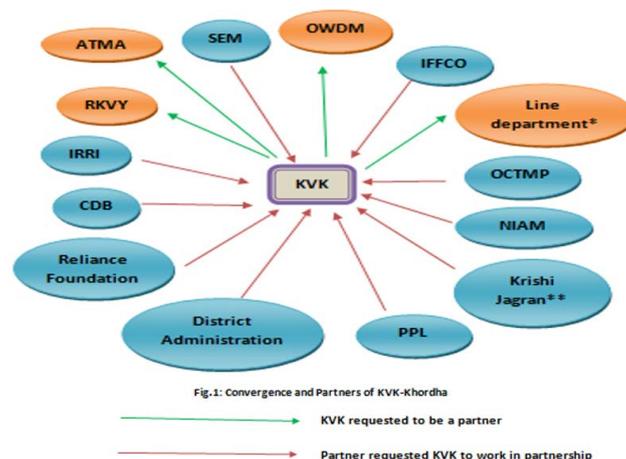
Approach Envisaged by KVK-Khordha

With an idea to expand its activities for better reach, the KVK made an action plan and named it as 'People and Partnership'. The approach was launched in 2012 in collaboration with various agencies to improve delivery of technical and extension services in a convergence mode. Since, then KVK-Khordha has been working with more than 21 partners, such as Employment Mission (GoO), ATMA-Khordha (GoO) supported by GoI, Odisha Community Tank Management Project (OCTMP) (a World Bank-aided project of GoO), District Rural Development Agency (DRDA) (GoO), National Council of Rural Institutions (NCRI) (GoI), Watershed Mission (GoO), Bringing Green Revolution to Eastern India (BGERI) a GoI-aided GoO project, Odisha Watershed Development Mission, Indian Farmers Fertilizers Cooperative (IFFCO), Coconut Development Board (GOI), Paradeep Phosphates (Pvt), Krishi Jagran Media group, Reliance Foundation, National Institute for Agricultural Marketing, RKVY-Odisha, and many others. Having understood the background this blog goes on to cover the nature of convergence initiated by a KVK marked with limited funding and manpower.

Analysis on the Convergence

A brief analysis of the initiative is imperative as the aim of working with partners (Table 1) is for mutual benefit with main focus on strengthening farmers in terms of increasing their incomes. The convergence envisaged by the KVK has yielded better outreach of activities and benefits to farmers that have been realised over time. By converging its activities with the efforts of others, the KVK started playing the role of a bridging organisation as envisaged under Extension Plus (Sulaiman and Hall 2004; Sulaiman 2012). As a bridging organisation at the district level with much better grasp of the ground situation, the KVK could better support agricultural extension system with aspects related to technology backstopping, integration, and management.

As the KVKs are not formally mandated to do these roles, they often concentrate more on organizing programmes by themselves. However, KVK-Khordha was well ahead in understanding its position and presence in the district and demanded to work with partners having its own capacity. The KVK identified partners who have



*District Extension Agencies of the government for agriculture, horticulture, veterinary and dairying, fisheries and other development missions
 ** A media house with a farm magazine in Odia

KVK Krishi Vigyan Kendra, OCTMP-Orissa Community Tank Management Project, OWDM-Odisha Watershed Development Mission, SEM-State Employment Mission, ATMA-Agricultural Technology Management Agency, IFFO-Indian Farmers Fertilizers Cooperatives, IRRI-International Rice Research Institute, CDB-Coconut Development Board, National Institute for Agricultural Marketing, PPL-Paradeep Phosphates Ltd.

similar objectives for expanding its activities. A brief analysis on the few partners with benefits from the KVK is presented in Table 1.

Table 1: Objective, mechanism, funding pattern, achievement and lessons learnt of the approach

Partner	Objective of partnership	Mechanism of partnership	Funding and sharing of resources	Achievements	Lessons learnt
Employment Mission	Developing entrepreneurs in freshwater aquaculture	Joint implementation	Full funding and sharing of expertise	143 entrepreneurs developed (one-month long skill development training)	Long-term capacity building is key for developing entrepreneurship
Orissa Community Tank Management Project	Support to agricultural livelihoods	Joint implementation	Full funding for implementation by the partner with additional manpower	412 ha of land under line sowing in paddy; 25 ha of community tanks under fish culture; 80 units of backyard poultry; 85 trainings benefitting 2285 farmers; trained 180 master farmers	Short-term partnerships to achieve targets in a livelihood project is a constraint
Odisha Watershed Development Mission	To train farmers on off-season vegetable cultivation	Implemented capacity building with own design	Full funding and expertise sharing	210 farmers trained in off-season vegetable cultivation; Unique guide for off-season vegetable cultivation in the local language	Absence of funds for assessing impact
District Administration	KVK key in the district extension system	Joint implementation of activities	Full funding and sharing expertise	Awareness camp--cum-workshop for 50 fish farmers to link with state schemes; and 120 farm women on drudgery reduction	KVK - vital for the district level extension system

National Council for Rural Institutions	Promoting rural enterprises	Implemented with own design	Funding on completion of the program	Training on rural enterprise for 35 farmers – trained on rural technologies	One time initiative for promoting rural enterprises is an uphill task
ATMA	Problem solving skills and feedback	Independent and joint implementation of activities	Formal allocation of funds to KVK by ATMA for validation trials and other activities	Technical backstopping to bring 10,000 ha of paddy cultivation by adopting the practice of line sowing; Organised validation trials on crops; Sharing expertise on suitable technologies for promotion in the district; Support to prepare Strategic Research and Extension Plan (SREP); Key member to prepare the Comprehensive District Action Plan (C-DAP); Interface meetings to scale up best practices for larger development in the district; Trained 850 progressive farmers identified by state actors	Personal relationships are key. Although it is mandatory to provide funds by ATMA to KVK, yet lobbying is required
Coconut Development Board	Focus on employment for rural youth	Joint implementation of skill development training	Full funding	210 rural youth trained in using coconut climbing machine; 210 climbing machines provided free of cost	Providing skill development training and support of a climbing machine can create impact
National Institute for Agricultural Marketing (NIAM), Jaipur	Develop a model to connect fish farmers to best marketing ways (Aquaculture Business Schools)	Development intervention in critical stages of fish production; and connecting to better markets	Full funding	Formed one aquaculture business school (other activities ongoing)	Model to be scaled up using different methods
RKVY	Developing and strengthening of Demonstration Unit of KVK	Infrastructure development to KVK	Full funding (INR 78 lakhs)	Construction of eight additional demonstration units	Critical inputs for providing certain innovations will be realised
International Rice Research Institute	Introduce innovations to reduce post-harvest losses	The new innovations of IRRI, such as Solar Bubble Dryer, cocoon and supper bags have been provided to KVK worth INR 2.5 lakhs to create awareness and demonstrate its usefulness	Full funding	Demonstrated the innovations in five villages	Most of the innovations of KVK are related to production aspects. KVK has started working extensively by demonstrating innovations related to reducing post-harvest losses with this partner.

