



# Strengthening Agricultural Extension System in Uttar Pradesh

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## Introduction

Agriculture is the mainstay of the people of Uttar Pradesh with majority of population directly or indirectly depending on Agriculture and allied sectors. It goes without saying that an effective extension mechanism in the agriculture and allied sector is the game changer in ensuring overall growth of the sector. There is ample scope to realize the potential of agricultural extension as the concept is gradually evolving and going much beyond the traditional approach of technology transfer. At present, extension is viewed as playing a wider role by developing human and social capital, enhancing skills and knowledge for production and processing, facilitating access to markets and trade, organizing farmers and producer groups, and working with farmers toward sustainable natural resource management practices.

## Agriculture in Uttar Pradesh

Uttar Pradesh is primarily an agricultural economy. The contribution of agriculture to total SDP was 24.11 percent at constant (1999-2000) prices for 2009-10. Agriculture

### Uttar Pradesh Agriculture Policy 2013

The State Agricultural Policy aims at achieving

- A growth rate of 5.1% in the agriculture sector.
- Developing appropriate farming systems that would improve the soil health as well as farm income.
- Conservation of natural resources for maintaining ecological balance.
- Increase the income of farmers through agricultural diversification towards high value activities, while retaining the core-competence in area of food and nutritional security.
- Development of infrastructure facilities in sectors of seeds, fertilizers, pesticides, agriculture implements, extension services, food processing and marketing by promoting private sector involvement across the agricultural supply chain.

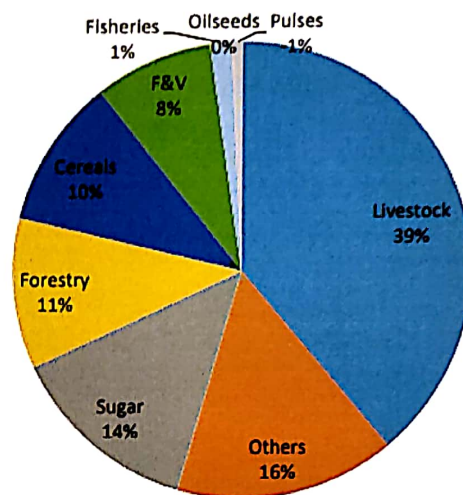


Fig 1. Shares of Sectors in Average Annual Growth of Value of Output of Agriculture and Allied Activities during 2000-14

and animal husbandry together contributed 22.9 percent of the total income of State during 2014-15. The state registered an annual growth of 4.8 percent in its income during 2011-2015 (constant price 2011-12).

The maximum rate of growth was observed by tertiary sectors (7.4%) followed by secondary sectors (2.5%) and lowest (1.6 %) rate of growth registered by primary sectors during the same period. State is divided into nine agro-climate zones and endowed with requisite conditions to ensure growth in agriculture and allied sectors such as horticulture, livestock and sericulture. However, the activities of these sectors need to be scaled up for commercial exploitation for enhancing the income of the farmers.

The state has its national importance for being one of the leading producers in many commodities like wheat, paddy, sugarcane, etc. Livestock and fisheries have shown significant increases in their respective shares in the value of output between TE 2001-02 and TE 2013-14. Livestock has been leading contributor to the growth of agriculture and allied sectors between 2000-01 and 2013-14 accounting for 39.4 percent of the growth in value of output of agriculture and allied activities in UP during this period (ICRIER, 2017).

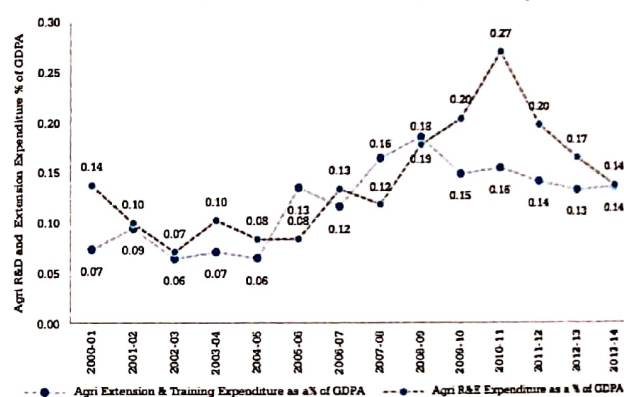
## Agricultural Extension System in Uttar Pradesh

The State has an extension system consisting of different departments such as agriculture, horticulture, fisheries, animal husbandry and sericulture. The system is well supported by extension machinery of SAUs and ICARs and various initiatives of the private sector. All the districts have been covered under different institutions like ATMA, Krishi Vigyan Kendras (KVKs) and initiatives under private sectors to provide farmers with requisite information and knowledge. The state agricultural universities (SAUs) along with central research institutes like IIPR, IISR and IVRI serve as major extension agents in the state.

