Knowledge Management and Producer Organisations

Discussion Paper 3

MANAGE-Centre for Agricultural Extension Innovations, Reforms, and Agripreneurship (CAEIRA)

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Director General's Message

Smt. V. Usha Rani, IAS
Director General, MANAGE

I appreciate Dr. Deepa Singh, MANAGE intern and Ph.D Scholar of Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India for her study on **"Knowledge Management and Producer Organisations"** She has studied eight Farmer Producer Organizations (FPOs) of Uttar Pradesh (UP) and came out with very good findings. In fact today the outreach of extension system to individual farmer is very expensive. However, it cannot be neglected in a country where 82% of farmers are small and marginal. Many a time, poor productivity lack of modernization are attributed to the holding size of the farmers. FPO is a way to overcome these limitations.

The public extension system is unable to reach the small and marginal farmers due its limitation like overburdened manpower, poor infrastructure and inadequate resources. Even the private extension system cannot deal with lakhs of individual farmers. In such a situation FPOs are a good answer for the problems faced by the extension system.

Agriculture knowledge is very dynamic and ever changing. In the modern world, no profession is sustainable unless it is backed by latest knowledge and agriculture is no exception for this principle. It is next to impossible for individual farmer to have access to huge knowledge pool that are available from human resources deployed by the Government/Research organizations or from Internet. When farmers join as group, the knowledge management is easier. Every farmer due to continuous field experience gain native knowledge. FPOs become a good platform of knowledge management picking the relevant inputs either from external source or from members' own experience.

The acquired knowledge can help farmers in value addition, price discovery, and connecting to the markets or direct marketing. The study clearly reflects the advantages of FPO in empowering farmers for better negotiations while purchasing inputs. FPOs are a solution for extension system to reach large number of farmers with limited time and effort. The study cautions the probable corrupt practices that may be cropped up, if CEO or few farmers dominate while all the members are docile in the organization building.

To have effective knowledge management on a sustainable basis, the FPOs have to become financially sustainable and should not depend on external fund. On the whole, the study helps the officials involved in FPO to realize the advantages of organizing farmers as FPOs and precautions that are to be taken while organizing so. The study establishes FPO as a good solution for the limitations of public and private extension systems and establish strength of unity and collective leadership which makes farmers a better negotiators with market forces.

Let me congratulate Dr. Saravanan Raj, Director (Agril. Extn.), MANAGE and Dr. Suchiradipta Bhattacharjee, MANAGE Fellow (CAEIRA) for guiding the intern in selecting right topics, applying right research methodology to collect relevant information, analyzing and suggesting appropriate way to move forward.

17.01.2018

(V.Usha Rani)

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Abbreviations

AC&ABC	Agri-Clinics and Agri-Business Centres
AKIS	Agricultural Knowledge and Information Systems
AKS	Agricultural Knowledge systems
APMC	Agricultural Produce Market Committee
ATMA	Agricultural Technology Management Agency
BAIF	Bharatia Agro-Industries Foundation
BMC	Bulk Milk Collection point
CARI	Central Avian Research Institute
CD	Compact disc
CEO	Chief Executive Officer
CSR	Corporate Social Responsibility
DAC	Department of Agriculture and Cooperation
DG	Director General
DHURVA	Dharampur Uththan Vahini
DKMA	Directorate of Knowledge Management in Agriculture
FPO	Farmer Producer Organisation
GBPUAT	Govind Ballabh Pant University of Agriculture and Technology
GOI	Government of India
IARI	Indian Agricultural Research Institute
IAS	Indian Administrative Services
IBEF	India Brand Equity Foundation
ICAR	Indian Council of Agricultural Research
IIT	Indian Institute of Technology
IT	Information Technology
ITC	Indian Tobacco Company
IVRI	Indian Veterinary Research Institute
KM	Knowledge Management
KVK	Krishi Vigyan Kendra
MANAGE	National Institute of Agricultural Extension Management
MSSRF	M. S. Swaminathan Research Foundation

MT	Metric Ton
NABARD	National Bank for Agriculture and Rural Development
NAIP	National Agricultural Innovation Project
NAFED	National Agricultural Cooperative Marketing Federation
NDDB	National Dairy Development Board
NFCG	National Foundation for Corporate Governance
NRRA	National Rainfed Area Authority
PACS	Primary Agricultural Cooperative Society
PO	Producer Organisation
RKMP	Rice Knowledge Management Portal
RML	Reuter Market Light
SAU	State Agricultural Universities
SECI	Socialization, Externalization, Combination, Internalization
SFAC	Small Farmers' Agribusiness Consortium
SHG	Self Help Group
SNF	Solids- not- Fat
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TCS	Tata Consultancy Services
VDC	Village Development Council

Abstract

The central purpose of knowledge management is to transform information and intellectual assets into enduring value. The basic idea is to strengthen, improve and propel the organisation by using the wealth of information and knowledge that the organisation and its members collectively possess. Thus the value of knowledge management relates directly to the effectiveness with which the managed knowledge enables the members of the organisation to deal with everyday situations and effectively envision and create their future. A Producer Organisation (PO) is a legal entity formed by primary producers, viz. farmers, milk producers, fishermen, weavers, rural artisans, craftsmen, etc. The main aim of a PO is to ensure better income for the producers through an organisation of their own. Knowledge management in Farmer Producer Organisations (FPOs) helps improve its networking and interactions with member farmers and various stakeholders. They should have the understanding of how to share exchange and disseminate knowledge to obtain maximum benefits for their members. It may include publications, e-resources development, facilitation and capacity building. Knowledge management will help in making sense of and managing the copious streams of data and information that FPOs confront every day to make them available to support decision-making. This will allow them to tap their collective potential for policy positions, market integration, collective bargaining, knowledge generation and sharing. Although there are also many challenges such as not understanding and appreciating the potential of knowledge management; inefficient use of knowledge centre; natural resistance to adopt the change; and cultural barrier, organisational culture, leadership, policies and enabling environment. The FPOs need to work hard to address these challenges and provide a suitable environment for knowledge discovery and learning. Consequently this approach will help in building a prosperous and sustainable agriculture sector that will enable farmers to enhance productivity through efficient information utilisation, and cost-effective and sustainable resource use.

Executive Summary

This report was written to find out the knowledge management process and status in producer organisations, and to contribute to the discussion about how managing knowledge can increase the effectiveness of producer organisations in uplifting the socio-economic status of members. First of all, the present status of producer organisations in India, their need, mission and vision is discussed; then effectiveness of producer organisations is proved by some case studies. The concept of knowledge management is explained separately with various examples; knowledge management system in agriculture in India is shown. Thereafter, knowledge management process followed in various organisations is explained.

In today's competitive and global economy there is a need to manage resources more effectively to survive. At present, only those organisations are successful that consistently create new knowledge, disseminate it widely throughout the organisation, and quickly embody it in new technologies and products (Nonaka, 1991). For example, Nokia failed because it missed out on learning and changing, and thus lost the big opportunity (The coverage, 2016). In this fast-moving world, advantages of yesterday are getting replaced by trends of present; in this atmosphere, knowledge management (KM) has become more important. KM is an art that deals with the transformation of intellectual assets and information to create value by identification, acquisition, creation and sharing of knowledge in the organisation (McCampbell et al., 1999) or we can say it is the process which is used within the organisation to create, share, codify, disseminate and institutionalise tacit and explicit knowledge (Darroch, 2003; Nonaka and Von Krogh, 2009).

This study was conducted in the state of Uttar Pradesh across ten producer organisations, detailed information was gathered from the board of directors and the farmer members of producer organisation. The knowledge management was categorised as knowledge acquisition, knowledge organisation, storage and knowledge dissemination. For knowledge acquisition, the resources most referred to by producer organisations were the state agriculture departments, State Agriculture Universities (SAUs), privately hired specialists, the Internet and social media, books, CDs, and visiting tours/programmes/Kisaan mela, surveys, etc. The knowledge organisation and storage was done mainly through pamphlets, data books, and soft copies; while the dissemination approaches were trainings/workshops, visits by experts/KVK scientists, awareness camps, audio-visual aids and some innovative approaches such as Grameen Haat, self-awareness, participatory videos, concepts involving children, etc. Knowledge management is one of the most important things required for the constant development of an organisation. It happens in all organisations but is less realised and recognised; only well-established ones used to document it. Most of the organisations tried to only obtain knowledge which directly affect their productivity; for example, in a milk producer company the main concern of knowledge acquisition is about artificial insemination and balanced ration and a horticulture company only focuses on information about polyhouse and fertiliser. However, the overall development of an organisation requires knowledge management in every aspect. In producer organisations, due to so many compliances in the registration and establishment process,

there are fewer chances of politics and corruption in its working; the main issues are leadership and sustainability. The need is to aggregate the farmers to evolve the company to a productive group. Joining a company merely by giving share does not solve the purpose. It requires good quality leadership and vision. Therefore, the leaders/CEOs/Directors should be chosen based on these skills and given training to manage a company/organisation. Licences of producer companies pertaining to trading and processing should be extended, and strategic relationships with larger business companies should be encouraged. Moreover, an educational campaign, targeted at producers, about the benefits of producer organisations should be initiated.