Private-1 Paradeep Phosphates Ltd	Soil health cards (SHCs) using CRS funds	Achieve the target of providing SHCs	Financial support for providing SHCs	3000 soil health cards prepared and distributed; Support for a few farmer scientist interactions on soil fertility management	Realised the expertise of private sector; Tapping into Corporate Social Responsibility funds
Private-2 IFFCO	Product testing and upscaling	On-farm testing and joint demonstration of IFFCO products	Financial support	Seven products tested and reports provided; Introduced IFFCO products through cluster demonstration initiatives of KVK	Tapping both expertise and importance of KVK as a certifying agency
Private-3 Krishi Jagran (KJ) Media group	Using print media (monthly magazine for extending outreach)	Joint decision on content for Odia KJ farm magazine and digital platform of KJ Odia	Agreed that KVK should have two articles in all issues of the magazine (monthly). KVK suggests innovations, and technology assessed and demonstrated for KJ Odia for each issue. Joint content creation	Contents for Odia KJ since eight months (and continuing). Increased visibility for KVK-Khordha in Odisha, even though it is just a district level organisation	Realising the power of print media
Private-4 Reliance Foundation	Extending outreach through media	Sharing expertise	Investing in events	Organised eight video and audio conferences for farmers at out of rangeplaces	Reaching unreached farmers using media tools



Impact of convergence on the KVK's mandatory activities

1. A KVK that used to work on technology assessment with 22 technologies each year before convergence has now grown to include 40 as there has been demand from partners to assess technology for adaptive trials and to provide results for scaling up.
2. In most instances, before convergence 'fordism'¹ prevailed; but after convergence, most of the interventions were need-based as the KVK was contacted by partners to decipher their problems by sharing expertise and resources. Understandably, the KVK took on a new role in extension delivery.
3. Through partnerships the number of trainings organized increased from 73 to 110 every year, benefitting more than 5000 farmers. The core competencies of the KVKs shifted from – relevant technology assessment to scanning the need for technological interventions, to simple delivery of package of practices through demonstration – towards farming system models. The KVK's investment per training increased from INR 5000 to INR 45,000 and then to INR 1,20,000 as the shift moved from short-term to long-term.
4. During 2005-2010, the number of beneficiaries was 6000/year; and since 2012-2017 after

implementing this approach, it has grown to 12,000/year, for which a number of partners are responsible.

The coverage of the KVK has expanded considerably to all the blocks whereas before convergence the reach was only to five out of 10 blocks in the district.

Convergence: Before and After

Enhancement in outreach was the key outcome of this convergence as it was visualized shrewdly by the KVK. Nonetheless, with this key outcome many other advantages were also observed over a period of time. The reason to keep enhanced outreach as the key for partnership was the recognition that the KVK had poor visibility, had fewer interactions, was secluded, and also had many other problems. This was the state of affairs despite possessing capabilities higher than other extension organizations in the district.

It is an accepted fact that before convergence, the KVK was an isolated institution with minimal reach and had to achieve the set targets with available resources and manpower.

As a result of convergence, improvements arising from expertise, use of different multiple extension methods, use of innovative approaches in demonstrations, transformations in training pattern and other activities, were observed (see Table 2).



¹The so-called 'Fordism' (Chambers 1992) is a central hindrance to reform, since farmers will not make demands, and extension service providers will not consider locally perceived needs if both assume that extension only deals with fixed packages.

Table 2: Measures of convergence output of KVK-Khordha

Functions	KVK before convergence	KVK after convergence
Convergence with other institutions (No.)	1	21
Technology assessment/year (No.)	21	40
Interaction with research system	Prevailed	Strengthened
Involvement of scientists and academicians in KVK activities	Prevailed	Increased
Coverage of technology demonstration	Low outreach	High
Approaches in demonstration	Traditional	Cluster and block demonstrations
Expertise	Involved in basic demonstration of improved practices of crops, fruits, vegetables	Enterprise development
Trainings/year	73	110
Typology of training	Short duration (1-2 days)	Long-term (5-30 days)
Core competency expedited	Package of practices in lecture mode	Skill acquisition
Extension methods in training	Predominantly lectures	Multiple extension methods
Investment in training on one unit (INR)	5,000	45,000 to 1,20,000
Farm and rural advisory services in terms of beneficiaries (No.)	2000-2500	12000
Advisory delivery methods	Farm and home visits and all other traditional methods	Mobile, Short Message Service (SMS), WhatsApp and other ICT tools, audio and video conferencing
Interaction with other extension agencies	Prevailed	Increased
Participation in meetings	Low	High
Institutional investment on extension/year (INR)	70-80 lakhs	100-120 lakhs
Outreach and capacity of rural poor as service users	6000 farmers	12,000 farmers
Extension activities	Traces	50 events/year
Involvement with private sector	Traces	10-12 private sector and Corporate Social Responsibility funds are invested in KVK
Coverage	5 blocks of the district	All 10 blocks of the district
Green services	Traces	Increased to a considerable extent
Fordism	Prevailed	Changed
Trust and cooperation	As usual in business	Unusual (heightened)
Prominence in the pluralistic extension system	Existed	Enhanced
Demonstration units	2	12

New Extension Roles

The increased funds and involvement of more partners in demonstration of improved practices had greater impact – by involving additional farmers, adopting practices uniformly, introducing farm-mechanization, and putting into place a strong monitoring and evaluation system.

In most of the instances before convergence, Fordism prevailed and after convergence, most of the interventions were need-based as the KVK was approached by partners to decipher their problems by sharing expertise and resources. Understandably, the KVK took on a new role in extension delivery which is presented in Table 3.

Table 3: New roles of extension upon convergence

Strategic questions	Expected new roles required	Perception of KVK's new role in extension delivery after envisaging convergence
How to win trust and cooperate with partners having similar mandates?	Developing a commitment to actively explore ways to work together with small-scale farmers and rural producers	Prevalence of a commitment towards exploring possible ways to serve farmers involving multiple stakeholders; Due to involvement of partners, the KVK could identify the needy farmers that it has to work with.
How to target and achieve equity?	New approaches to overcome the elite, high-external input, and gender biases which have affected extension	Shift from traditional capacity building initiatives to skill development, towards eliminating high external-input agriculture to low external-input sustainable agriculture; New approaches, like cluster demonstration and training master farmers, were envisaged.
What is the mode of integration for better outputs?	Efforts to be focused on a realistic set of service components related to information and communication about agricultural technologies, keeping farmers' needs in a complex environment	Majority of the works have been demand-driven focussing on agricultural technologies that are relevant to the operating environment of the farmer; Partners sought help of KVK as they needed to partner for sharing resources and expertise.
How effectively can an extension agency like KVK use extension pluralism?	Enhancing the effectiveness of one agency to work strategically within a multitude of organizations and individuals that provide information and other services to farmers	Clearly brought multiple stakeholders into the fold to jointly deliver information, knowledge, and skill for boosting farmer and institutional capacity; Enhanced outreach was possible due to convergence.
What is the view from the field, i.e., from end users, of the KVK?	Objectives and approaches focusing on poor farmers be operationalized by extension agents in their day-to-day tasks	Sharing of resources, expertise and other aspects of each partner made KVK look closely into the field and carry out day-to-day tasks.

The shift has been from target crops to people through all these initiatives, as the KVK has responded to farmers' needs rather than to partners' needs. The whole convergence experience of the KVK deduced that rural development is complex; and demands that farmers, their neighbours, input salesmen, local officials, and other actors meet and negotiate to arrive at joint decisions for addressing complex problems of natural resource management (as

observed by Christoplos 1996). There is very little empirical research on the Agricultural Innovation System (AIS) and on how partnerships are formed, and how they affect extension service provision within AIS (Ragassa et al. 2016). Our experience fills this shortcoming to some extent.

Lessons

Firstly, the key to the success of this initiative of institutional convergence has been the mutual

understanding between a KVK and its partners, which has been complementary in terms of sharing resources and expertise. Both the KVK and partners have been in synergy due to the clear understanding of their respective strengths and weaknesses within a pluralistic extension system. It is worth researching whether partnerships are externally induced or self-induced, and why a partner demanded to partner? Questions may arise several times on why an extension services providing agency needs another partner. Given these arguments, it also means that similar extension organizations in a region should work with strong linkage mechanisms, and the government needs to be proactive in inducing partnerships.

Secondly, given the experience of this initiative it is evident that restrictively-funded public extension services providing organizations with rich diversified knowledge and expertise, can perform better with the help of partners for convergence of ideas, resources, and expertise. Their ability to drive agricultural development should also be beyond reproach. It is also evident that partnerships will continue only as long as

mutual benefits exist, and withdrawal is common when goals diverge. It must be inferred that partners can continue only through continuous dialogue and interactions, especially when new targets and innovations are to be delivered. In the present context of climate change and its impact, most of the agricultural extension agencies need to collaborate as pooled expertise is vital for providing appropriate solutions to farmers. Development projects/programmes should be forced to have dedicated partnerships in order to reach end-users effectively, and also to disseminate its many benefits to a larger audience.