Though, the state has a properly structured extension system, its reach is still very limited. Same has been suggested by a survey of 810 households in the State. The survey shows that an average of only 18 percent of farmers had access to extension from any source during 2009. Many respondents indicated lack of advice at the right time. Only about a quarter of the extension activities came from the public sector. In Uttar Pradesh, Reardon et al. (2011a) have reported that 7 per cent of the sample farmers availed the services of state extension staff, while other public-sector extension sources (KVKs, All-India Radio, university extension, and plant protection units) were collectively a source of information for 18 per cent of the farmers.

Extension intensity as measured by agriculture extension expenditure per hectare gross cropped area has increased

but still remains low. Between TE 2002-03 and TE 2013-14, per hectare extension expenditure increased from Rs. 37 per hectare to Rs. 95.2 per hectare at 2004-05 constant prices, a significant two and a half times increase, though the overall levels still remain low. State-wise analysis shows that agriculture extension intensity in state like Uttar Pradesh was reported to be Rs 53.1 per hectare which is lower than the national average of Rs 95.2 per hectare. The expenditure on research and extension, in case of Uttar Pradesh was also reported to be only 0.20 percent during 2013-14 (ICRIER, 2018). The agricultural extension systems though appears to be comprehensive, needs to be assessed for its readiness in the present structure to address the changing needs of the agriculture sector.



Source: Combined Finance and Revenue Accounts of the Union and State Governments in India (Several Issues) and Office of the Economic Adviser and CSO

Fig 2. Agriculture Extension & Training and R & E Expenditure as a Percentage of GDPA in Uttar Pradesh (2004-05 Prices)

Table 1: The limitations in delivering extension services by the Departments

Departments/ Organizations	Staff Level	Properly Defined Extension	Single Direction Traditional Approach	Limited Use of Technology	Need for Improving Skill and Knowledge	Focus on Marketing
Agriculture	Village		√	√	√	X
Horticulture	District	Weak	√	√	√	X
Animal Husbandry	Block	Weak	√	√	√	X
Dairy	Block		√	√	√	X
Fisheries	District		√	√	√	X
SAU/ KVK	District		√	√	√	X
Sugarcane	Division	Weak	√	√	√	X
Sericulture	District		√	√	√	X

## Status/ Challenges

The state of Uttar Pradesh is having a well-established Extension System for the agriculture and allied sectors but for various reasons, it leaves much to be desired. Different state departments have experienced different limitations in delivering their services effectively. The limitations in delivering extension services by the Departments is shown in Table 1.

Most of the departments except agriculture expressed paucity of extension staff at the village level or Panchayat level limiting their last mile linkage. In the present trade scenario, marketing is an important component for extension but most of the department don't have any well-defined system to provide timely and relevant marketing advice. Many of the departments like horticulture, animal husbandry and sugarcane don't have properly defined extension objectives and means to provide such services. Use of information technology has also been observed to be limited. The farmers' need for information/education is increasing, which can be fulfilled by following a comprehensive approach of the extension but most the departments are following target-based unidirectional production oriented approach. Extension initiatives by private players, NGOs, Farmers Producers Organizations, etc have also been going on in the state but in isolation. Trained youths under the schemes of Government like DAESI and ACABC are also available for extension but have not so far been used effectively.

## Recommendations

### Redefining the role of extension:

The role of extension workers is mostly confined to input delivery and implementation of different schemes of the government. Many new business aspects of agriculture are emerging, for which farmers need handholding from the extension mechanism. There is need to redefine their role to be in tune with the requirements of the sector and their performance be assessed accordingly.

