



Empowerment of Dairy Farmers Through ICT

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A study was conducted in Union Territory of Puducherry to ascertain the knowledge gain and benefits attained by the dairy farmers through information and communication technology (ICT). About 200 dairy farmers who had been using ICT from Farmers Help Centers (FHCs) were selected as respondents. It is concluded that there is significant difference between the ICT users and Non-ICT users with respect to knowledge on breeding, feeding, management, health control and total knowledge regarding dairy farming. The available dairy information was reported to be less useful to majority of the dairy farmers; however, information on education, employment, weather and Govt. schemes through ICT were reported to be useful to large proportion of farmers. Reduction in work, time and cost saving; transparency in selecting farmers for Govt. schemes; high speed communication, timely availability of information, weather information; knowledge gain about ICT were some of the benefits perceived by the respondents through ICT. Adequate information regarding dairy farming and other enterprises need to be included so that the farmers would gain maximum benefits from the ICT.

Key words: ICT users; Non-ICT users, dairy farming.

Information and Communication Technology (ICT) as defined by the Information Technology Association of America (ITAA) is an umbrella term that includes any communication device or application, encompassing electronic communication. It includes use of radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning. ICT has the power to cut across social and geographic distance and help people find new ways of facilitating the flow of information and knowledge. Within bureaucratic organizations, it has a way of leveling hierarchies, facilitating new communication patterns and supporting activities that might not otherwise occur (Negroponte, 1995). The potential of ICT is to support the improvement of currently inadequate extension and education services and ensure farmers have access to reliable information about agricultural technologies and market (FAO, 1998).

Information and Knowledge play a key role in ensuring food security and sustainable development. ICT is one of the modern means through which information and knowledge about Agriculture and Animal Husbandry are reaching the unreached. Farmers Help Center (FHC) is one of the projects run by Union territory of Puducherry which uses ICT with internet connection for efficient administration and technology dissemination on agriculture and allied subjects. Keeping this in view, the study was conducted in Puducherry with the objective to

measure knowledge level of dairy farmers (ICT users) regarding dairy farming practices and perceived benefits acquired through ICT.

Materials and Methods

The study was conducted in Puducherry region of Union Territory of Puducherry. Among the 15 FHCs in the region, 10 FHCs were selected based on area coverage and large number of farmers coverage by FHC. 20 dairy farmers from each FHC coverage area were selected. Thus totally 200 dairy farmers who maintained at least one milch animal and had been using ICT were selected as respondents. Personal interview method was followed for data collection by using semi-structured interview schedule. For measuring knowledge of dairy farmers regarding dairy farming practices, knowledge test developed by Verma (1993) was employed with suitable modifications. Knowledge scores of the different practices as breeding, feeding, healthcare and management were calculated separately and expressed in percentage. Among 200 respondents, only 117 used ICT for getting dairy knowledge. Remaining 83 farmers approached ICT for other than dairy purposes. Z-test was applied to find out difference between ICT users and non-ICT users with respect to mean dairy knowledge. To measure the utility of information, a schedule was developed with three point continuum as very useful, useful and less useful and applied to get response. The results were expressed in frequency and percentage as very useful, useful and less useful based on perception of dairy farmers. The benefits acquired

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through ICT as perceived by dairy farmers were expressed in frequency, percentage and based on this, the perceived benefits were ranked.

Results and Discussion

Comparison of ICT Users and Non-ICT Users with respect to knowledge regarding dairy farming

The results in Table 1 reveal that mean knowledge score of ICT users were higher than the Non-ICT users in all four aspects of dairy farming, i.e., Breeding, Feeding, Management and Health care. The mean knowledge score of ICT (59.69 per cent) users was greater than that of Non-ICT users (44.85 per cent) regarding dairy farming practices. The calculated Z-values for breeding, feeding,

management, health care and total knowledge were greater than the Z-table value at 0.01 per cent level. Hence it is concluded that there is significant difference between the ICT users and Non-ICT users with respect to breeding, feeding, management, health control and total knowledge regarding dairy farming at 0.01 per cent level of significance. This might be because of the reason that dairy farmers, who used ICT for dairy information, might have acquired knowledge regarding dairy farming and refreshed their knowledge through ICT. Hence it is concluded that knowledge of ICT users for dairy aspects were higher than that of Non-ICT users due to usage of ICT. These findings are consistent with UNDP (2001).

Table 1. Comparison of ICT users and non-ICT users with respect to knowledge on dairy farming

S.No.	Technical information	Knowledge score (per cent)		
		ICT users (n=117) Mean value	Non-ICT users (n=83) Mean value	Z-calculated value
1.	Breeding	63.93	50.30	08.86**
2.	Feeding	58.71	36.98	12.65**
3.	Management	52.80	33.67	12.48**
4.	Health care	73.67	65.42	08.62**
5.	Total	59.69	44.85	14.24**

** - Significant at 0.01 level of probability

** Z - 0.01 critical value = 2.58

Perception of Dairy Farmers About Utility of Dairy Information Available Through ICT

Utility of the Information on Breeding, Feeding, Management and Health control

From Table 2, it is seen that among the two hundred respondents, only 117 respondents were aware of the availability of dairy information through ICT. Among the known respondents, about 61.50 per cent, 38.50 per cent of respondents were of the opinion that information on breeding were of less useful and useful respectively. About 65.00 per cent

Table 2. Distribution of dairy farmers based on their perception about utility of information received through ICT