Way Forward

In the increasingly pluralistic extension landscape, partnerships are going to be the key to design and delivery of effective and efficient extension. Frameworks such as Best Practice to Best Fit (Birner 2006), Extension-Plus and Agricultural Innovation Systems (AIS), too emphasize this. Extension professionals need to learn how to fit themselves into the existing AIS, rather than wait for policy directions from the top – if they want to remain relevant in these changing times.

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CONVERGENCE FOR SYNERGISTIC EFFECT IN DAIRY DEVELOPMENT

Convergence of different entities working for synergistic effect in dairy development is the need of the hour. VB Dixit, Hema Tripathi, A Duhan and IJ Singh share their thoughts in this regard.

There is an increasing demand among the farmers for knowledge on improved dairy technologies. However, due to lack of convergence among the different agencies involved in dairy promotion, these needs are not sufficiently met. The public extension system has failed to respond to the demands for knowledge support as it doesn't have adequate human and financial resources. Moreover, its bureaucratic nature of functioning and the huge load of administrative responsibilities on its field level workers have rendered the public extension services supply driven rather than demand driven. Without convergence of efforts by the varied public, private and NGO agencies involved in dairy development, we would fail to reach a large number of dairy farmers with the new and improved knowledge of dairying.

What is Convergence?

The word convergence has been derived from Latin word '*convergere*' which means to incline together. According to advanced learner's dictionary, convergence suggests that when people get along with each other for long enough, their acts, thinking and even appearance will become alike. Thus, convergence is mainly sharing of ideas, resources, manpower, knowledge and experiences of different entities which have different backgrounds for a common purpose i.e. dairy development resulting into synergistic effects of their combined efforts for ultimately enhancing the income of farmers.

Why Convergence?

Systems and institutions co-exist addressing the needs of farming community so as to derive synergistic advantages of both. There are pluralistic extension organizations working in the state. A lot of manpower is being utilized in this process. There is duplication of efforts with multiplicity of agents in extension work without convergence or coordination, resulting in loss of efficiency. In order to reduce the redundancy, repetition and better utilization of scarce resources, convergence and better linkage is required in Public Private Partnership mode.

Public organizations are strong in backward linkage. Private organizations are strong in forward linkage and NGOs are strong in social engineering and mobilization. Each and every organization has comparative advantages over the other. Single development agency may have limitations of resources. That is why convergence is needed: a clear strategy for a planned multi-stakeholder involvement with mandated activities as per the expertise, to supplement and complement the efforts and to ensure

effective involvement of community partnerships (Mukherjee and Maity, 2015).

Convergence in Dairy Sector

The state department of animal husbandry (SDAH) is implementing several dairy development programmes by expending huge resources in order to enhance the income of the dairy farmers. In addition, other organisations like, the Department of Dairy Development, the National Dairy Development Board (NDDB), dairy cooperatives, agricultural and veterinary universities, ICAR institutions, financial institutions, input companies and NGOs are also working with dairy farmers. But most of these agencies are working in isolation and the adoption of improved

breeding, feeding and management by farmers is limited.

In the case of research, institutions such as CIRB, NDRI and LUVAS are converging with each other through network projects, NAIP projects and also on few occasions like animal husbandry officers' workshops and meetings for technology reviews.

In these cases, there is sharing of knowledge, manpower, resources, experiences, etc. However, there is not enough convergence between the research system with others such as field functionaries, input agencies/organisations and NGOs. Lack of such convergence is clearly visible in Haryana (Box 1).

Box 1: Low dairy productivity in Haryana

As per the livestock census 2012, in Haryana population of buffaloes and cattle was 6.08 millions and 1.8 millions respectively, while in Punjab buffaloes were 5159.33 thousand and cattle were 2427.71 thousands. In Punjab and Haryana, which are the leaders in animal husbandry, the average milk production in 2012-13 was 1500-2500 kilogram per animal in the entire lactation. Milk production in Punjab and Haryana was 9724.34 thousand tones and about 7040.2 thousand tones, respectively in 2012-13. Per capita availability of milk in Punjab is 961 grams/day (higher in comparison to Haryana's 767 grams/day). Thus, the state is lagging behind in milk production from Punjab in spite of having very good dairy husbandry conditions and breeding tracts for recognised breeds of cow and buffalo. Therefore, all the organizations related to dairy development must converge to increase milk productivity, production and income of farmers. However, mere convergence does not suffice the purpose unless all the agencies move in a synergistic manner i.e., complement and supplement efforts and energy of these agencies and simultaneously avoid duplication and conflict of interest of efforts.

Enhancing Convergence among Research Institutions

At present, NDRI and LUVAS organize animal husbandry officers' workshop annually but separately. It would be better if these institutions jointly organize these workshops with other research institutes. They may also try to address the problems of farmers through workshops and campaigns building on the strengths of each organisation. NDRI is equipped with information on dairy farming, while LUVAS has been known to respond better to the health related queries of the animal husbandry officers and CIRB is better equipped to deal with information pertaining to buffaloes.

Similarly, all the research institutions like NDRI, CIRB and LUVAS prepare area-specific mineral mixture. The mixture should be collectively analysed through a joint working group to make pertinent recommendations to the dairy farmers. Thus, all the institutions should jointly organize technology review meetings to avoid duplication and devise best possible methods to cater to the needs of the farmers.

For enhancing convergence, it is extremely

important that all the institutions and organizations working for dairy development are aware of their respective roles and functions. For example, to prepare literature on the prevention and treatment of mastitis in buffaloes, CIRB being the exclusive institution for buffaloes can develop the technical content. The field veterinary officers of the State Department of Animal Husbandry (SDAH) can customize the text by introducing appropriate words in local language. SDAH and Milk cooperatives may be involved in printing the required number of folders/ pamphlets for distribution to dairy farmers. Milk cooperatives need to play an important role in the supply of inputs required for clean milk production. SDAH needs to step up their role in diagnosing and treating cows and buffaloes for mastitis. By collectively addressing this issue as suggested above, the cost of addressing the mastitis problem could be reduced and more cattle could be protected from this disease.

Similarly, *Kisan melas* (farmer fairs) should be jointly organized by different institutions by pooling together their resources, knowledge, expertise and experience. At present, NDRI, CIRB and LUVAS organize *melas* separately. For its publicity and funding assistance of input agencies/

organisations and banks should be sought. Cooperatives at village level should be utilized to mobilize dairy farmers to visit the *melas*. In this way, such an event would have wider coverage. It would also be worthwhile to develop a joint annual training programme schedule by all the concerned institutions like CIRB, NDRI, LUVAS etc.

While developing such a training schedule, care should be taken in identifying relevant topics and matching these with appropriate institutions to impart training to the farmers. For example, CIRB should focus on improved animal/buffalo husbandry, NDRI on dairy processing and entrepreneurship while LUVAS on health aspects so that their efforts are complemented. Areas of trainings should be determined on the basis of training needs of the farmers.

Convergence among all Stakeholders

In Haryana, there are different stakeholders responsible for generating improved technologies through research. This new technology related to animal husbandry is passed on to the members of information dissemination system. The farmers are

supposed to utilize this knowledge as suggested by animal scientists. The administrators and planners of different institutions like university, ICAR institutes and SDAH are responsible for framing the policies, guidelines etc. The dairy personnel are responsible for milk procurement through milk cooperatives and value addition. The input agencies/organisations are vital for supply of feeds, medicines etc. Thus, all the agencies/organisations of dairy sector are engaged in performing one or the other essential tasks. Hence, it is imperative for these agencies/organisations to seek each other's expertise for the betterment of farmers. Therefore, they need to understand and appreciate each other's roles and functions so that planning, implementation and evaluation of dairy development programmes can be effectively carried out.