Introduction

The practice of the concept of aggregation and cooperative activities has been prevalent in several parts of India since a long time. There are numerous instances of pooling of resources by groups, such as pooling food grains after harvest to lend to needy members of the group before the next harvest, or collecting small contributions in cash at regular intervals to lend to members of the group (chit funds, 'Kuries' in Travancore, 'Bhishies' in Kolhapur etc.). Another instance of cooperation is the 'Lanas' – yearly partnerships of peasants to cultivate jointly and distribute the harvested produce in proportion to the labour and bullock power contributed by their partners, were similar instances of cooperation (GOI, 2009. P-5)

Towards the end of the 19th century, due to increasing problems of rural indebtedness and exploitation, farmers found cooperatives as an attractive mechanism for pooling their meagre resources for solving common problems relating to credit, supplies of inputs and marketing of agricultural produce; the Cooperative Society Act was implemented. Unfortunately, except in some states, the cooperative movement failed and many cooperatives broke down into self-help groups, which were found to have great potential in solving rural problems in groups. They act as an instrument for the empowerment of poor and marginalised sectors and its focus is on the management of savings and credit. NABARD has promoted and monitored the SHG programme, provided funds for capacity building and innovation, and helped change policy to create an enabling environment.

Foundation of Cooperatives: In 1844, a group of 28 artisans working in the cotton mills in the town of Rochdale, in the north of England, established the first modern cooperative business. The weavers faced miserable working conditions and low wages, and they could not afford the high prices of food and household goods. So they decided that by pooling their scarce resources and working together they could access basic goods at a lower price.

http://www.co-op-society.com/history.html.

In India there are about 138 million farm holdings which include 92.8 million marginal holdings and 24.8 million small holdings (Census, 2011) i.e., about 85% of the of total holdings are small and marginal and their share in total operated area is 44.6%. Every year 1.5 to 2.0 million land holdings are added to the marginal and small sector due to land fragmentation (Bakshi, P., 2017). Due to this fragmentation and disorganisation it is not only economically unviable for the farmers to adopt latest technology but also to use high-yielding varieties and inputs like seeds and fertilisers. They do not have access to markets and are forced to sell the produce in the field itself. Also due to absence of institutions to safeguard their interests, they are unable to integrate with the agricultural value chains, fight the risks and vulnerabilities such as commodity price volatility, crop failure, insect pest attacks etc. on their own. The concept of FPO was formed to make small holdings viable and growth more inclusive, and to integrate smallholders with agricultural markets. Efforts were made to deal with the shortcomings of the cooperative system, there was amendment of Companies Act 1956 as a response to the Report of the Committee under the Chairmanship of Professor Dr. Yoginder K Alagh,

Ministry of Consumer Affairs, Government of India, in 2002 and for this, a new Part IXA, divided into 12 chapters, has been included in the Companies Act, 1956, comprising 46 sections, numbered as 581A to 581Z and 581ZA to 581ZT (Alagh, 2007).

The producer organisations (POs) are formal rural organisations whose members are smallholder farmers who organise themselves with the objective of increasing farm income through improved production, marketing and local processing activities. (Rondot, 2001). A PO can be an SHG, farmers' association, federation, farmers' union, Farmer Interest Groups (FIGs), Community Interest Groups (CIGs) , a producer company, a cooperative society or any other legal form which provides for sharing of profits/benefits among the members. Small Farmers' Agribusiness Consortium (SFAC) is designated agency of Department of Agriculture and Cooperation (DAC) to act as a single-window for technical support, training needs, research and knowledge management and to create linkages to investments, technology and markets. It creates sustainable linkages among FPOs and inputs suppliers, technology providers, extension and research agencies and marketing and processing players, both in the public and private sectors (FPO Policy and Process Guidelines, 2013, DAC, 2013).

Knowledge Management (KM)

KM is an art that deals with the transformation of intellectual assets and information to create value for multiple stakeholders by deploying appropriate strategies and processes for the identification, acquisition, creation and sharing of knowledge in an organisation (McCampbell et al., 1999). It is concerned with ways of exchanging knowledge among those who can develop it and those who can use it. The lack of exchange of knowledge among farmers, and between farmers and those who produce of farm-relevant knowledge, has often been regarded as the key issue in pro-poor agricultural development. For that reason, many agricultural extension and development programmes, run by both governments and international donor agencies, have focused on diffusing knowledge to farmers who, in turn, are expected to gain from applying this knowledge in their production practices (Hartwich et al., 2007). Knowledge can be understood as both information and skills that are acquired through individual experience and trial and error, within an organisation or a learning community, or from outsiders adapting it to local contexts. Knowledge that rural and farming communities are typically interested in includes cultural management practices; new agricultural technologies; diagnostic information about plant and animal disease and soil-related problems; market information on inputs and sales (prices, seller, buyers, retailers); market demand and quality of products required for these markets; and land records and government policies.

A key distinction in knowledge management is often made between explicit knowledge (that can be codified and articulated in formal language) and tacit knowledge (personal knowledge embedded in experience) (Polanyi, 1966). Most of the corporate organisations generally focus on developing and diffusing explicit knowledge. They attempt to manage the process of information exchange between groups of specialists, companies, and research and development (R&D) organisations. However, now emphasis is given on the development of tacit knowledge and translation between the two

different knowledge forms. Most knowledge management programmes which have been studied in the corporate sector have an underlying motivation related to ideas of the knowledge economy, organisational efficiency, structural and cultural change, learning organisations, and financial profit (Hovland, 2003). However, knowledge management in a developing country like ours has a distinct connotation. For example, small farmers do not need to look for cutting-edge technology, rather they need to get access to the often abundantly available knowledge that can improve their livelihoods. Extension and development agencies try to assist farmers to access this type of knowledge but they are often biased to a certain trajectory of development, e.g. new plant varieties or processing technologies, where they have comparative advantages and can leverage funding. Poor farmers, however, would not feel comfortable to absorb one type of knowledge promoted by a certain technology provider if they have not cross-checked its usefulness with other farmers, community members and authorities, other development agents and even with product buyers. The issue here is that farmers try to reduce risk by contacting multiple sources of information in order to trust a certain type of technology. Indian agriculture is a complex enterprise involving millions of small and marginal farmers of which many of are illiterate, resource-poor and have little or no access to modern technologies. Knowledge management (KM) is, therefore, a very challenging task in Indian agriculture. Its application is still in its infancy in our country, unless everyone connected with agriculture is brought to a common platform for sharing and refining information, finding solutions to these issues is difficult. Hence, it is important to promote KM practices in rural communities by strengthening the interaction between local networks and organisational structures.

The KM journey is categorised into three generations

First generation (1990-1995): The initial work started with defining KM, investigating the potential benefits of KM for businesses, and designing specific KM projects. Advancement on research influenced by artificial intelligence, mainly in the direction of knowledge representation and storing can be seen in this phase.

Second generation (1996-2002): Practical application and implementation of KM in organisations started around 1996. KM research issues focused on business development, organisations, frameworks and Maier & Remus, operations and processes, and technological advancement.

Third generation (2002 onwards): The focus seems to be on the result part, such as the link between knowing and action. All knowledge is inherently social, cultural and organisational, and knowledge can only be realised through change in organisational activity and practice. (Anand et al, 2013)

Knowledge Management in Producer Organisations

Most POs, being small enterprises, hesitate to invest in KM, which they regard as comprising of expensive technology accessible only to large enterprises. There are many studies and research articles on the effect of knowledge management in organisations but there is no such study regarding POs; also, most POs are unaware of it. Knowledge management leads to organisational creativity and performance and involves creating, finding and collecting internal knowledge and best

practices. There is a need of sharing and understanding KM practices and applying those practices in new situations. Hence, it is important to study if and how producer organisations can convert knowledge of user demands, user habits, and competencies into action. The staff, management and board members must be capable and professional. The KM process will support productivity and targets the technology development to improve the primary process elements of the PO, and also the production, monitoring and control by offering extension and training, providing improved inputs, mechanisation and linkage to finance.

Knowledge Management frameworks

The implementation of knowledge management requires adequate planning and a strong setup. Knowledge is always present in an organisation, but due to lack of proper systems and processes it may not be effectual. KM requires fundamental changes in organisational culture, people's behaviour and work practices, and the institutionalisation of a technological infrastructure. As such, a number of frameworks have been developed to provide guidance and direction to organisations towards achieving KM. KM has changed from one generation to the next through constant improvements and new perspectives. Various methodologies, frameworks and technologies have been developed from time to time; however, most of the frameworks developed to date are designed primarily to meet the needs of large organisations and multinationals. Therefore, an important concern remains as to whether these approaches are suitable for smaller businesses or not. The various frameworks are:

- SECI model (1995) proposed by Nonaka and Takeuchi is a continuous process through which various groups and individuals create, share, disseminate and institutionalise knowledge. The SECI model consisted of four modes – socialisation, externalisation, combination and internalisation. In this model, knowledge follows a cycle in which implicit knowledge is 'extracted' to become explicit knowledge, and explicit knowledge is 're-internalized' into implicit knowledge.

