



## Agricultural Knowledge Management Mechanisms

### KEYWORDS

Agriculture, ICT, Initiation, Innovations, Knowledge, Management, System

### Prof. G. Iankumaran

Assistant Professor, Alagappa Institute of Management, Alagappa University, Karaikudi,

**ABSTRACT** *The Indian Agriculture is highly diversified in terms of its climate, soil, crops, horticultural crops, plantation crops, livestock resources, fisheries resources, water resources, etc. the diversity of its agricultural sector is both a bane and boon to the social, economic, and cultural bases of India's vast population. In agriculture, innovation can include new knowledge or technologies related to primary production, processing, and commercialization, which can positively affect the productivity, competitiveness, and livelihoods of farmers and others in rural areas. Agricultural Knowledge Management System is a platform facilitating extraction, storage, retrieval, integration, transformation, visualization, analysis, dissemination, and utilization of knowledge. This study is the outcome of the survey conducted among 55 Agricultural institutions actively engaged in imparting Agricultural Knowledge Management among the rural mass in Tamilnadu. The data have been analysed with the help of t test and multi correlation analysis and the result shows that The efforts taken and put forwarded by the stakeholders were good as per the survey result but still farmers do lack in the knowledge of depending on experiments and to develop new knowledge from journals and magazines.*

### Introduction

World agriculture has shown an outstanding capacity to adjust to changes observed in modern societies. The traditional debate on the capacity of agriculture to respond to price incentives was dominant in the post war period. Agricultural economists focused the capacity of response of production and responses of technology to price incentives. This debate has moved away to focus other relevant questions as the rural-urban equilibrium, the new governance mechanisms of agro industrial linkages, sustainability of agricultural production and impacts on stakeholders not always included in the traditional economic models to approach agriculture and development. World agriculture is changing imposing the challenge to adapt the global mechanisms to deal with growth and development. The role of institutions and organizations was not in the lenses of economists, including agriculture economists until recently. Innovations are new ideas, practices, or products that are successfully introduced into economic or social processes. Innovations can take the form of technologies, organizations, institutions, or policies and involve the extraction of economic, ecological, and social value from knowledge. The process of innovation further involves putting ideas, knowledge, and technology to work in a manner that brings about a significant improvement in performance. In agriculture, innovation can include new knowledge or technologies related to primary production, processing, and commercialization, which can positively affect the productivity, competitiveness, and livelihoods of farmers and others in rural areas.

### Scenario of Indian Agriculture

The Indian Agriculture is highly diversified in terms of its climate, soil, crops, horticultural crops, plantation crops, livestock resources, fisheries resources, water resources, etc. the diversity of its agricultural sector is both a bane and boon to the social, economic, and cultural bases of India's vast population. Moreover, the diversity among resources generates interactions among many different macro and micro factors, and is further complicated with the interdependencies that exist among these. These resources need to be evalu-

ated, monitored, and allocated optimally for balanced and sustainable development of the country. Agricultural Knowledge Management Management System is a platform facilitating extraction, storage, retrieval, integration, transformation, visualization, analysis, dissemination, and utilization of knowledge. The generation and application of agricultural knowledge is increasingly important, especially for small and marginal farmers, who need relevant information in order to improve, sustain, and diversify their farm enterprises. Agriculture can require substantial knowledge transfer to and among farmers, including information about successful farming practices, new technologies or controls of pest and disease outbreaks, and new markets. In India, information and communication technology (ICT) projects that support such information flows are rapidly growing, with many initiatives in operation today. ICTs can directly support farmers' access to timely and relevant information, as well as empower the creation and sharing of knowledge of the farming community itself. This study is the outcome of the survey conducted among 55 Agricultural institutions actively engaged in imparting Agricultural Knowledge Management among the rural mass in Tamilnadu.