Convergence among different stakeholders of dairy development may be enhanced initially by constituting committees at different levels (state, district and block). The details of such committees is discussed and presented in the following Box 2.

Box 2: Committees at different levels to promote convergence

State level Apex Animal Husbandry Development Committee

An apex level animal husbandry development committee should be constituted at the state under the chairmanship of Animal Husbandry Commissioner. The Vice-Chancellors of Agricultural and Veterinary Universities, Directors of ICAR institutes, related to Animal Husbandry, Managing Directors of Dairy Development Federations, Directors of Animal Husbandry and Dairying Departments and 4-5 progressive dairy farmers, Representatives from the private inputs companies and NGOs involved in dairy development should be the members of this committee. This committee should be responsible for major policy and overall plan formulation for dairy development of the state. It should act as a technical body to guide the government on matters related to animal husbandry and dairy development. Its meetings should be organized at least twice a year. It would, thus, ensure a regular interaction of administrators, scientists, input agencies, farmers etc.

Dairy and Animal Husbandry Research Committee

This committee is proposed to coordinate extension and research activities of various research organizations operating in Haryana. This state level committee should have Directors and some senior scientists of ICAR institutions related to animal husbandry/dairy in the state. It should have Director of Research, Director of Extension, Dean of College of Animal sciences and Veterinary Sciences as members and Vice-chancellor of the state veterinary university as its chairman. Its main objective should be to coordinate the research and extension programmes of these organizations.

District level Committee

The district level committee should be constituted under the chairmanship of Deputy Commissioner/Additional Deputy Commissioner. It should have members from all the related organisations at the district level like Project Director (PD), ATMA, Programme Coordinator (PC) of KVK, district dairy officials, Deputy Director Animal Husbandry, representatives of input agencies and some progressive dairy farmers of the district. Major activities for animal husbandry and dairy development in the district should be planned by this committee. Problem identification, preparation of action plans, regular appraisal of Animal Husbandry development programmes/activities in the district should also be its responsibility. The committee should define the role and responsibility of each department in formulating and implementing the dairy extension activities. It should meet quarterly for closer engagement with planning, implementation and evaluation of programmes at district level.

Block Level Committees

These should be formulated under the chairmanship of veterinarians, dairy personnel, and representative dairy farmers within the blocks. The committee should discuss and prepare the plan of action of various extension activities and programmes of dairy development in the sub-division. It should also review the progress and ensure coordination among different agencies. It should meet at least once in every two months.



Way Forward

In this blog, an attempt is made to identify several areas for convergence amongst different agencies/ organizations working for dairy development. Lack

of a common platform to discuss convergence options among these different agencies is a major challenge. We hope the proposed committees to be constituted at different levels will pave the way for better convergence in the dairy sector.

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INTERNALISING NOBLESSE OBLIGE IN EXTENSION SYSTEM TO PROMOTE EXCELLENCE

Capacity Development is yet to receive the priority it deserves among organisations involved in agricultural development, including those engaged in extension and advisory provision. To address this issue, Suresh Kumar suggests the need for internalising *noblesse oblige* among all those involved in training extensionists, and also those engaged in extension delivery.

The Committee on Doubling Farmer Income (MoA&FW 2017) has proposed various measures in its report (Volume XI), for improving capacity of the extension system for doubling the income of farmers by 2022-23. Capacity development is a complex issue. FAO's corporate strategy on Capacity Development (2012) provides a useful framework for approaching capacity development, and this is equally relevant for capacity development in Extension and Advisory Services (EAS). The FAO framework talks about functional and technical capacities across three levels: individuals, organizations, and enabling environment. Capacities at these three levels are interlinked: individuals, organizations and the enabling environment are parts of a whole.

Capacity development often involves enhancing the knowledge and skills of individuals, the effects of whose work greatly impact the performance of the organizations in which they work. The effectiveness of organizations is influenced by the enabling environment. Conversely, the environment is affected by organizations and the correlations between them.

Every chain, and every component of every chain, needs to be developed synchronously. Even for individuals, capacity is competency plus; and these needs of each individual has to be addressed. Having undergone training need not necessarily mean one has been trained as planned. Training alone need not develop the necessary competence required for the job. The various terms including training, competency, capacity need to be rigorously defined and the concepts developed. The issue is important but it is beyond the scope of the present blog, which only covers one aspect – developing excellence among extension functionaries.

The New Extensionist Position Paper (GFRAS 2012) has elaborated on the different levels of capacities. The AESA (Agricultural Extension in South Asia) Network has conducted Capacity Needs Assessment of Extension Service Providers to identify these capacities at different levels (AESA 2016), and have also brought out a Facilitators Guide on conducting CNA of Extension and Advisory Service Providers (AESA 2016).

Every agriculture extension system, including the Training and Visit (T&V) system of extension and the recent extension reforms, has laid emphasis on training. However, post-recruitment training initiatives have not been as effective as desired due to various lacunae, which need serious consideration. A lot of suggestions have been made by various committees for improving training effectiveness and I do not propose to

repeat the same. However, I want to flag the

concept of 'Noblesse Oblige' (Box 1).

Box 1: Noblesse Oblige?

'Noblesse oblige' is a French phrase literally meaning 'nobility obligates'. It denotes the concept that nobility extends beyond mere entitlements and requires the person who holds such a status to fulfil social responsibilities. It refers to the obligation of honourable, generous, and responsible behaviour from those with high rank or birth.

It means the higher the authority, the greater the obligation to perform; and that higher authorities should gain respect through greater competence rather than from the authority of office. In other words, they should gain authority deriving from 'knowledge' rather than from that of 'office'. I am not going to lay down the entire concept here. Rather, I want to focus on a few ideas that are mentioned here regarding three key stakeholders: academic faculty, trainers, and officials in the extension hierarchy who need to internalise this concept.

Excellence in Academic Faculty to ensure Excellence in Teaching Programs

Post-recruitment training programs can only build upon, and incrementally add to, the competence and knowledge acquired in colleges and universities. Gaps at the stage of college education cannot be fully bridged through post-recruitment training. There are various aspects to improving quality of education. I am only flagging one here – relating to faculty quality and specifically the quality of PhD theses.

Quality of PhD theses

I decided to flag this aspect after reading an article by Dr Gursharan Singh, former Dean of PG Studies at Punjab Agricultural University, Ludhiana, in his article, 'We're down the learning curve' in the Hindustan Times (24 December 2015). He had highlighted various issues contributing to India's global low ranking in academic quality. (Extract given below for ready reference.) The following was mentioned with regard to faculty:

'There is 35-40 % shortage in our institutes of higher education and even up to 90% of budget is spent only on salaries, leaving highly inadequate amount for research. Lack of passion and motivation in bringing competing projects is another impediment in the way of quality research. The faculty conducts only student based research. Further the research done by the students is also not properly planned or monitored and it often lacks international or industrial collaboration. The dismal state of research in higher education in our country can be gauged from the fact that PHD dissertations are sold. It is pointless to expect

quality research from someone who has been awarded the doctorate degree undeservedly ignoring the merit of the work undertaken. It is a pity that roping in examiners to sign the required papers in the matter of evaluating these thesis/ dissertations has become a routine affair. Almost everyone will get the degree one has applied for sooner or later. What is the rejection rate of our theses/dissertations? Probably even less than 1%; there may be institutions where these has never been rejected. On the contrary in US universities, even under highly favourable conditions only three quarters of PhD students complete their work. This warrants careful introspection. Above all this, we are also unable to produce the desired number of researchers and thus fall even non-quantitative terms. China is now producing 22,000 PhD holders annually as against 8,000 by India.' (Singh, 2015)

Faculty excellence

Faculty excellence is critical as it determines the level of competence down the line among students who then go on to constitute the field formations of extension and research in both public and private sectors. The whole exercise must start with reforming the system of evaluating PhD thesis. This can improve the quality of teaching and research, as well as the rigour of the system. Faculty who have done rigorous research for their theses will also go on to ensure and enforce rigour in the working of the organisation.