Kind of Information	Very useful	Useful	Less useful
Breeding (n=117)	0	45 (38.50)	72 (61.50)
Feeding (n = 117)	0	41 (35.00)	76 (65.00)
Management (n = 117)	07 (6.00)	40 (34.20)	70 (59.80)
Health control (n = 117)	30 (25.60)	23 (19.70)	64 (54.70)
Education news (n = 111)	59 (53.20)	30 (27.00)	22 (19.80)
Employment news (n = 108)	12 (11.10)	45 (41.70)	51 (47.20)
Weather (n = 149)	17 (11.40)	80 (53.70)	52 (34.90)
Govt. Schemes (Agril, DAH & AW, DRD) (n = 200)	200 (100.0)	0	0

* figure in parenthesis denotes percentage

* DAH & AW - Department of Animal Husbandry and Animal Welfare

Z* DRD - Department of Rural Development

and 35.00 per cent of respondents expressed that information on feeding were of less useful and useful respectively. Regarding management aspect, about 59.80 per cent and 34.20 per cent of respondents opined that information on

management was of less useful and useful respectively. About 54.70 per cent and 19.70 per cent of the respondents expressed that information on health control was less useful and useful respectively. About 6.00 per cent and 25.60 per cent of dairy farmers expressed that information on management and health control was of very useful.

Among the farmers who were aware of availability of dairy information, more than half of them expressed that information to a little extent was useful in all aspects of dairy farming. This might be due to the fact that the available information was of basic and there was no information on artificial insemination programme, fodder production, etc.

Utility of Information of Education and Employment

Table 2 also reveals that among 200 respondents, only 111 and 108 respondents were aware of availability information on education and employment respectively. With respect to educational information, more than half of the respondents (53.20 per cent) expressed that educational information were of very useful followed by useful (27.00%) and less useful (19.80%). With respect to employment information, nearly half of the respondents (47.20%) expressed that employment information was of less useful followed by useful (41.70%) and very useful (11.10%). The final results and marks of State Board examinations for high school and higher secondary were being displayed through ICT. Employment opportunities in agriculture, animal husbandry, rural

Table 3. Distribution of dairy farmers based on their perceived benefits acquired through ICT (n = 200)

Benefits	Frequency	%	Rank
Transparency in Govt. schemes	195	97.5	2
Employment opportunities	76	38.0	6
Rapid communication	192	96.0	3
Reduction in work. Time and cost saving process	200	100.0	1
Timely availability of information	151	75.5	4
Knowledge gain about new ICT	88	44.05	5

departments were available through ICT. Hence this might be reason for most of dairy farmers' positive opinion towards information on education, employment through ICT.

Utility of information on weather and Government schemes

Table 2 also shows that nearly two third of respondents (149 farmers) were aware of availability of weather information through ICT. Among the known farmers, about 53.70% respondents revealed that weather information was useful followed by less useful (34.90%) and very useful (11.40%). Weather forecast is very important for agriculture, aquaculture and human livelihood itself. So majority of the respondents were of opinion that weather information through ICT was useful and considerable number of farmers had fallen under very useful category too. All of the dairy farmers (100.0 per cent) had expressed that information on Government schemes on developmental activities were very useful. Over all except few, most of the available information through ICT were less useful and only basic information were available through ICT.

Benefits Acquired Through ICT as Perceived by Dairy Farmers

It is evident from Table 3 that large number of dairy farmers attained benefits through ICT. All the farmers (100 per cent) expressed that by using ICT, they could reduce the work and save time and cost. Through the ICT, the dairy farmers could get all the information in one point. This could be the reason behind that this benefit was perceived by all the farmers.

About 97.50 per cent of dairy farmers expressed that there was transparency in Government schemes due to ICT services. This was ranked second. All the farmers could get the list of beneficiaries and eligible persons for the services. So there was no chance for malpractice in delivering the services. Further, 96.00 per cent of dairy farmers revealed that through ICT, the communication was rapid. This has been ranked third. Through ICT, weather information, market information, etc. had been passed rapidly. About three fourth of dairy farmers (75.50%) perceived that they

could get information in time through ICT. This benefits has been ranked fourth. Cyclone warning, day to day information on market prices were updated through ICT immediately. This might be the reason for the farmers to perceive this benefit.

Through training on ICT and observation, about 44 per cent of dairy farmers learned how to operate internet. This was ranked fifth. Through ICT, 38 per cent of dairy farmers could get employment news regarding opportunities in Govt. departments. This was ranked sixth among the benefits. It is clear from this table that large number of dairy farmers got considerable benefits through ICT and the ICT services yield the fruits.

Conclusion

Dairy knowledge of respondents who used ICT was comparatively higher than the Non-ICT users and mean knowledge of ICT users was higher than Non-ICT users. This was due to influence of ICT. The available dairy information was reported to be less useful to majority of the dairy farmers; however information on education, employment, weather and Govt. schemes through ICT were reported to be useful to large proportion of farmers.

Reduction in work, time and cost saving; transparency in selecting farmers for Govt. schemes; high speed communication, timely availability of information, weather information; knowledge gain about ICT were some of the benefits perceived by the respondents through ICT.

Even though farmers were educated enough and having some ICT tools, their awareness about ICT utility was low. They gained minimum benefits, because only about half of the farmers were aware of utility of ICT for various purposes. Hence awareness can be created and farmers need to be encouraged to use the ICT facilities. Adequate information regarding dairy farming and other enterprises need to be included, so that the farmers would gain maximum benefits from ICT.

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