- Wiig (1997) outlined four areas of emphasis for systematic KM. These comprised top-down monitoring and facilitation of knowledge-related activities, establishing and updating knowledge infrastructures, creating, renewing and organising knowledge assets, and distributing and applying them effectively to realise their value. Within each of these areas is a set of knowledge-related practices or activities for organisations to pursue.

- Wiig, de Hoog and van der Spek (1997) presented a KM framework which was used as a basis to suggest a set of methods and techniques for performing KM tasks. It comprises a cycle of four KM stages; conceptualise, reflect, act and review. These four stages are more inclined towards a problem-solving cycle which aims to improve the knowledge problems in an organisation but they do not provide concrete guidelines to assist a company in starting a KM initiative or in implementing one.

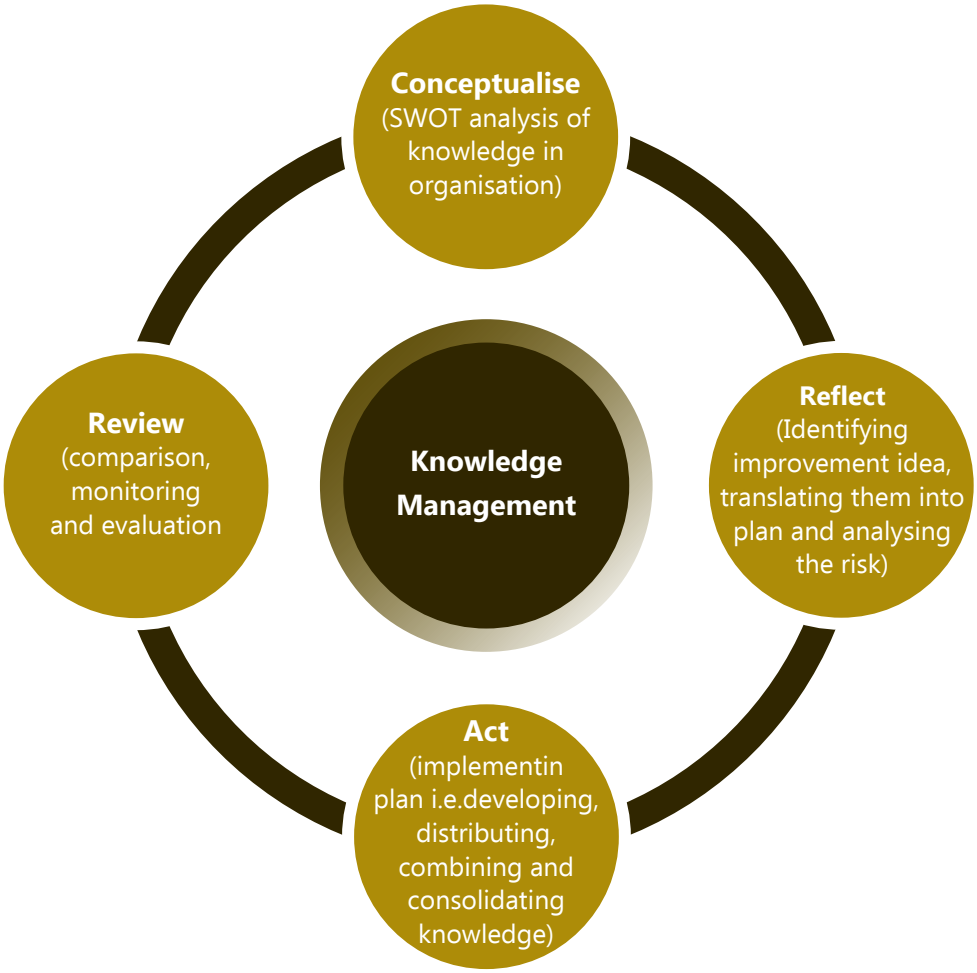


Fig. 1. Knowledge Management Framework (Wiig et al, 1997)

Lee and Yang (2000) introduced a knowledge value chain based on three building blocks; KM infrastructure, KM processes and knowledge performance. They divided the KM processes into five activities, namely; knowledge acquisition, innovation, protection, integration and dissemination. These processes are supported by the KM infrastructure, which they have classified into four categories; chief knowledge officer and management, knowledge worker recruitment, knowledge storage capacity, and customer or supplier relationship. The interaction between the KM processes and the KM infrastructure is what leads to the knowledge performance of an organisation.

Mentzas et al. (2001) presented framework which comprises the following elements: knowledge assets, strategy, structure, processes, systems and

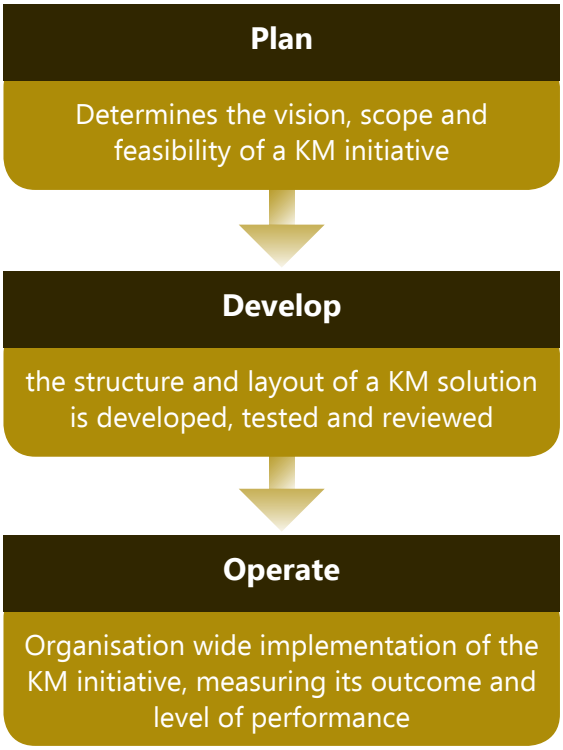


Fig. 2. Knowledge Management Framework (Mentaz et al, 2001)

knowledge interaction networks at the individual, team, organisational and inter-organisational levels. Their implementation method is simple and modular based on three main stages: plan, develop and operate.

Another framework by Holsapple and Joshi (2002) have three main components, namely knowledge resources, KM activities and KM influences in knowledge management.

knowledge resources	KM activities	KM influences
Reservoirs of knowledge like participants' knowledge, culture, infrastructure, knowledge artifacts, purpose and strategy	acquiring, selecting, internalising and using (generating and externalising) knowledge.	resource, managerial and environmental influences

Fig. 3. Knowledge Management Framework (Holsapple and Joshi, 2002)

Agricultural knowledge management in India

In India government agricultural extension officers are mostly involved in knowledge dissemination but the ratio of farmers to extension officers is as low as 1000:1. As a result, so many farmers are not able to get right information, which affects decision making and, in turn, productivity and price. Indian agricultural knowledge management system is dominated by public sector. It is organised under Indian Council for Agricultural Research (ICAR) and State Agricultural Universities (SAU). At national level, ICAR has established a Directorate of Knowledge Management in Agriculture (DKMA) with a mandate to make agricultural knowledge accessible to all. It has initiated the process of developing a national-level, multidimensional, multi-stakeholder and hierarchical KM portal like AGROPEDIA, RKMP etc. for agriculture domain under the National Agricultural Innovation Project (NAIP). At the state level, agricultural universities impart agricultural education and carry out research and extension activities. Universities connect with zonal and district-level agriculture research stations to conduct training and demonstrations, disseminate information and provide location-specific needs of the farmers and other stakeholders. Krishi Vigyan Kendras (KVK) and Agricultural Technology Management Agency (ATMA) serve as knowledge resource centres at the district level. They disseminate knowledge and provide trainings to the farmers at grassroots level. Many ICT tools like Gyandoot, Drishtee, MSSRF, Byrraju Foundation, BAIF etc. are involved in sharing and dissemination of agricultural knowledge. Private sector like ITC e-Choupal, Reuters Market Light (RML) and TCS are also disseminating agriculture knowledge to farmers.

Role of ICT in KM

ICT refers to technologies that provide access to information through telecommunications. It can play an important role in the sharing, exchanging and disseminating of knowledge and technologies. Over 58 % of the population in our country is dependent on agriculture and timely and relevant agricultural information needs to be available to farmers. ICT can play an important role in transmission

of modernised technical programmes in the rural vicinity. Various innovative ICT applications like e-choupal, A-aqua , Gyandoot , e-Sagu, setting up of Media Lab Asia etc. have been developed for better communication and rapidly changing demand of the consumers in rural areas. Some of the ICT initiatives in our country are as follows:

aAQUA: aAQUA (almost All Questions Answered) is a multilingual online question-and-answer forum developed by Media Lab Asia with IIT Bombay which provides online answers to questions asked by farmers and agri-professionals over the Internet. It allows users to create, view and manage content in their native language (Marathi and Hindi).

e-Sagu: It is a personalised agro-advisory system in which agricultural experts generate advice by using the latest information about the crop situation received in the form of both photographs and text. The expert advice is delivered to each farm on a regular basis (typically once in a week/two weeks depending on the type of crop) from the sowing stage to the harvesting stage to the farmer without asking a question.