I am not fully aware of the system being followed by various academic institutions for awarding PhD thesis, nor am I competent to prescribe a system. There is need to prescribe internationally-established criteria. There is need to switch over to the system of open defence of the thesis which can be uploaded on the website and then defended in an open session. This is only a broad suggestion which needs to be worked upon.

A linked issue is that of assessment of publication which is a criterion for promotion in academic institutions. Here again the best international norms for peer review need to be followed. A system of uploading the article on a website for observations and queries is one aspect. This should be applicable to staff of academic institutions also.

- The open defence system is key to excellence in both academic and research arenas. A suitable system for open defence can be developed. I recently attended the 1st International Extension Conference 2018, wherein every presentation was broadcast live and questions were invited in real time and received to be answered by respective presenters. It is a commendable initiative in organising workshops and has some features of open defence. The subject, however, requires full separate treatment.

Excellence of the Trainers and Training Institutions

As in the case of excellence in education for ensuring excellence at pre-recruitment stage, there is need to ensure excellence in trainers and training institutions. Unless the trainers are really good and have something worthwhile to offer to the trainees, and the trainees themselves feel they can gain by attending the programs, training will not build capacity of the trainees. While a large number of private training programs are avidly sought after, with participants even ready to pay hefty fees for these, government in contrast has to often force trainees to attend free programs and training institutions have to cajole them into attending. Often the appeal of visiting new places or getting away from routine office work is attraction enough for trainers to attend. Often, extension functionaries do not fight for a place in training programs because they do not feel the same shall be useful to them. Issue of improving the capacity of the training institutions and trainers need to be addressed on a high-priority basis, and an institutional mechanism for the same needs to be put in place.

The above requires a 3-phased approach among others, namely:

- Provide intensive training to trainers first and ensure they are fit to train and can add value to the training programs. Trainers should be tested for the competency they should have acquired.
- The training institutions should conduct action research in the field. This should be made mandatory for every trainer. These action research projects should be adopted for training. Action research can improve the understanding of trainers.
- A system of accreditation for trainers and training institutions should be developed and put into place. This was also recommended by the 12th Plan Working Group on Agriculture Extension.

The 12th Plan Working Group on Agricultural Extension noted that “to infuse professionalism in ‘HRD and Training’ the existing and emerging training institutions need to be accredited by following standard accreditation procedures”. The Draft Training Policy 2010 stipulates such accreditation for all the training institutions, trainers and consultants. Accreditation should be made mandatory so as to enhance the effectiveness and accountability of training institutions. Appropriate accreditation protocols, procedures and institutionalization in collaboration with other institutions will have to be evolved by MANAGE in consultation with other relevant institutions. To encourage compliance with mandatory accreditation, government funding and other incentives may be restricted to accredited HRD& Training Institutions only.

Towards Excellence in the Extension Hierarchy: Way Forward

Senior cadres in the departments, helping farmers and supervising extension workers, need to be more competent than those being supervised by them. The 12th Plan Working Group on Agriculture noted that lack of knowledge, often being the reason for lack of transfer of knowledge and principle of *noblesse oblige*, should be made applicable across the sector. The farms of research stations, agriculture colleges and institutions, KVKs, and state farms should be developed as centres of excellence so as to become role models for farmers. It needs to be ensured that every extension staff, including supervisory and administrative level officials, possesses superior competency, skills and knowledge.

It requires a comprehensive strategy, which could be comprised of five elements as mentioned below.

Development of a competency framework:

Competency cannot be developed unless the competencies are defined, and a methodology for their assessment developed. Therefore a competency framework needs to be developed for every category of functionaries, for both extension and research as well as for other services. The framework also forms the basis for training needs assessment, which would be the difference between the competencies needed and those possessed. Competencies need to be relevant to the job profile.

Annual competency assessment at the individual level:

This annual exercise should be on the lines of firing practice comparable to that in the armed forces. Every extension functionary should be assessed with respect to the

competencies prescribed for the post. They should be able to achieve a minimum level of proficiency. This competency gap shall also indicate the need for training.

Field orientation: It needs to be ensured that an extension functionary is able to perform the farm operations better than the farmers being advised by them in order to ensure that their advice is relevant, and that they are getting a feel of the problems farmers face.

Strengthening technical and functional capacities: Senior extension functionaries should be able to directly conduct or supervise a demonstration. DFI Committee has recommended demonstrations in the fields of progressive farmers (MoA&FW 2017). Moreover, every farm's management by the department or university, at every level from state to block, should be developed as models of best farming practices, and then used for training. Their performance has

to be top of the line. Extension functionaries at various levels should demonstrate their capacity by developing these farms. Every officer should be personally responsible for this development, apart from supervising the work of juniors.

Quantification of capacity development: Planning scientific capacity building requires quantification of capacity across the line –from the lowest to the highest. Every extension functionary's capacity needs to be assessed annually with respect to the requirement of the job, quantitatively, which shall indicate the training need gap for the specific functionary. After studying the capacity of the functionaries in the organizational unit, the capacity of the various organizational units, such as block, district, state and the country as a whole, should be quantified. This shall indicate to authorities the extent of the challenge as well as the progress made in the same. It shall also expose the capacity of every organization in the country.

The image displays three documents related to extension services. On the left is a poster titled "New Extensionist: Roles, Strategies, and Capacities Strengthen Extension and Advisory Services" with a graphic of a head profile filled with icons. In the center is a "Policy Brief" from AESA titled "Capacity Needs of Extension and Advisory Services (EAS) in South Asia". On the right is a "Policy Brief" from AESA titled "ASSESSING CAPACITY NEEDS OF EXTENSION AND ADVISORY SERVICES: A Guide for Facilitators" with a photo of a group of people.

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EXTENSIONPEDIA: A MECHANISM FOR IMPROVING THE EFFICIENCY AND EFFECTIVENESS OF NATIONAL EXTENSION DISCOURSE

In this blog, Suresh Kumar elaborates the idea and suggests the importance of having an “Extensionpedia” to guide the extension discourse in more useful and policy relevant ways.

Extension discourse occurs in the entire extension ecosystem (Box 1) formally through policy documents, seminars and workshops, articles, research papers, extension and research advice, representations, reports, media coverage and publications. Many of these are well documented.

Far more important is the informal discourse that occurs in real time in every farm and village between farmers, farm labour and farm service providers; conversations in every farm house between farm family and friends and relatives; discussions between field functionaries during formal visits, meetings and general discussions; informal and casual discussions between experts, policy makers and practitioners; and interactions between students and teachers after the class room.

Box 1: Extension Ecosystem or Extension Parivar

It includes farmers, farm labour, farm service providers, field functionaries and marketing functionaries directly supporting farming, experts and scientists, policy and opinion makers and administrators, vast network of trade and industry including those providing input, marketing and logistical support, the vast education and training network including teachers, trainers and students. There is a large print and electronic media focussing on farm sector in the country. The vast panchayati raj network is also directly involved in farm production as is the large cooperative and other financing institutions. Educational institutions are also taking active interest in farm development as are various business groups.

However, the effectiveness and efficiency of extension discourse is not commensurate with the efforts made, resources deployed and the very high degree of intellectual input that goes into the discourse. Very low outcome of the discourse is perhaps the biggest waste of national resources which is still not being recognised with focus largely on physical loss of agriculture produce. The limited outcome is due to various reasons.

Firstly, the informal discourse, though most important, is not formalised and is not documented. It is only available to the narrow group involved directly in these discourses. Secondly, the formal discourse is most often too diffused and unfocussed and this too does not directly get into the policy making process due to lack of a system to formalise and internalise the same.

I had urged to start the process of influencing the 13th Five Year Plan (2017-2022) now, in my earlier blog (<http://www.aesanetwork.org/it-is-time-to->

influence-the-13th-plan/) as it requires time to formulate issues; capture the concerns, aspirations and knowledge of all stakeholders of the extension ecosystem at all levels; and collate and present the same for consideration of the concerned sub groups and working groups of the planning commission.