### Agricultural Knowledge Management Mechanisms

Agricultural knowledge, science and technology (AKST) that helps to secure productive, remunerative and resilient livelihoods, and affordable nutritious food for all in a socially sustainable manner cannot be achieved through business as usual. Institutions are needed that can drive efforts in the face of unprecedented challenges. Institutions are rules that aim to reduce uncertainty in human interaction. The role of institutions are the rules, norms and procedures that guide how people within societies live, work and interact with each other. Innovative institutional arrangements are essential to the design and adoption of ecologically and socially sustainable agricultural systems.

Table 1 Agricultural Knowledge Management Mechanisms

Sources	Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)	95% Confidence Interval of the Difference	
						Lower	Upper
Own Research Trials	4.40	.9856	.2545	17.29	.000	3.8542	4.9458
Agriculture University / College	3.40	1.056	.2726	12.48	.000	2.8154	3.9846
Native Knowledge of Local Community	3.53	1.125	.2906	12.16	.000	2.9101	4.1566
Multi-media Information System	3.53	1.246	.3217	10.98	.000	2.8434	4.2233
Subject Experts' Ideas	3.80	1.424	.3678	10.33	.000	3.0113	4.5887
Krishi Vigyan Kendras	3.40	1.404	.3625	9.38	.000	2.6224	4.1776
Networking (Internet, Intranet and Extranet)	2.20	1.014	.2619	8.40	.000	1.6384	2.7616
International Agencies' Findings	2.80	1.320	.3409	8.21	.000	2.0689	3.5311
Ancient Literature	2.47	1.187	.3065	8.05	.000	1.8092	3.1241
Progressive Farmers' Experiments	3.13	1.598	.4125	7.60	.000	2.2486	4.0181
Research Journals / Articles	3.00	1.604	.4140	7.25	.000	2.1120	3.8880

Source: Primary Survey

Agricultural Knowledge Management initiation of the sample institutions were measured with the help of five point scale as Always, Rarely, Occasionally, Never and No Idea. As per table 1, the test of significance was calculated with the help of t test and the test reveals that though all the chosen sources are significant, the significance is high in case of Own Research Trials (17.29), Agriculture University / College (12.48), Native Knowledge of Local Community (12.16), Common Measures (10.98), Subject Experts' Ideas (10.33), Krishi Vigyan Kendras (9.38), Internet and Mass Media (8.40), International Agencies' Findings (8.21), An-

cient Literature (8.05), Progressive Farmers' Experiments (7.60) and Research Journals / Articles (7.25). With regards to the levels of knowledge initiation, 60 percent of the institution have high level of knowledge Initiation (always and rarely), 26 percent of the institution have medium level of knowledge Initiation (Occasionally) and the remaining 14 percent of the institution have low level of knowledge Initiation (never and no idea). Hence it is concluded that the efforts put forwarded by the research institutions towards knowledge Initiation is good as far as the sample institutions are concerned.

Table 2 Multi Correlation Analysis for Agricultural Knowledge Management Mechanisms