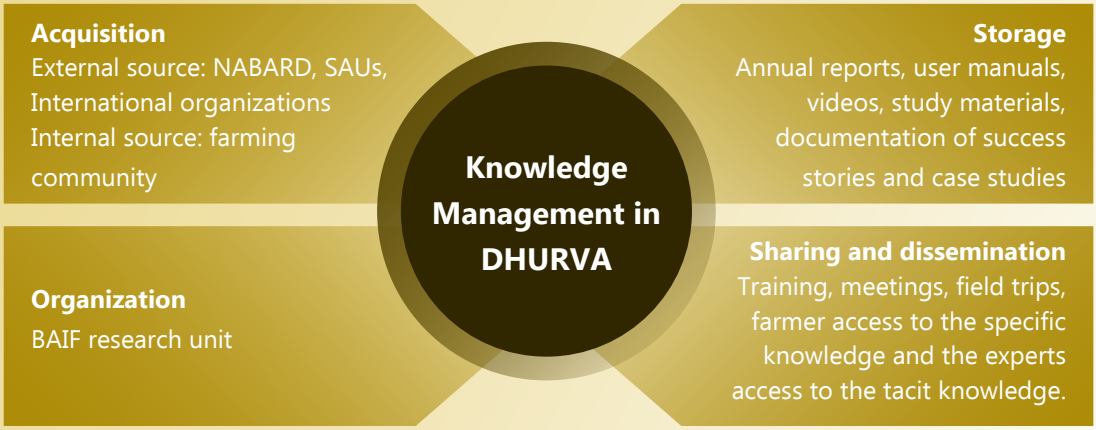
Gyandoot: This deals with directly linking of government and villagers through information kiosks. The kiosks provide access to a variety of government services, such as registration of complaints and submission of applications for the issuance of certificates and loans, data on prices of agricultural crops in different markets etc. The Gyandoot project was awarded the Stockholm Challenge Information Technology (IT) award in 2000 for public service and democracy.

e-choupal: It is an initiative of ITC Limited to link directly with rural farmers via the internet for procurement of agricultural and aquaculture information. e-Choupal tackles the challenges posed by Indian agriculture, characterised by fragmented farms, weak infrastructure and the involvement of intermediaries. The programme installs computers with Internet access in rural areas of India to offer farmers up-to-date marketing and agricultural information.

Digital Green: It focuses on training farmers to make and show short videos where they record their problems, share solutions and highlight success stories. It brings together researchers, development practitioners and rural communities to produce and share locally relevant information through videos. There are many more such ICT tools which aid in knowledge management and help in solving problems in the agricultural sector. Yet, significant improvements need to be made in supporting infrastructure and capacity building among farmers to enable them to use the information they access effectively. The challenges are to make ICT available to rural people and to build efficient national database.

Name: Dharampur Uththan Vahini (DHURVA)

Area of work: It is an associate organisation of BAIF Development Research Foundation, which is mainly working in agriculture and livestock development. Its activities are spread over Valsad, Navsari, and Dang districts in South Gujarat area of India where more than 90 per cent of the population belong to schedule tribes.



Performance Status of POs in India

Most of the working producer organisations are emerging ones, so major impact can't be seen on socio-economic conditions of members but changes are visible. For example, in Dahod district earlier most farmers used to produce small quantities and go individually for sale. Due to this, they had little bargaining power with traders and often accepted almost any price offered. However, large-scale farmers who produced large quantities of a consistent quality standard had no difficulty in attracting buyers and received the true market price for their output. This visible difference led small-scale farmers to co-operate with each other and form an association or farmers marketing group to compete with them and they formed an FPO in 2008. After this, Dahod district showed very good qualitative production of pulses in last three years (2008-2011). Data revealed that in the subsequent years, area and production under pulses increased and so result percentage of state contribution also increased from 2008 to 2011.

Table no. 1: Production (in thousand MT) of pulses during 2008-11 in Dahod District

Pulses Crop Average	2008-09	2009-10	2010-11	Average
Total Kharif	184	155	220	186
State Total	4240	3794	4604	4213
% of contribution	4.34	4.09	4.78	4.41
Total Rabi	288	324	416	343
State Total	1853	1405	2178	1812
% of contribution	15.54	23.06	19.10	18.93
Total	472	479	644	532
State Total	6093	5199	7218	6170
% of contribution	7.75	9.21	8.92	8.62

(Source:https://www.google.co.in/?gfe_rd=cr&ei=z7IMWYu4HMuL8QeBp6PYCQ)

A backyard poultry model was initiated in the predominantly tribal area of Nandurbar district, through a network of existing SHGs and supported by BAIF Development Research Foundation with an aim to provide surplus income and gainful self-employment. Initially people were not open this initiative. In order to involve more participants, extensive demonstrations of different package practices were given to SHG members through exposure visits and awareness campaigns. Group discussions and workshops were also organised at regular intervals, and the members responsible of running the hatchery were provided extended intensive training for managing operations. Now it is very successful and backyard poultry is practised by 770 families in 20 villages of Nandurbar and Dhule districts. The programme has now become self-sustainable, with people purchasing chicks and other inputs such as vaccines at market rates. Hatcheries, or mother units, are run profitably by local entrepreneurs as well as by SHG members. Thus, it improves the socio-economic condition of group members.

Table no. 2: Number of districts covered under this initiative (Mar 2011 to Sep 2012)

Progress 2010-11	**Dhadgaon**	**Akkalkuwa**	**Nandurbar**	**Sakri**	**Total**
No. of villages covered	1	2	6	11	20
No. of families involved	30	30	396	314	770
No. of birds given	300	300	6357	4768	11725
No. of participants who own birds	300	300	7365	1865	9680
No. of SHG members involved	30	30	188	314	462

(Bhamre et. al. 2013. Promoting Backyard Poultry Among The Tribes. Retrieved from http://sfacindia. com/ Krishidoot.html)

Collectivisation of producers, especially small and marginal farmers, into producer organisations has emerged as one of the most effective pathways to address the many challenges of agriculture. Most importantly, it has improved access to investments, technology and inputs and markets, also DAC has identified farmer as the most appropriate institutional form around which to mobilize farmers and build their capacity to collectively leverage their production and marketing strength (DAC, 2013).

Thus, it can be inferred that there is a huge scope for increasing the number of FPOs. As FPOs work in business mode, the roles of the extension personnel start from the formation of producer organisations to convert them into profitable and sustainable business organisations (Panda and Singh, 2016). Also the big challenge is how farmers can safeguard their interest and how agricultural extensionists may contribute in group formation and sustainability of group with FPOs.

The learning from the round table discussion (held at seven locations in India from 3 April 2012 to 31 July 2012) organised by Small Farmers' Agribusiness Consortium (SFAC) regarding current situation and needs of FPOs across the country identified major areas. The areas in which KM and extension roles are desirable are given below (Bhamre et. al. 2013. Promoting Backyard Poultry among The Tribes. Retrieved from http://sfacindia. com/Krishidoot.html):

- Lack of awareness about FPOs amongst producers, corporate sector, input suppliers, commercial banks, and district-level and agriculture department officials.
- Significant need for training and capacity building of farmers, shareholders, board of directors, FPO staff and handholding institutions
- Lack of access to and knowledge about extension services that can lead to productivity enhancement at farmer's field level
- Lack of an effective coordination and consultative mechanism at the regional and national level to network FPOs and leverage their collective voice and bargaining power

Success in agricultural activities depends on the capability of farmers and agricultural information actors to leverage local knowledge and embody it with exogenous knowledge. It is thus imperative to conduct a study on the knowledge management of producer organisations.

Objectives

1. To study the KM process among producer organisations
2. To conduct the case studies and SWOT analysis on POs.

Research Methodology

Research design: Descriptive research is used to describe characteristics of a population or phenomenon being studied. It addresses the questions 'what' and 'how' (what are the characteristics of producer organisations?) but cannot describe why a situation is caused. Descriptive research generally precedes explanatory research i.e. findings of a descriptive research leads to explanation of many situations and predictions, and before writing descriptive research survey, an investigation is conducted. In this study, detailed investigation of knowledge management of selected producer organisations is done and then findings are described. Therefore descriptive research design befits this study.

Locale of the study and sampling procedure

Producer organisations in the form of producer cooperatives have existed for over a century in India. The Primary Agricultural Cooperative Society (PACS) is one of the oldest forms of producer organisations in India. In addition to the cooperatives, there have been many other forms of producer organisations catering to specific or multiple functions such as self-help groups (SHGs), Common Interest Groups (CIGs), Joint Liability Groups (JLGs), Farmers Club, farmer producer organisations, and Producer Companies. This study was conducted in the state of Uttar Pradesh as it has second largest number of registered FPOs in the country.

Uttar Pradesh is the most populous state of India, as well as the most populous country subdivision in the world. Lucknow is the capital city of Uttar Pradesh. Uttar Pradesh is divided into 75 districts under 18 divisions with agriculture being the leading occupation. According to the report generated by India Brand Equity Foundation (IBEF) in 2014-15, Uttar Pradesh accounted for 19% share in the country's total food grain output. The state has experienced a high rate of economic growth in the past few years. Food grain production in the state in 2014-15 stood at 47,773.4 thousand tonnes. Wheat is the state's principal food crop and sugarcane is the main commercial crop. About 70% of India's sugar comes from Uttar Pradesh. Since the state has majority of population engaged in agriculture and also has abundant number of producer organisations, a diagnostic study on the knowledge management of agricultural information by producer organisations will provide useful information about strength and weakness of it and thus provide suggestions for policy making.