Extensionpedia

To help do this, I suggest setting up an

“Extensionpedia” (building upon and adapting the methodology of Wikipedia). This is important for capturing the knowledge, concerns and practices in the discourse in extension ecosystem comprising entire range of stakeholders including policy makers, practitioners, experts, service providers, industry, farmers etc. Both formal and informal discourse, explicit as well as tacit, needs to be captured. Moreover, diffused discourse needs to be collated in an actionable form.

Box 2: Extensionpedia

“Extensionpedia” is a mechanism for capturing and collating the discourse on extension happening among wide range of stakeholders in different locations and fora mainly for internalising the same for consideration in policy, implementation and review. Concepts, methodology and systems for the same will need to be evolved. As a first step, an anchored theme paper may be prepared for each theme or area of interest and uploaded on a web platform to be developed/commented/edited by different stakeholders. This paper could be further revised based on new comments and inputs.

Why “Extensionpedia”?

“Extensionpedia” is important for the following reason:

- While formulating the report of 12th Five Year Plan Working Group on agriculture extension, it was felt that the Working Group and sub-groups did not have enough time to collect and collate data and provide opportunity to every stakeholder to give their views. The Working Group also could not consider all recommendations made in various forums, get them discussed extensively and then take a considered view well in time for inclusion in the report. Inability to interact widely with field level stakeholders to get a feel of their concerns and to get benefitted from their knowledge was also profoundly realized.
- Workshops, seminars and conferences in most cases have become an end in itself with no mechanisms (time or resources) for ensuring follow-up of the recommendation. Reports of commissions, working groups and expert groups also have the same fate. Detailing is often not done about how these should be implemented within the existing frame work and how much resources are required to act on these recommendations.
- Research studies often end up producing academic publications that are of little policy relevance. Many of them make similar and repetitive recommendations and there is no system to collate the voluminous output. It is not possible for the decision makers to consider the exceptionally large number of suggestions and recommendations available in individual documents.

There are a large number of activities which lose out on the benefit of co-development due to lack of a suitable mechanism. These include research recommendations, extension education course materials and extension training materials.

Operationalising “Extensionpedia”

“Extensionpedia” needs to be anchored in a national organisations and I suggest MANAGE (National Institute of Agricultural Extension Management) as a natural choice (www.manage.gov.in). I hope the following suggestions would be helpful in operationalising extensionpedia:

1. After wide consultations, various themes and sub-themes of the extension eco system may be firmed up by MANAGE or the anchor organisation. A directory of themes and sub-themes may be prepared giving unique number to each theme/sub-theme. The various themes selected for MANAGE Centres (Agricultural Extension Policy, Reforms and Processes; Agri-Institution Capacity Building; Agricultural Markets, Supply Chain Management and Extension Projects; Allied Extension and Water/Input use Efficiency; Knowledge Management, ICT and Mass Media; Agripreneurship, Youth and PPP; Women and Household Food and Nutritional Security, Urban Agriculture and Edible Greening; Agrarian Studies, Disadvantaged Areas, NRM Extension and Social Mobilization; and Agri-Business Management) could be the themes for the zero draft for this purpose.
2. The 12th Five Year Plan Working Group Report on Agricultural Extension, already hosted on the Planning Commission website (<http://planningcommission.nic.in/>) may be uploaded

by MANAGE and other extension organisations on their respective portals. Multilingual reports of the sub-groups, after uploading onto the planning commission website, may also be hosted on the above mentioned websites. These reports shall constitute the base document for extension policy planning.

3. For each theme and sub-theme, a base anchor paper may be prepared based upon the sub-group and working group reports which shall be the zero draft. The thematic anchor paper may be posted on website for collaborative development.
4. Every policy suggestion concerning a theme/sub-theme may be made through track change mode on the anchor paper which shall provide facility of link to every suggestion made on the lines of wikipedia and other projects. This will ensure that all policy recommendations are made and could be discussed on one anchor paper. This will also provide continuity in thinking; allow formation of consensus on various issues and further ensure that all suggestions are available at one place for the next sub-group and working group. It also ensures that no additional time is spent on making suggestions already made.
5. Communities of Practice (CoPs) may be constituted for various thematic areas and sub-themes as required. (Communities of practice are groups of people or practitioners who share a concern or a passion for something

they do and learn how to do it better as they interact regularly through joint activities and discussions).

6. A Directory of track change options may be prepared with unique number to each option. Each option may be allotted to each CoP and other contributors.
7. Subsequent versions may be released annually as Version 1, Version 2, Version 3, Version 4 and so on after detailed comments from CoPs and a theme wise national consultation by concerned MANAGE Centre. Version may be distinguished by the year. For instance, one could use Version 2014, Version 2015, Version 2016, etc. Version before the constitution of working group may be termed as zero draft for the 13th Plan. Next working group may base its recommendations on this version which shall provide it the entire information about views of every stakeholder and status of its functioning. The Group could therefore, spend its time on consultations and working recommendations instead of collecting data and ascertaining views and opinions.
8. The anchor paper, as per latest revision, could be the base consultation paper for every workshop and seminar. Papers to be presented in extension workshops and seminars should take into consideration this anchor paper and the policy recommendations of the workshop should again be made with reference to the anchor paper.



9. On the lines of thematic anchor papers, scheme wise "Current Scheme Status" may be created for each scheme on lines of the theme paper. The current scheme status document may also include every development, instructions issued, progress made, observations, difficulties experienced and suggestions during the plan period. Document will need to be structured to capture data about progress made, field problems in various states especially those articulated by ATMA (Agricultural Technology Management Agency) and BTTs (Block Technology Teams). Each unit should record their progress and observations on this document. This shall ensure that everything about a scheme shall be available in one document rather than going through a large number of files and progress reports.
10. Technology Directory has been already recommended to be constructed to incorporate information about technical recommendations made, status of their adoption and impact. The Directory may be uploaded on the "extensionpedia" platform. Opportunities could be provided for everyone to give their feedback on the recommended technologies for further action.
11. Research Articles and technical papers may be uploaded on the portal. Every research project and technical paper should make the changes on the relevant place of the theme paper so that the same is captured real time. Mention about this needs to be made in the research paper.
12. The teaching and training material could be uploaded on the "extensionpedia" platform and co developed.
13. Compilation of an Extension Manual has been recommended by the working group on agriculture extension. The manual is to encompass best practices for various extension methods. This could be also uploaded on the portal and a revised version released annually.

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REDEEMING THE PUBLIC EXTENSION SYSTEM: CAN RURAL DEMOCRATIZATION OFFER PLAUSIBLE ALTERNATIVES?

Even while critical debates on the relevance of public extension systems are on- with propositions that argue for more privatized extension services dominating the scene- the significance of public extension systems is only increasing. Rather, it has assumed more relevance as available 'alternatives' fail to proactively address the concerns of the farming community. Needless to state, the overriding alternatives are all about linking the production system with markets, entering value chains and developing competencies for addressing the ever varying market dynamics, argues Jiju P Alex.

Rural Lives and Livelihoods

Rural life and access to livelihoods are fraught with several problems about which the communities do not have any sway. Thinking of ways to ensure sustainable rural livelihoods warrants recognizing the vulnerability of rural communities. Worldwide, inflation, falling prices of produces and lack of access to inputs and credit make rural lives more difficult. Falling rates of employment generation in villages and tendency of governments to step back from key sectors have also added to their woes. Market, which is pointed out as an alternative, is indeed a reality that can impact lives. But it requires careful fostering of those who are new to its dynamics and vagaries.

Hence, the focus of intervention should be to enhance livelihood security and sustainability by scaling up institutional mechanisms that can help reduce the vulnerability of communities. In fact, the capability to thrive- something that we frequently talk about rural communities in the emerging contexts- cannot be acquired on their own, unless socially responsive public systems come to their rescue.