### Strengthening of state level training institute:

The capacity building of the extension personnel deployed at the ground on different subjects is vital to help farmers realize their full potential. State level institutes like State Institute for Management of Agricultural (SIMA), Rahman Khera has a bigger role to play in building the capacity of extension personnel by developing appropriate modules. Accordingly, there is a need to strengthen SIMA in terms of infrastructure, faculty, their development and subject-wise representation.

## Linkages between different components:

Linkages between research and extension has been observed as one of weak links in the system. There is need to strengthen this linkage to facilitate flow of information both ways. This will help in identifying relevant areas of research and knowledge and skills required by the farmers. ATMA may help in strengthening this linkage between research, extension and farming.

### Covering agricultural marketing:

In the present trade-oriented environment, extension has a large role to understand markets and price trends and advise farmers accordingly on crop planning and efficient marketing. The infrastructure for post-harvest management and marketing needs to be strengthened in line with the production pattern. Thanks to increase in the production of horticultural crops, a sound cold chain infrastructure needs to be put in place. Direct marketing of agricultural produce may be an effective tool for smallholders. Therefore, farmers' market need to be developed to help farmers market their produce more efficiently. The concepts like retail chain linkage, contract farming and the farmer producer companies need be promoted on the extension platform.

### Need to enhance the capacity of extension workforce to take up new challenges:

In order to face the new challenges of agriculture and allied sector, the capacity of the extension personnel needs to be enhanced appropriately. The nature of job of an extension worker today is multi-dimensional and multi-disciplinary. Hence, the extension professionals must be equipped with the requisite skills and knowledge on different issues relating to climate change, women empowerment, disaster management, entrepreneurship skills, stress management, marketing, etc. The complete knowledge of the ecosystem will help an extensionist deliver his duties more effectively and efficiently.

### Capacity building of farmers:

Though farmer-to-farmer learning is now inbuilt in a number of extension schemes, there is need to reinforce it in the extension mechanism, as it is observed to be the most effective methods of transferring knowledge and technology to farmers in sustainable manner.

### Effective use of ATMA model:

The ATMA model is required to be used effectively for bringing about requisite convergence between different schemes and agencies of the extension system. Extension functionaries should accept ATMA more as way of

working for the farmers in a synergistic manner than as an organisation only.

#### **Affordable technology:**

Focus has to be laid on affordability of technology, mainly by the small and marginal farmers. The integration of technology with financial sources should be incorporated in the schemes to improve the scope of adoption of new technologies. Farmers need to have access to finance on crops and for adopting different technologies.

#### **Sound monitoring and evaluation mechanism:**

The schemes are generally monitored against the targets defined under them. However, there is need to have a sound system going beyond monitoring of activities. It should also focus on the outcome and its impact on different aspects of agriculture and the beneficiaries. There is a need to have an in-built component on monitoring in farmer-welfare oriented schemes.

#### **Development of markets:**

Some of the produce like fisheries don't have physical markets. There is need to develop markets with sufficient infrastructure to help the sector harness its full potential

#### **Setting Extension Wing:**

Animal husbandry is important for the overall development of the sector. An extension wing with clearly defined

objectives and activities is required to be set up in the department of the state. Sugarcane department also need to set up its extension wings to take care of activities in the changed scenario.

#### **Use of technology:**

The use of information technology in the dissemination of information is still limited. Technology (ICT) can be used for efficient and timely delivery of information to the farmers on different components of schemes and different aspects of agriculture production and marketing.

#### **Extension by other agencies:**

There are many extension programs being run by private players, NGOs and other agencies (FPO). Such agencies are operating at small scale and in isolation. There is need to integrate such initiatives with the mainstream, so that good practices and success stories created there don't remain restricted to their area of operation only and are made available to others in the sector.

The scope of extension needs to be widened covering different aspects like development of human and social capital, enhancing skills and knowledge for production and processing, facilitating access to markets and trade, organizing farmers and producers groups, and working with farmers towards sustainable natural resource management practices, to harness full potential of the subject.

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The Policy Brief is prepared by Dr. Shalendra, Duputy Director (Behavioural Sciences) and Dr. V.P. Sharma, Director (ITDP) Retd., MANAGE based on a study conducted in 2017-18. The views expressed in the policy brief are not necessarily those of MANAGE, Hyderabad or Department of Agriculture, Government of Uttar Pradesh.



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