SWOT analysis of knowledge management of POs

SWOT analysis technique is used to indicate the current constraints and future possibilities in knowledge management of POs

Internal factor External factor	Strengths	Weaknesses
Opportunities	How to use the strengths to take advantage of the opportunities?	How to overcome the weaknesses that prevent from taking advantage of the opportunities?
Threats	How to use strengths to reduce the impact of threats?	How to address the weaknesses that will make the threats a reality

Data collection

Data collection is the process of gathering information about the research area in an established systematic fashion, which then enables conclusion and analysis. In this study, semi-structured interview schedule with closed-ended and open-ended questions was used for data collection. Also in-depth interviews were conducted with the CEOs/Heads of POs and the member farmers. The main criterion used to select producer organisations was that they provide an overall view about knowledge management and functioning of POs: (1) POs should be from different sectors such as agriculture, animal husbandry, horticulture, organic farming etc. (2) Both well-established and struggling organisations should be included. (3) The case studies included discussion both with members and officials. The data collection was done in eight POs in the Uttar Pradesh state across five districts – Pilibhit, Bareilly, Deoria, Kushinagar and Agra. These producer organisations from different fields were visited and thoroughly studied. The case studies highlight the diversity among POs and the practices that they follow. The case studies also reveal how different types of organisations can become important and complement each other on new roles at different times.

Findings

Knowledge management process in producer organisations

Knowledge management is a cyclical process through which knowledge goes from creation to application. In the process, new knowledge may again be created and the process continues. At each stage, it includes both tacit and explicit knowledge. Members from top management to field workers of the organisation and farmers are included in the process of KM to enable integration of tacit (individual/local knowledge) and explicit (scientific) knowledge that exits at various levels. This helps in providing better link for information and knowledge to flow in the lab-to-land and land-to-lab directions.

In this study, KM of organisations was assessed under four major stages: acquiring and creating, organising, storing, and sharing/disseminating. The various components studied under these were as follows:

1. **Acquiring and creating knowledge**
   It includes updating of existent knowledge, obtaining knowledge from external source, development of new content, and recovery of knowledge from people working in the organisation
   Socialisation of knowledge (tacit to tacit)
   Externalisation of knowledge (tacit to explicit)
   Combination of knowledge (explicit to explicit)
   Internalisation of knowledge (explicit to tacit)

2. **Knowledge organisation**
   Evaluation of knowledge
   Validation of knowledge
   Categorisation of knowledge
   Continuous review

3. **Storage of knowledge**
   Repository of knowledge
   Electronic database
   Backup

4. **Sharing and dissemination**
   Trainings
   Focus group discussion
   Workshops
   Advocacy
   Face-to-face interaction
   Printed media
   Internet/ICT tools

Different types of producer organisations

Government based

In India, National Bank for Agriculture and Rural Development (NABARD) promotes producer organisations (POs) in rural areas in the form of producer companies with financial support from Government of India. The formation and development is actively encouraged and supported by the Central and State Governments and their agencies, using financial resources from various centrally sponsored and State-funded schemes in the agriculture sector agencies.

Department of Agriculture and Cooperation (DAC), Ministry of Agriculture, Govt. of India acts as the nodal agency for the development and growth of FPOs. Small Farmers' Agribusiness Consortium (SFAC), a Society under DAC, is the designated agency of DAC to act as a single window for technical support, training needs, research and knowledge management and to create linkages to investments, technology and markets. SFAC provides all-round support to State Governments, FPOs and other entities engaged in promotion and development of FPOs. Also, NAFED take steps to include FPOs in the list of eligible institutions which act on its behalf to undertake price support purchase operations. The producer organisations promoted by government need strong leadership, although they get all kinds of help from NABARD. Only the right guidance can make them sustainable. For example, a banana producer company in Deoria, under the guidance of its CEO, established its two feed factory which make them economically sustainable in market. It has been seen that the producer organisations with poor leadership collapse when their resource institute withdraws its support.

NGO

A Corporate Social Responsibility (CSR) activity is defined as any intervention by a company directed towards community development (NFCG, 2013). By incorporating CSR in their business portfolio, companies have made significant achievements in the areas of education, healthcare, livelihoods, rural development and urban development (NFCG, 2013). As per the Indian Companies Act 2013, it is mandatory for certain classes of enterprises to spend 2 percent of their profit for social development activities such as education, health, agriculture, animal husbandry and rural livelihood generation (CII, 2013). Under CSR, companies adopt villages based on their baseline survey, and then they work on the development and upliftment of village. In the beginning they implement all activities with their own money but once the implementation is done they charge nominal fees for services. The tactic is that this will inculcate a feeling of responsibility among users as they are paying. For example, in Tahtajpur village of Bareilly, MRIDA group of companies installed solar plates for electrification, but they charged Rs 150/- monthly jointly from two persons. This money went to the fund of VDC (Village Development Council) which is further used in welfare of village; also they aid women financially to learn stitching and sewing. Once they become expert they also provide them room to open their centre but start taking rent from them, it make them dependent and also the efforts sustainable. The best approach of CSR companies is making better market linkages, due to their broad linkage they used to connect farmers with good disposal options, for example, the MRIDA group link the

vegetable producers with the nearby big universities so they can directly sell their vegetables at market price.

Farmers' clubs

Farmers' clubs are informal forums at the grassroots level. Such clubs are organised by rural branches of banks with the support and financial assistance of NABARD for the mutual benefit of the banks and the rural people. It can be promoted in a village or a cluster of villages, generally in the operational area of a bank. The main functions of the office bearers would be to convene meetings, arrange meetings with experts, maintain books of accounts, coordinate with the bank and line departments of the state governments, and liaise with the banks. Farmer clubs can deal with many agricultural problems such as market access, middlemen, land fragmentation etc. For instance, banana growers in Kushinagar, unified as farmers' clubs, eliminate the traders/middlemen from their business. Another major problem is of money trapped in market. The whole market works on borrowing system: traders buy from farmers on assurance that they will pay them when they get money from chambers, chambers give to local banana sellers on borrowing, and get dependent on them for money, and this becomes a vicious cycle in which farmers are trapped. Sometimes farmers don't even know the traders, and live in fear of losing their money. After formation of farmers' clubs this problem is getting resolved, as now the members of the farmers club themselves do the marketing and selling. These farmers clubs later combine to form producer companies.

Cooperatives

Cooperatives are the one of the oldest concepts for uniting farmers. They are registered under the State Cooperatives Societies Act and are expected to provide access to risk-bearing capital, manage risk through product diversification, set market standards, and provide marketing conditions and economic democracy at gross-root level. The cooperative system in our country is affected by political interference, corruption and poor efficiency and there is a general impression that it has failed in India. Even then, in some of the states – Gujarat, Maharashtra and Karnataka –the movement has been a success. The Navgram Dairy and Agricultural Cooperative Society in Bareilly not only provide credit but also covers activities such as production, farming, marketing and processing. It was found that most of the member farmers joined cooperatives only because they thought that they were government-linked bodies and somehow membership would benefit them in getting subsidies. So this cooperative conducted awareness camps especially related to this issue so that farmers could practice their right as cooperative members and get much more benefits than just subsidies.

Self-help groups

A self-help group is a self-governed, peer-controlled and informal group of people with the same socio-economic background and having a desire to collectively achieve common purposes. Most self-help groups are engaged in self-employment activities such as papad making, pickles making, dairy farming and agricultural activities. There are usually 20 members in an SHG to conduct the

activities. They pool their resources to become financially stable by taking loans from the money collected by the group and by means of making everybody in that group self-employed.

Short description of producer organisations

1. Purvanchal Poultry Producer Company Limited

Established: 30 October, 2015
Members: 18
CEO: Shri Indrajeet Singh

In the Deoria district there are many farmers who used to keep poultry and there was ample production of egg production. Yet, eggs were imported from Punjab, and the local farmers had to sell eggs at very cheaper rates. This company was formed with the motive to provide farmers a reasonable price to farmers and stop obtaining eggs from other states.

The objective behind the establishment of this company is to obtain an economic size of poultry layer units in Eastern Uttar Pradesh. Aggregate inputs management, aggregate marketing of eggs and value additions are the three basic pillars of the business plan of this company.

Services: The main task which the company undertook was making poultry feed (layer birds) and selling eggs of members who are not able to sell their egg, although most of the members are able to sell their own eggs. The company used to sell eggs in wholesale market, also they are planning for the retail marketing of the eggs, it will open market outlets at prominent points in coordination with Agri-Clinic and Agri-Business Centers (ACABCs) in District Deoria and Kushinagar. First such outlet has already been opened by Rishika ACABC, Sonughat-Barhaj Road, Deoria which started business on 27 February 2016.