This invariably requires a new orientation to extension intervention with emphasis on improvement of service delivery mechanisms and a host of issues ranging from self-reliance to sustainability and empowerment.

Role of the State: Lessons for Agricultural Extension

Agricultural extension in India as well as in other developing economies can draw valuable lessons from this situation. There is a growing body of evidence which suggests that the public sector should earnestly step in more than ever before, as investments in agriculture for the common good have been showing declining trends during the post reform period resulting serious setbacks for the less endowed farmer (Jha, 2007, Mani et al 2011).

It is widely observed that national extension systems in many developing countries have declined over the last couple of decades due to lack of political and financial support, reduced investment, attrition of human resources and physical infrastructure, and lack of clarity on the roles of the public extension institution vis-a- vis other stakeholders and service providers (Rivera, 2011). Governments guided by the provisions of the structural adjustment agenda tend to shirk their responsibility by assigning the interventionist role to multiple actors, private and non-governmental sector included. Though this might have enhanced pluralism of intervention,

social control over the agencies that are given this responsibility has been ignored. The key question is how these moribund systems could be rejuvenated.

Rural Democratization: Making Extension Responsive and Effective

Redeeming public extension systems by functionally linking them with people in a large

way would be an uphill task given the reasons cited above. Rural democratization bolstered by strong linkages with rural institutions and development agencies in the public sector could be a plausible approach to infuse vitality into a declining extension system. It can be made possible through a deep democratization process, which includes devolution of power and resources to the local governments.

Box 1: Is market the only way out?

Enhancing market linkage and improving capability to respond to the likes and dislikes of market would sound reasonable to anyone who explores ways of salvaging the desperate small producer. However, the notion that livelihood options of small and marginal farmers would improve by simply linking them with market has not yet yielded convincing results in most such cases. This is because of the fact that quite often, in market linked interventions, small farmers are not properly and adequately facilitated to take on the emerging challenges. It is also accompanied by proposals for reducing the role of public sector in many ways. Sometimes the situation gets compounded by restricted support from the government, implying drastic cuts in incentives and subsidies. In policy environments that consider governmental support as unproductive welfarism (Davidson and Ahmad, 2003, Mathews 1997), survival of the small producers become nearly impossible.

Recent global experiences show that such approaches to development falls severely short of a critical look at the current socio economic, political and environmental trends that have pushed a large number of people to the margins of the development sphere. Economists have attributed this to the neoliberal economic policies (Stiglitz 2012). It is true that these economic reforms have opened up new avenues that would ideally go beyond even national boundaries.

It might also have expanded markets that would give the producer more opportunities. However, it has also created a situation where survival of communities is becoming increasingly dependent on markets, the trends of which are more or less determined by the preferences of the urban elite.

In fact, there is a growing discontent on the efficacy of markets in resolving livelihood issues. The spiraling economic crisis has posed serious questions about the sanctity of being too much dependent on market. This discontent which has manifested in several parts of the world in the form of open protests against the economic crisis is characterized by three disturbing revelations: markets were not working the way they were supposed to, for they were obviously neither efficient nor stable, and that the political systems are fundamentally unfair (Stiglitz, 2012).

Since neoliberal policies could push even well-endowed communities up against the wall (Steiglitz,2012), there is commendable scope for bringing back a growth model propelled not by market alone, but by the logic of redistributive growth, grounded on the rights of the communities and the collective ownership of their resources and promptly linked to the market.



Box 2: Democratization

Democratization is a highly evolved form of political empowerment, and can enhance participation, transparency and efficiency. But connecting democratization with development requires a whole set of innovative institutions and processes facilitating seven important pre requisites:

1. Enhancement of financial resources to local governments,
2. Participation of stakeholders in deciding development intervention,
3. Generation and management of human resources, social capital and financial resources for being invested in the process,
4. Devolution of fiscal and administrative authority to undertake administrative decisions at the local level on key development issues,
5. Transferring key development agencies to local self governments,
6. Establishing stakes for people's representatives, local resource persons and local organizations in the functioning of development agencies and
7. Responsive and participatory auditing systems to enhance transparency.

Evidences from places where intense rural democratization has been tried out show that it would be possible only if a whole new genre of grassroots level participative structures are put in place. As far as extension is concerned, there are several studies that show that decentralization and devolution of agricultural extension to local governments have failed (Carating et al 2010). Weakening of linkages with research, lack of funds for technical training, varying financial situations of local governments, local political priorities which need not necessarily be aligned with the interests of small farmers and the vulnerable have all affected decentralization of extension almost everywhere.

It is evident that a strong sense of empowerment engendered by vigilant public action is required to make this mechanism functional. People's involvement in all stages of development intervention will have to be ensured mandatorily. In places where decentralization has been able to turn around the approaches to development significantly for longer periods, there were robust administrative reforms and institutional mechanisms for sustaining participation by

linking them with development initiatives at the grassroots level, as explained in Box 2. In any case, an organic vigil instigated by an informed public sphere and bolstered by proactive political groups would keep these changes moving.

How does Rural Democratization work in India?

In India, the Panchayati Raj System which has been strengthened by the 73rd and 74th constitutional amendments during 1995 offered immense scope for reorienting the formal extension system. There are provisions to transfer the responsibility of local agricultural and economic development to the local self-governments. There are also opportunities to formulate participative fora for people's involvement in planning, implementing and monitoring development programmes. The state governments have the freedom to devise their own mechanisms to enable participation in local development initiatives. For instance, Kerala (one of the southern states of India) has successfully implemented democratization in India and it improved the reach and effectiveness of agricultural extension in the state (Box 3).

Box 3: Democratization in Kerala

In Kerala, as part of democratic decentralization, a substantial share of public funds and a host of development agencies have been transferred to the local self-governments. Extension agencies are now being directed to work in unison with local self-government institutions, with considerable accountability of the former to the latter. The possibility of linking rural institutions with the process of planning has enhanced institutional multiplicity and synergy. Larger sections of the farming community have been covered by the extension agency as a direct result of decentralization and convergence of agencies at the grassroots level. This has led to better channelization of resources- fiscal, human and physical- and better targeting of beneficiaries. More significantly, service delivery and project management are being ICT enabled, with unique programmes for e- governance. There had been a spurt of development initiatives born out of local ingenuity, as a result of this new paradigm of growth oriented democratic decentralization.

Deliberating on the scope of decentralization of agricultural extension, Swanson and Rajalahti(2010) observes that decentralisation not only gives local

government control over personnel and finances, but in theory focuses control closer to the level of farmers and thus can improve

extension accountability to their needs. Rural democratization, supported by efficient systems of service delivery and functional linkages can bring about substantial changes in the delivery of extension services. It also leaves adequate room for linking rural enterprises with value chains duly supported by credit and micro finance institutions. Since there is better scope for wider consultation with stakeholders, identification of critical problems and applying precise solutions are also possible. Better management of common resources and productive initiatives by collectives of farmers, farm women and rural entrepreneurs aided by the common wisdom of the community and public funds are yet other possibilities.

However, not everything is well with the new systems. Bureaucracy and local politicking have had their share in setting in the signs of degeneration. Devolution of authority and financial resources may have to be enhanced to take up new challenges. Building capability of the actors at the grassroots level to manage the institutions that have been formulated for facilitating decentralization would be the biggest challenge. The ways of preventing deterioration and improving efficiency also necessitates detailed enquiries about this system. Building up autonomous and sustainable systems would

remain as uphill tasks unless these vulnerabilities are addressed.

Learning from the Praxis of Democratization: Role of Extension Scientists

Extension scientists as development interventionists and social researchers should explore the dynamics of rural democratization in detail. While doing this, we should be able to characterize the policy environment required to revive rural institutions democratically. Innovations in linking grassroots level democratization process with better livelihoods would show the way ahead for effective utilization of rural resources. How efficiently such systems address important concerns like sustainability and ownership of common resources could be of interest to an extension researcher. Evolving a robust system of rural democratization warrants critical social action and a departure from the conventional norms of participation. It is the outcome of a long drawn socio-political process, which would prompt the extension scientists to look at it critically and ideologically. It would be unfair on the part of extension scientists to leave out this important innovation in public administration and service delivery from the realm of their academic interests.