Statements	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>	X <sub>5</sub>	X <sub>6</sub>	X <sub>7</sub>	X <sub>8</sub>	X <sub>9</sub>	X <sub>10</sub>	X <sub>11</sub>	
X <sub>1</sub>	r	1	<b>.991**</b>	<b>.950*</b>	-.027	-.085	-.782	.447	.643	.531	.223	-.334
	Sig.		.001	.013	.965	.892	.118	.451	.242	.357	.718	.583
X <sub>2</sub>	r	<b>.991**</b>	1	<b>.954*</b>	-.133	-.156	-.715	.416	.627	.598	.181	-.366
	Sig.	.001		.012	.831	.802	.175	.486	.258	.287	.770	.545
X <sub>3</sub>	r	<b>.950*</b>	<b>.954*</b>	1	-.070	-.139	-.765	.613	.672	.651	.323	-.607
	Sig.	.013	.012		.911	.824	.132	.271	.214	.234	.596	.277
X <sub>4</sub>	r	-.027	-.133	-.070	1	<b>.925*</b>	-.145	.529	.495	-.080	.753	.045
	Sig.	.965	.831	.911		.024	.816	.360	.396	.899	.141	.942
X <sub>5</sub>	r	-.085	-.156	-.139	<b>.925*</b>	1	.138	.493	.589	.130	.802	.068
	Sig.	.892	.802	.824	.024		.825	.399	.296	.835	.102	.913
X <sub>6</sub>	r	-.782	-.715	-.765	-.145	.138	1	-.395	-.318	-.031	-.113	.273
	Sig.	.118	.175	.132	.816	.825		.510	.602	.960	.856	.657
X <sub>7</sub>	r	.447	.416	.613	.529	.493	-.395	1	<b>.844</b>	.653	<b>.905*</b>	-.794
	Sig.	.451	.486	.271	.360	.399	.510		.072	.232	.034	.108
X <sub>8</sub>	r	<b>.643</b>	<b>.627</b>	<b>.672</b>	.495	.589	-.318	.844	1	.787	.857	-.510
	Sig.	.242	.258	.214	.396	.296	.602	.072		.114	.064	.380
X <sub>9</sub>	r	.531	.598	.651	-.080	.130	-.031	.653	<b>.787</b>	1	.564	-.700
	Sig.	.357	.287	.234	.899	.835	.960	.232	.114		.322	.188
X <sub>10</sub>	r	.223	.181	.323	<b>.753</b>	.802	-.113	<b>.905*</b>	<b>.857</b>	.564	1	-.531
	Sig.	.718	.770	.596	.141	.102	.856	.034	.064	.322		.357
X <sub>11</sub>	r	-.334	-.366	-.607	.045	.068	.273	-.794	-.510	-.700	-.531	1
	Sig.	.583	.545	.277	.942	.913	.657	.108	.380	.188	.357	

Source: Derived

Table 2 exhibits the multi correlation analysis which shows that the variable (X<sub>1</sub>) Own Research Trials have close and positive association with (X<sub>2</sub>) Research Journals/Articles (0.99) and (X<sub>3</sub>) Subject Experts' Ideas (0.95), (X<sub>2</sub>) Research Journals/Articles have close and positive association with (X<sub>3</sub>) Subject Experts' Ideas (0.954), (X<sub>3</sub>) Subject Experts' Ideas have positive association with (X<sub>1</sub>) Own Research Trials (0.95) and (X<sub>2</sub>) Research Journals / Articles (0.954), (X<sub>4</sub>) Agri University / College have positive association with (X<sub>5</sub>) International Agencies' Findings (0.925), (X<sub>6</sub>) Native Knowledge of Local Community have positive association with (X<sub>8</sub>) Krishi Vigyan Kendras (0.844), (X<sub>9</sub>) Progressive Farmers' Experiments have positive association with (X<sub>9</sub>) Krishi Vigyan Kendras (0.787), (X<sub>10</sub>) Others have positive association with (X<sub>7</sub>) Native Knowledge of Local Community (0.905) and (X<sub>8</sub>) Krishi Vigyan Kendras (0.857). As far as the correlation analysis is concerned, the variables ancient literature and Internet and Mass Media have not yet reached and accessed in the midst the rural mass.

### Conclusion

Apart from informal sources like farmers, friends, and private input dealers, the public-sector agricultural extension has been the traditional formal channel by which farmers have gained access to information related to their farming activities. Communicating information to farmers is one of the key roles that agricultural extension is expected to fulfill. As the agriculture scenario has become more complex, farmers' access to a reliable, timely, and relevant information source has become increasingly important. Farmers require access to more varied, multisource, and context-specific information, related not only to best practices and technologies for crop production and weather but also to information about postharvest aspects, including processing, marketing, storage, and handling. The efforts taken and put forwarded by the stakeholders were good as per the survey result but still farmers do lack in the knowledge of depending on experiments and to develop new knowledge from journals and magazines. If that trend is imparted, there is a possibility of exploiting every opportunity to have a better scope in the field of agriculture through the knowledge dissemination.

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