2. Kushinagar Banana Producer Company Limited

Established: 30 June, 2015
Members: 99
CEO: Ajay Sharma

This company is situated at Khadda Nagar panchayat and comprises of about 99 farmers. In this region, banana is the traditional crop grown by all farmers. This company was formed with the motive of uniting the banana farmers to increase their bargaining power and to provide them timely money for their product.

The company collects produce from farmers and transports it to the Chamber in Gorakhpur. Earlier, the traders used to come and purchase banana from farmers at much lower rate from market: e.g. if market rate was Rs. 1000/quintal, they would purchase at rate of Rs. 700-800. The company pays the farmers at market price, and after overall sale, on profit they get dividend as per their share. They have done total business of about Rs.183.84 lakh till now in two years.

3. Leeward Golden Mushroom Farmer Producer Company Limited

Established: 31 Dec, 2015
Members: 287
CEO: Mahendra Gangwar

This producer company was formed with the vision to eliminate mediators from the market chain and to provide direct benefit to the farmer. The company deals with mushroom, which is one of the major produce and less recognized agricultural commodity of the area. The CEO of this company thought to organise the scattered mushroom producers and, apart from fresh mushroom, also prepare extra products to make it sustainable.

The farmers or members bring their produce to the company, and the company gives them the market price; farmers who live near cities also sell on their own. The fresh mushroom is supplied to nearby cities and rest are converted into products like mushroom pickle, mushroom badi or chunks. There are plans to prepare mushroom protein powder and dry gravy for various mushroom veggies. The processed products are costlier than fresh mushrooms; Mushroom pickle is sold at the rate of Rs. 400/kg, which provide farmers more income. Of the profit earned by the producer company, 60% is given to the members as per their share and 40 % goes to reserve of the company for other initiatives.

4. Navgram Dairy and Agricultural Cooperative Society Limited

Established: 11 Oct, 2015
Members: 200
CEO: Omvir Singh

The Society was established to protect the farmers from middlemen and provide them better price for their produce. This cooperative is situated at Golden Green Park colony where it has its milk collection and processing unit. The members contribute the milk every morning here by themselves, milk quality is tested and accordingly payment is made at market rate; poor quality milk is rejected. After this, they dispose of the milk quickly: most of the raw milk is sold off immediately and the rest of the milk is processed as curd, ghee, paneer, khoya, lassi and ice-cream. Due to good quality all nearby residents buy milk from the company. The milk and milk products are sold under the brand name 'Surbhi'. These products are in higher demand in the market than the supply. This means that the cooperative has great scope for expansion.

5. Producer organisation : CREATION BIOTECH

Established: 2015
Members: 1100
CEO: Nihal Singh

This PO deals with organic farming and mainly deals with mint oil. Last year, its production was 95 tonnes of mint oil with a turnover of Rs. 20 crore. There are plans to expand it to include other

agricultural products. According to its owner, the quality of soil has degraded so much that most of the land area has become barren and being organic is the only way to save it.

6. Saahaj Milk Producer Company

Established: October 2014
Members: 92,000
CEO: Dr. Rishiraj Singh

Saahaj is a milk producer company in which only milk-producing farmers can become members. It is owned and controlled by user members based on mutual assistance principles. Its head office is located in Agra. The main objective is to carry on the business of purchasing and processing of milk of its members. Currently it is operating in 10 districts, with main three clusters at Agra, Moradabad, East of Uttar Pradesh, handling about 4.5 lakh litres of milk per day. The members have to give minimum 200 days and up to 500 litres of milk and they have to take share of Rs 1/litre of milk annually. The company has a bulk milk collection point in 3455 villages where automatic checking of milk and Solid Not Fat (SNF) is done and sub-standard milk is rejected. The payment is done after 10 days in the bank accounts of members; these accounts have been opened for this purpose. There is complete transparency in whole process.

7. Faridpur Horticultural Cooperative Limited

Established: 2008
Members: 500
CEO: Dimple Vajpayee

Faridpur, in Uttar Pradesh falls on the 'vegetable belt' of the region, with most farmers growing seasonal vegetables, especially potato. This cooperative was formed with a motive to provide farmers cheaper input like seeds and fertilisers, and also to provide them benefits of government schemes. Farmers get advice benefitting their crops from the horticulture department, institutes and KVKs.

8. MRIDA Renergy & Development (P) limited

Established: 2014
Founder: Arun Nagpal

MRIDA works in Bareilly as the CSR (Corporate social responsibility) activity for Infrastructure Leasing & Financial Services Ltd. (IL&FS) Engineering and Construction Company Limited since 2014. It has adopted four villages based on their baseline survey about lacking basic amenities like electricity.

In the adopted villages, lack of electricity was a major problem. The so they implemented three 240 Watt DC micro grids to light up the villages. Importantly, to inculcate a feeling of responsibility, this is not given free of cost; two members have to jointly pay Rs 150 and this money goes to saving account of group which is further used for welfare purposes. Villagers take the care of its management by themselves.

The other big problem was lack of proper marketing channel, most of the farmers in Tahtajpur village used to grow vegetables and sell it in nearby mandis at very cheap rate; for instance, the market price of ladyfingers was Rs 40/kg whereas they used to sell it at Rs 5-10/kg. So MRIDA linked them with the nearby Invertis University, which required vegetables for its mess (canteen). Now farmers bring their vegetables to one collection point of MRIDA in morning, then it is transported to university and farmers get good prices. They are also relieved from going to market and they used this saved time for other purposes.

Knowledge Management (KM)

KM is important to enable the organisation enhance and expand their innovation processes. Most of the agricultural organisations have a wealth of knowledge where many good practices are transferred without being well documented. In an organisation, KM refers to the systematic process for acquiring, organizing and exchanging knowledge among employees in order to have effective utilization of knowledge. In this study, the knowledge management process is studied across eight producer organisations.

1. Acquisition of knowledge

Knowledge acquisition is one of the most important things required for the constant development of an organisation. It happens in all organisations but is not realized and recognized much; only well-established ones document it. Most organisations only try to obtain knowledge which directly affect their productivity; for example, in a milk producing company the main concern of knowledge acquisition is about artificial insemination and balanced ration and a horticulture company only focuses on information about polyhouse and fertiliser. However, the overall development of an organisation requires knowledge management in every aspect. The various source of acquisition of knowledge in producer organisations:

a. **State agricultural department:** The state agricultural departments act as important sources for acquisition of knowledge. They not only provide information but also help in implementing them. For example, a horticulture producer company in Faridpur directly connects with the state horticulture department in Bareilly for any issues related to horticulture crops like seed varieties, crop diseases, beneficial schemes etc. They also link them with other source of knowledge like with input dealers, agriculture universities, other producer organisations etc.
b. **State Agriculture Universities (SAUs):** Most of the organisations are directly linked with related state universities for time to time guidance and information. For instance, the producer organisations related to livestock sector in Bareilly are in contact with IVRI while those are of the agriculture sector are mostly in contact with GBPUAT. The benefit is that these universities not only provide them information but also increase their contacts and as many other people also visit universities, this also advertise them and by reference of universities they easily can connect with more people.

c. **Own hired specialist:** The well-established organisations hire their own specialist such as agronomist, animal science specialist, horticulture specialist etc. for getting knowledge, they used to visit the farms periodically and advise them, also give them updates.

d. **Internet and social media:** Internet is the most instant and important source of acquiring knowledge, almost all producer organisations use internet as one of the most important source for obtaining preliminary information, social media like Facebook and WhatsApp are also widely used like agriprasar, pulse grower page, wats app groups like organic farmers groups, potato growers group etc., many problems get solved in these groups, if they are also not available to answer, they circulate it to the experts in their contact.

e. **Books, CDs:** Many farmer producers also acquire knowledge through reading the books pertaining to subject, one the member of poultry producer company learnt the poultry keeping by reading the books and now he is rearing 3000 birds successfully, also they learnt the process of feed preparation by CD obtained from CARI. Also the journals and magazines serve an important source of information.

f. **Tours/programmes/Kissan mela:** The educational tours act as one of the best method to acquire information and learning for farmers, it inspires farmers to see the people same like them doing better farming, almost all producer organisations used to take farmers to tours and field visits for example, MRIDA took farmers to Pune for getting functional horticultural training, their they learn about poly/green houses, small-scale storage, soil testing etc. Also there are visits to progressive farmers fields to learn about the innovative approaches like farmers of dairy cooperative in Bareilly visited Jalgaon where there is upgradation of Gir and Kankrej is done, also visited to Go-Vigyan Anushandhan Kendra, Nagpur to learn about process of making of panchagavya and medicinal value of dairy products. The producer organisations also used to send their members to attend kissan mela, to see exhibitions, participate in debates related to agricultural issues which enhance their knowledge.

g. **Survey:** Some of the committed organisations used to conduct survey among their farmer members, to know about their knowledge level and to assess the areas where training and changes are required. This give an idea why people are following a practice and why not. This also provide information about the indigenous methods prevailing in the area and its importance, and how to amplify its effect. The creation biotech prodcer company conducted survey on the social and health issues among its members to know the factors which hinder their participations and reduce the productivity, and thereafter it was found that nutrition deficiency and poor quality water was one of the reason, so they start conducting regular health camp and installed hand pumps in villages.