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OPERATIONALIZING FARMERS WELFARE

In August 2015, the Government of India, renamed Ministry of Agriculture as Ministry of Agriculture and Farmers' Welfare (MoA&FW), explicitly recognizing farmers' welfare as the core of agricultural development in India. The Government of India also initiated an ambitious program of doubling farmers' income by 2022-23. Suresh Kumar in this blog suggests two steps to move forward to operationalize the concept of Farmers' Welfare.

Renaming of Ministry of Agriculture as Ministry of Agriculture and Farmers Welfare (MoA&FW) on the 27 August 2015 has expanded the ambit and mandate of the ministry beyond the traditional mandate of production. Farmers' welfare depends on enhancing farm production and income. The Government of India declared an ambitious mission to double farmers' income by 2022-23. Ministry of Agriculture has appointed a committee on Doubling Farmers Income (DFI) under Dr Dalwai, Special Secretary (Agr.). The report brought out by the committee is structured through 14 volumes. Volume XI 'Empowering the Farmers through Extension and Knowledge Dissemination' (MoA&FW, 2017) has been uploaded on the website for suggestions. The committee has made a range of recommendations (Prasad, 2018).

As brought out by the committee, farmers depend upon timely and synchronous delivery of various services across the value chain including timely supply of quality inputs at reasonable costs, supply of production inputs including water and power (as provided and promised), extension services for supporting good agricultural practices and dealing with farmers' problems including dealing with incidence of pests and diseases, tackling contingencies of climate change and marketing support. He/she also needs support to address the increasing farm distress which has spread to several parts of the country. Though farmers suicides is the worst manifestation of farmer distress, distress has become a part of day to day struggle for the farmers which needs to be taken note of, even if the farmers are not agitating or taking the extreme step. This blog focuses on two aspects that need urgent attention.

Action 1: Farmers' Charter and Single Window Delivery of Services for ease of doing Farming

The different types of services required by a farmer are currently provided by a large number of departments and public and private sector enterprises. Standards for inputs and some services provided to farmers have been prescribed. The Central Ministries and State Departments have formulated citizens' charters providing standards of services to be provided to citizens by them. Many state governments have also enacted right to services legislation to enforce these service standards.

Enactment of legislations and prescribing service standards are welcome, but they need to be carried forward, enlarged, enriched and; supplemented, restructured and reorganized as a Farmers' Charter, to ensure that farmers are able to access all the services required by them easily, without

hassles and of the requisite quality through one platform.

Formulation of Farmers' Charter was recommended by the Working Group on Agriculture Extension for the 12th Plan:

"A farmers' charter may be adopted and declared by every organization (public as well as private) providing services to farmers. The charter shall indicate the quantity, quality, price and timeliness of services to be provided. This should be uploaded in the proposed "Farmers' Portal" and its implementation should be monitored. One officer in each organization should be designated for grievance redressal based on complaints relating to the farmers' charter. They should also file complaints with the Consumer Courts."

DFI Committee has mentioned the enforcement of Farmers' Charter as one of the 24 roles of the agricultural extension personnel. The concept of Farmers' Charter is not new. However its articulation by the DFI Committee has imparted a sense of urgency. The concept accordingly needs to be developed and operationalized.

Farmers' Charter requires ensuring that all departments and agencies, public and private, formulate Farmers' Charter and include every service required by the farmers and standards are prescribed for all these services. The quantities and schedule of supplies and services to be delivered by private service providers also need to be prescribed by the field officers as part of the farm plans, under respective licensing provisions and all these, incorporated in the Farmers' Charters of the private service providers. This obligation of the private service providers needs to be incorporated in the regulations governing the agencies.

Accessing these services by approaching the entire range of public and private agencies and within the framework of the respective Acts and the respective Charters is a major challenge for the farmers, being tedious, time consuming and sub effective, making major demands on the time of the farmers, already under pressure for completing various farm operations and tackling various constraints. DFI Committee eg lists 97 public sector extension agencies. Besides it will be difficult for the farmers to decide which agency to approach for specific service.

Single Window System concept has been successfully introduced as part of ease of doing business. This concept needs to be extended to the Farm Sector. There is accordingly a need to extend the concept of Single Window System to agriculture by developing the concept, compiling and declaring Farmers' Charter by the nodal

department i.e., Ministry of Agriculture and Farmers' Welfare, at the center and the Agriculture Departments across various states. The charter should include details of all services required by the farmers and also the responsible public and private sector agencies and the methodologies for ensuring compliance with the services. This should also require the department to facilitate grievance redressal. This could eg include approaching the statutory authorities in case of quality complaints.

What is mentioned above is only a concept. Operationalising the same shall be an immense task considering the very large number of agencies involved. DFI Committee eg The Directorate of Extension (DOE) under the MoA&FW may hold a workshop in collaboration with MANAGE (National Institute of Agricultural Extension Management) to initiate this process.

Action 2: Alleviating Farmer Distress-Real Time Connect with the Farmers

Continuing media coverage of farmer suicides has shaken the nation's conscience reminding the pathos of the movie 'Peepli Live'. But unlike the movie, farmers in every state have started uniting and agitating for their rights and these are being reported daily. The farmers are extending their demand for loan waiver beyond short term loans, to waiver off other loans and non-payment of dues such as electricity dues.

Concerns are also being expressed about the impact of loan waivers on credit culture. Broad public support for their demands, gathering strength of their movements and the socio-economic dimensions of the problem has posed a major challenge before the government. The human dimension of the distress also affects the capacity of the farmers to undertake farm operations, which ultimately affects farm production and/or incomes.

Extension - the frontline interface with the farmers, needs to position itself towards alleviation of farmers' distress as its core mandate. Counseling for farmers' wellbeing, facilitation and feedback are also recommended as duties of the agriculture extension by the DFI committee. It provides for extension system to identify a distressed individual, provide necessary advice to overcome the distress and most importantly offer psychological counseling and where needed, guidance on actions to overcome the distress. Farmers, like any other societal unit, have aspirations, needs, concerns and problems which vary from area to area and farmer to farmer. Even if the extension is not responsible for various non-farm issues causing distress to farmers such

as unemployment, health and drinking water, they may need to bring the same to the concerned authority. Different agencies are responsible for addressing issues related to inputs, marketing, water, power etc., but these need to be monitored and escalated by extension staff to the concerned authorities.

As a long term measure, extension requires a deep and comprehensive understanding of the concerns at both individual and group level before decisions are taken for individual concerns. Policy formulations require long term studies across farming situations and farmer groups and households. A team of researchers from Punjab Agricultural University (PAU), Telangana State Agricultural University and Marathwada Agricultural University are presently working on preparation of a "Stress Index" for farmers and a training manual for village level volunteers to counsel farmers. This initiative, as brought out by DFI Committee, is very important. However, going forward, there is need to provide an institutional framework. An All India Coordinated Project on studying farm distress and suggesting remedial measures shall be an ideal vehicle for such studies.

There is a further need to designate an institution/ center as coordinating center for such studies.

Working group on Agriculture extension for the 12th plan had constituted a sub group on Agrarian Distress and Conflicts, INSTA Response and Farm Studies (GoI, 2011). It had recommended establishment of such a center in MANAGE.

Beyond the long term studies, farmer distress needs to be addressed in the short term by escalating every concern relating to any component to the higher level for corrective action. Ideally, potential causes need to be identified after every farm season for corrective action in the following season. The ambit of SREP (Strategic Research and Extension Plan) also needs to be suitably modified and extended to include farmers' distress.

Final Remarks

Comprehensive strategy shall be evolved and operationalized soon after considering report of DFI Committee. Above two aspects are brought out for consideration of the policy makers.



References

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