2. Organisation of knowledge

After the acquisition of knowledge the next requirement is of knowledge organisation. Theoretically in knowledge organisation, knowledge is evaluated/validated to ensure that it is accurate and valuable before it can be used. Once it is evaluated, it is categorised and represented in a structured manner with indexing/mapping to facilitate efficient storage in the organisation repository and effective

usage at later point. The purpose of this stage is to provide easy access to knowledge, reduce the cost of maintenance and improve the quality. But in most organisations this step is missing; no one bothers about organising the information and knowledge. There is documentation of financial statements, detail of farmers etc., but the knowledge documentation is rarely found. In the name of knowledge organisation and storage, one will find some pamphlets or some data book only that too is not stored safely as source of knowledge. The reason may be most are the budding producer companies, their major focus is on the financial establishment. Knowledge organisation may seem to be very far, but if they start managing this knowledge from beginning it will improve the quality in long term.

3. Storage of knowledge

Knowledge has a constant, continuous and dynamic flow. If available knowledge is not suitably stored in a system, it could easily be lost in different ways – such as forgetting, non-usage, change of the person handling it etc. Stored knowledge can effectively safeguard an organisation from knowledge loss. The knowledge storage was found only in few producer organisations in form of books, reports, CDs, soft copies, records like production, sales, input etc., pamphlets and leaflets. Many POs hadn't even thought of knowledge storage because according to them once knowledge was delivered to farmers, it would always remain with them so storage is not an issue.

4. Sharing/dissemination of knowledge

Sharing of knowledge takes place among individuals and/or groups and members in the organisation, it promotes learning and creating new knowledge. Transfer of knowledge can be both in the horizontal and/or vertical directions. Horizontal knowledge transfer takes place among the employees in the organisations and vertical knowledge transfer take place between organisations.

The various ways of knowledge dissemination in producer organisations:

1. **Trainings/workshops:** Almost all producer organisations conduct trainings and workshops for their members. Most trainings are organized at the beginning of sowing season, mid-season and at the time harvesting.
2. **Visit of experts/KVK scientists:** The KVK scientists used to conduct visits in the field of producers time to time and advise them, farmers can also directly contact the experts. The visits are generally related to crop diseases and innovative methods.
3. **E-hub:** Some of the producers organisations equip villages with E-hub centres, providing computer and internet and training one villager about its operation. The members from the centre can get any information from the centre e.g. marketing, prices, best methods etc.
4. **Awareness camps:** It has been seen that there is lack of awareness about the concept of cooperatives and POs among the members, they just join the thinking that it is government body and somehow it will benefit them. So many POs are spreading awareness about that so that

farmers can practice their right as cooperative member and make it progressive. Also they take farmers on tour to institutes and to progressive farmers' fields for more exposure.

5. **Audio-visual aids:** Lectures and demonstrations are the most commonly used methods for dissemination of information. Some producer companies hire rooms in villages to keep projectors and sound systems for dissemination knowledge.
6. **Innovative methods:** Some producer companies use different innovative methods to attract people; for example, MRIDA in Bareilly have the concept of Grameen Haat, a small structure, which consists of cane huts and colourful bamboos situated along the Bareilly Bypass on National Highway 24 towards Lucknow. It is made colourful to attract the attention of travellers and to serve the basic demands of anyone passing through. When passers-by stop over there for a break, they also glance at the various rural goods like handicrafts, kitchen spices, pickles etc. laid out on display. Interested passers buy the products, which also helps in advertising of the villagers' produce.

Table no. 3: KM in different producer organisations

Producer Organisations	Acquisition	Organisation	Storage	Dissemination
MRIDA Renergy & Development (P) Limited, 2014	Horticulture department, company's hired agronomist, IVRI, Internet.	MRIDA centre at Bareilly	CDs, laptop, reports	Expert visit, meetings, workshop, E-hub centre, educational tour, presentations etc.
Creation Biotech, 2015	Institutes like IVRI, GPPUAT, IARI etc., linked with various fb groups and WhatsApp groups like agriprasar, pulse grower, organic farmers group, potato growers group etc., books internet, attending exhibitions, symposiums, debates etc.	At their centre by experts	Maintain production record, kisaan dairy, computer networking	Trainings, meetings, daily inspection, field visit
Leeward Golden Mushroom Farmer Producer Company Limited, Pilibhit, 2015	GBPUAT, IVRI, Kanpur agricultural university, input dealers from Jaunpur and Agra	experimentation first on sample field, after evaluation knowledge is organized	No clue of storage was there	Meetings, demonstration, trainings phone calls, pamphlets
Navgram Dairy and Agricultural cooperative Society Limited, 2014	Veterinary doctors, IVRI, from well propagating cattle farms like Jalon and Mirzapur, GoVigyan Anusandhan Kendra Nagpur, educational tour etc.	No organisation was there	Pamphlets, soft copy	Lecture, demonstration, awareness camps
Kushinagar banana producer company imited,2014	NABARD, farmers club, internet, agricultural experts	Organize as per the requirement of farmers need	Pamphlets, data books, soft copies etc.	Monthly meetings, workshops, audio-visual aids
Purvanchal poultry producer company, 2013	CARI, learn directly through CDs and booklets , veterinary doctors, educational tour	No organisations was done	Leaflets, pamphlets, soft copy	annual general meeting, discussions, trainings and workshops
Saahaj Milk Producer company, 2014	NDDB, internet, journals, survey	Systematic organisation at their headquarters in Aga	Magazines, reports, soft copies	Meetings, trainings, Vet officer visits, voice messages, regular field visits

Producer Organisations	Acquisition	Organisation	Storage	Dissemination
Faridpur horticultural cooperative limited, 2008	Dept. of horticulture and food processing, GBPUAT, IVRI, input dealers, educational tour	No organisation was there	No arrangement for storage of knowledge was there	Famer to farmer, direct contact with experts

SWOT analysis

The SWOT approach involves systematic thinking and comprehensive diagnosis of factors relating to a new product, technology, management, or planning (Weihrich, 1982). It is used extensively in strategic planning, where all factors influencing the operational environment are diagnosed with greater detail; it is categorised into internal (strengths, weaknesses) and external (opportunities, threats)

The SWOT analysis of producer organisations as per the perusal of case studies:-

Strengths: It includes internal attributes and resources that support a successful outcome of an organisation. The strength of producer organisations are:

- **Business model:** The producer company follow business model; its main purpose is to inculcate business skills in farmers. Business plans are developed in detail with at least 10% of FPO farmer members to provide clear vision. Agricultural production and trade can increase through a partnership of farmer groups, extension groups and farmer associations and then only farmers may be able to secure commercial contracts for their produce selling at higher prices than possible.
- **Cooperation among FPOs:** The FPOs across states can connect with each other, solving marketing problems to some extent; for example, the producer companies in two areas can help in supplementing and marketing each others' product, eliminating middlemen and reducing marketing cost.
- **Working structure:** The Board Members, Chairman and Chief Executive Officers are all selected from the members; no outsider can take any post in company. It brings transparency and trust among the members. Also there are annual general meetings generally in six months in which whole activity, transactions etc. are revealed and discussed, all members have equal right to give their views about the functioning of organisation, this strengthen the working structure of an organisation.

Weakness: These are the factors which stop an organisation from performing at its optimum level. The perceived weakness in POs:

- **Aggregation of farmers into Farmer Interest Groups (FIGs):** In most organisations farmers do not want to join the groups of producer companies; one reason is because of the share that they have to give for joining, there are about 6000 banana farmers in Kushinagar area but only 99 were ready to give share, other farmers want to join the company but without giving any share, other is less reliability on effective working of such organisations, also there is lack of attitude of businessmanship among farmers.
- **Financial support:** The producer companies, when formed, are supported by NABARD or research institutes employed by it for three years. However, often, sudden complete withdrawal of support after three years, makes those companies which have not become sustainable stagger. The companies which started from zero take some time to become sustainable. So, along with financial support, they should also be aided in their way of functioning.
- **Difficult to come out of cooperative mentality:** Producer companies are a modified version of cooperatives; often the cooperatives have been converted into producer companies. Hence, although the company (profit-oriented) concept is inculcated in it, the people implementing it are the same, so somewhere it gets influenced.
- **Less government support:** The producer companies in our country face the challenge in getting license, such as the Agricultural Produce Marketing Committee (APMC) licenses for processing and trading. These are not given to PC because traditional cooperatives already have licenses in many places. Many certificates are given to the cooperatives and there are no provisions in the by-laws to provide such licenses to producer companies. Also, banks refuse to lend to these companies due to lack of guarantees from either Central or State Governments (Murray, 2009 and NRRA, 2009)

Opportunities: Opportunities refer to favorable external factors that an organisation can use to give it a competitive advantage. There are various such factors for POs:

- **Limited government control:** The producer companies have limited government interference as they are autonomous, and thereby free to operate under their own terms and conditions. They can take over the responsibility of any one or more activities in the value chain of the produce, right from procurement of raw material to delivery of the final product at the ultimate consumers' doorstep which will benefit the members.
- **Better linkage:** As they're private entities, producer companies can link with other private companies for support and better marketing. For example, MRIDA linked their women members with Jaypore and Pero clothing companies. They made cotton bags for them and earned Rs. 6-7/ bag, whereas they would have got Rs. 1-2/bag in Bareilly. Thus, they made Rs. 5000-6000/month from their work.
- **Quality business:** Quality products always fetch higher prices and get easy marketing. Therefore, producer companies should encourage their members to increase the quality of their products to get them easily absorbed in the market. Like how Creation Biotech instructed and assisted its members to produce organic mint, and now has so much demand in market that they are not even able to fulfil it and farmers always get higher price than market. So the producer organisations should carry out mentoring and skill development among their members.

Threats: It refers to factors that have the potential to harm an organisation. The threats for a producer organisation are:

- **Marketing:** Marketing is one of the major issues haunting the Indian agricultural system; production is increasing but the distribution is arising as a big question. Producer organisations are also facing this problem, finding out the innovative ways to market the products is the solution. The banana producer company in Kushinagar was dealing with this problem; as the bananas ripened, farmers had to sell them at whatever price they could get due to its perishability and it led them to incur losses. Consequently, the company plans to make banana products like chips, jam, biscuits, Bournvita, cornflakes etc. For this, they took members to visit Karnataka and Kerala for exposure on how to make these products. They also plan on opening a one-stop centre for all banana products, which will increase their market access. Likewise, the poultry producer company in Deoria initially used to sell eggs in the wholesale market but this was not providing them much profit, so now they plan to do retail marketing of the eggs, opening market outlets at prominent points in coordination with Agri-Clinic and Agri-Business Centres (ACABCs) in districts Deoria and Kushinagar.
- **Sustainability:** Sustainability is the ability to maintain or support an activity or process over the long term. There are many producer organisations formed by assistance of NABARD which were not able to sustain after the resource institutes withdraw their support. The need is that producer organisations should find out different sources and which they can wisely use for income generation.

Purvanchal Poultry Producer Company in Deoria was formed with the motive to provide reasonable prices to farmers and stop the export of eggs from other places. They have planned some sustainability measures.

- They are planning to open rice mill so that leftover rice bran and broken rice can be used for poultry feed; also, it will be another source of income.
- They intend to open egg tray factory for storing eggs. This will help in protecting eggs against stresses exerted during transportation and storage by absorbing a lot of shock and limiting the incidents of fracture to the fragile egg shells, thus reducing losses due to breakage of egg. Selling the egg trays will be another source of income for company.
- They have plans to open their own hatchery for producing birds for sale to backyard poultry keepers, and also to their own members at cheaper rate, and it will also provide competitive edge in the market. They can also produce chicks of several different breeds and varieties.

- **Competition:** Being a company, producer companies have to face competition with other private companies. For adding and retaining members in their company they need to provide them better and cheaper product in comparison to others. For example, in Deoria, when the poultry producer company started providing feed at market price to members, the competitive company reduced the feed rate, and so the members start buying from there creating difficulty for company. Hence, producer companies need to be alert to the measures to tackle this competition.

- **Political interference and ownership:** This was the most important drawback of cooperatives and there are many more chances of infection of producer companies from this. In some companies, CEOs control the whole company for their benefit, only taking some rich farmers under their control so that no one opposes them. There is a need to spread awareness among members about the functioning of producer companies; they should not act only as mere spectators but should practice their rights and take benefits.

Table no 4: Sustainability efforts and challenges in POs

Producer Organisations	Sustainability efforts	Challenges
MRIDA Renergy & Development (P) Limited, 2014	Identifying market channels for farmers Opened E-hub in the village Making VDC in village	Market linkage
Creation biotech, 2015	Organic mint oil Introducing innovations Monitoring farmers and maintaining kissan diaries	Maintaining the organic nature of fields To fulfil the demand
Leeward Golden Mushroom Farmer Producer Company Limited, Pilibhit 2015	To prepare mushroom protein powder and dry gravy for various mushroom veggies , Advertising in interesting ways, Growing medicinal mushrooms in off-season.	perishability of product off-season activities
Navgram Dairy and Agricultural cooperative Society Limited, 2014	Using dairy waste as organic manure, bio fertilizer and bio- pesticide Making Panchgavya Organizing farmers to open dairy	Lack of farmer enthusiasm, Malpractices in market
Kushinagar banana producer company limited,2014	Making banana products like chips, jam, biscuits, bournvita, cornflakes etc. Setting up a special small mall only for banana products Effort is to open their own banana chamber and develop good quality banana saplings	Preventing money stacking in market Financial stability
Purvanchal poultry producer company, 2013	Opened feed and egg tray factories open their own hatchery for producing birds	Competition in market Acquiring more members
Saahaj Milk Producer company, 2014	diversifying its operations Implementing various programmes Extending their brand	Maintaining the cooling chain Communication problem
Faridpur horticultural cooperative limited, 2008	Providing new horticultural Techniques to farmers	Lack of quality assessment

Recommendations

The main aim to conduct this study was to gather information about how knowledge management is done in producer organisations and how it is affecting their functioning. The main recommendations derived from the study are:

- There is need to organise farmers in productive group i.e. many farmers used to give share and join the organisations but after that mostly have nothing to do with it and only CEO and directors run the company which can lead to corruption in it. All members are required to participate actively in affairs of organisation to get maximum benefit.
- Most of the producer companies are supported by NABARD for three years and after that they have to become sustainable and it requires good quality of leadership and vision, the CEOs and directors should be trained about how to run a company and make it sustainable in long run, there should be provision of such trainings in guidelines for formation of producer organisations.
- There is need to run educational campaigns targeted at producers, about the benefits of producer organisations. Proper advertisement by broadcasting should be done by government to encourage more people to join producer organisations.
- Small producer organisations/companies should be encouraged towards strategic relationship with larger business companies. There should be some provisions such that each big company should help some definite number of producer organisations to become sustainable.
- There is need to develop a knowledge management framework for small and budding agricultural enterprises/organisations in Indian conditions which they can follow without much expenditure in an easy way so that they can improve their performance.

Conclusions

The producer companies are seen as a new ray of hope for collectivizing farmers and upliftment of socio-economic condition of small and marginal farmers. Due to so many compliances in its registration and establishment, there are less chances of creeping in of politics and corruption in its working but leadership and sustainability are still hurdles. The need is to aggregate the farmers to evolve in form of a productive group, only joining a company merely by giving share will not solve the purpose. And it requires good quality of leadership and vision, so the leaders/CEOs/ board of directors should be chosen based on these skills and should be given training to manage a company/ organisation. Knowledge management can also play an important role in it but since most of the producer organisations are in beginning stage of their establishment, most of them have neglected it in their working system. However, some of the private producer organisations have employed it in innovative ways and it is providing them benefit, so POs should develop networks among them and should learn from each other. In knowledge management the most lacking part was organisation and storage. Knowledge is shared same as it is obtained from a source; the evaluation and validation part is missing which decreases the applicability of knowledge in field condition. So organisations should focus on this part and disseminate any information after testing. Every organisation should have knowledge management set up incorporated in their working system from beginning only, it will provide them guidance in planning activities for members and will provide long-term benefit.

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Annexure

State-wise FPOs registered in the country as on 30-09-2015

Sl. No.	State	Farmers under FPOs			Number of FPOs		
		Mobilized	Under mobilization	Total	Registered	Under the process of registration	Total
1	Andhra Pradesh	5976	6024	12000	5	7	12
2	Arunachal Pradesh	1750	0	1750	2	0	2
3	Assam	25000	0	2500	25	0	25
4	Bihar	14148	3852	18000	8	11	9
5	Chhattisgarh	13293	12707	26000	5	20	25
6	Delhi	3535	0	3535	4	0	4
7	Goa	1810	0	1810	1	1	2
8	Gujarat	31047	953	32000	22	11	33
9	Haryana	8408	0	8408	16	9	25
10	Himachal Pradesh	3698	1152	4850	0	4	4
11	Jammu	3694	287	3981	1	2	3
12	Srinagar	3120	960	4080	1	3	4
13	Jharkhand	10009	0	10009	8	0	8
14	Karnataka	25904	58596	84500	14	68	82
15	Madhya Pradesh	83277	61723	145000	50	90	144
16	Maharashtra	63052	28448	91500	46	43	89
17	Manipur	2650	300	2950	2	1	3
18	Meghalaya	1970	3105	5075	2	2	4
19	Mizoram	1700	1000	2700	0	3	3
20	Nagaland	1750	0	1750	2	0	2
21	Odisha	26097	12803	38900	6	35	41
22	Punjab	6288	0	6288	7	0	7
23	Rajasthan	51277	6233	57500	42	7	49
24	Sikkim	1876	0	18760	2	0	2
25	Tamil Nadu	60366	0	60366	53	7	60
26	Telangana	58354	0	58354	44	10	54
27	Tripura	2850	0	2850	3	1	4
28	Uttarakhand	44004	0	44004	7	0	7
29	Uttar Pradesh	55444	7447	62891	89	10	99
30	West Bengal	58599	10901	69500	17	50	67
	Total	**724627**	**198542**	**898169**	**592**	**335**	**927**

Source: http://sfacindia.com/PDFs/Statewise-FPO-registered-in-Country30-09-2015.pdf

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