

Rationale Behind Adoption of Agriculture Farming Systems by the Farmers

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ABSTRACT

The present investigation was carried out with an exploratory design of social research in two districts of the Vidarbha Region under rainfed agriculture i.e. Akola and Nagpur. Two Panchayat Samiti namely Akola and Barshitakli from Akola district and Kalmeshwar Panchayat Samiti of Nagpur district were selected. Six villages each were selected randomly. A sample of 60 adopters adopting different farming systems was drawn randomly. A structured pre tested interview schedule was prepared and used for data collection. Findings of the study revealed that among the farming systems, Agriculture + Dairy farming systems was adopted by majority of the respondents (60.00%), followed by 30 per cent of them adopting Agriculture + Goat farming system. Family members emerged as a motivating force for majority of the adopters (60.00 %), followed by nearly half of them (48.33%) by the extension personnel. Majority of the adopters of Agriculture + Dairy, Agriculture + Poultry, Agriculture + Goat farming and Agriculture + Forestry farming systems had moderate infrastructural as well as secondary facilities available with them. Cent per cent respondents disposed off the by products of farming system in the form of organic manure in their own field. Further findings revealed that getting additional income, getting byproduct and availability of raw material were the important rationale for adoption of the farming systems.

Keywords: Agriculture farming systems; Adoption; Rationale;

Farming system, as such, is not a new concept for our country and the farmers have been undertaking it since long without any scientific support. Indian agriculture is highly amicable to continuous changes in technological innovations. These days, like other industries, agriculture in the form of diversified farming is gaining momentum due to tremendous technological advancement in agriculture and allied fields to derive benefits from more than one source of enterprise. In our situation, having an advantage of better natural resource and endowment, maximization of returns from land is best ensured by intercropping, dairy, goat rearing, poultry keeping, forestry, fish and prawn culture, vegetable and flower enterprising a particular system.

It is the farming management strategy to achieve economic and sustained production to meet diverse requirements of farm household while preserving resource base and maintaining a high level of environmental quality. Since, farming system refers to choosing a combination of enterprises which can be

managed by the household of farmers with a view to get some additional assured income for proper work, the study is important in that context. The results of the study would be of use to the farmers, policy makers and extension personnel and Agriculture and Veterinary Scientists to know the rationale behind adoption of different farming systems by the farmers and suggest suitable measures to make improvements in technological and policy aspects so as to formulate policies of training and effecting credit to the farmers and suggest viable unit of farming systems with following objectives:

- (i) To identify the farming systems prevailing in Vidharbha
- (ii) To know the rationale behind adoption of the farming systems
- (iii) To analyse the factors influencing the adoption of farming system

METHODOLOGY

The present investigation was carried out with

exploratory design of social research in two districts of the Vidarbha Region under rainfed agriculture i.e. Akola and Nagpur. Two Panchayat Samiti namely Akola and Barshitakli from Akola district and Kalmeshwar Panchayat Samiti of Nagpur district were selected. Six villages each were selected randomly. A sample of 60 adopters adopting different farming systems was drawn randomly. A structured pre tested interview schedule was prepared and used for data collection. Data were collected by personally contacting and interviewing the respondents. By taking into consideration, the objectives of study, the items were included in the schedule and open end questions were framed to ascertain the rationale behind adoption of farming systems.

Operational definition of farming system: In the context of the present investigation, farming system refers to the diversification of farm activities by choosing a combination of enterprises that the household manage as per their resources available to achieve economic and sustained production with the intention of getting some assured farm income. Initially the farming systems were identified with the help of discussion and participatory appraisal with the key informants. The details about the farming systems and the rationale behind adoption as perceived by the adopters were tabulated, analysed with the help of frequencies, percentages, mean and standard deviation.

RESULTS AND DISCUSSION

Identification of farming systems: The data with regard to the farming systems identified have been reported in Table 1

It is seen from Table. 1 that the four farming systems namely, Agriculture + Dairy, Agriculture + Poultry, Agriculture + Goat rearing and Agriculture + Forestry were found to be prominent farming systems

adopted by the farmers in Vidarbha region under rainfed agriculture. Among the farming systems, Agriculture + Dairy farming system was adopted by majority of the respondents (60.00%), followed by 30.00 per cent of them adopting Agriculture + Goat farming system. The percentage of respondents adopting rest of the systems were found to be meager (08.33 and 1.67%, respectively). Similar findings were found in the study of Said (2012) who reported that majority of the respondents (80.00%) adopted Agriculture + Dairy Farming System, followed by 40.00 per cent of them adopting Agriculture + Goat farming system.

Table 1. Distribution of respondents according to the adoption of different farming systems (N= 60)

Particulars of farming systems	No.	%
Agriculture + Dairy farming system	36	60.00
Agriculture + Poultry farming system	05	08.33
Agriculture + Goat farming system	18	30.00
Agriculture + Forestry farming system	01	01.67

Motivation behind adoption of farming system: Motives are the driving force for an individual to participate in the activities. Efforts were made to find out the motivational factors for the adopters of the farming systems. The data obtained have been depicted in Table 2.

A glance at Table 2 revealed that cent per cent respondents adopting Poultry Farming System were motivated by the District Industrial Officer, Bank Official and Extension personnel. In the case of Agriculture + Dairy farming system, nearly three fourth of the respondents stated that their family members motivated them for adoption of the farming system, followed by over half of the respondents (55.55%) stating that their relatives and friends acted as motivating force for adoption of the farming system. Agriculture and Goat farming system, except relatives and friends, all the

Table 2. Distribution of respondents according to sources of motivation

Source of motivation	Agri. + Dairy (n=36)		Agri. + Poultry (n=5)		Agri. + Goat (n=18)		Agri. + Forestry (n=1)		Total (N=60)	
	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*
District Industrial Officials	08	22.22	05	100.00	08	44.44	00	00.00	21	35.00
Bank Official	08	22.22	05	100.00	08	44.44	00	00.00	21	35.00
Extension Personnel	15	41.67	05	100.00	08	44.44	01	100.00	29	48.33
Relatives/Friends	20	55.55	00	00.00	00	00.00	00	00.00	20	33.33
Family Members	26	72.22	0	00.00	10	55.55	0	00.00	36	60.00

*The sum of percentages is more than 100 due to multiple responses.

Table 3. Distribution of respondents according to Infrastructural and Secondary facilities available with the adopters of farming system

Particulars	Agri.+ Dairy (n=36)		Agri.+ Poultry (n=5)		Agri.+ Goat (n=18)		Agri. + Forestry (n=1)		Total (n=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Infrastructural facilities										
Low	07	19.45	01	20.00	03	16.67	00	00.00	11	18.33
Medium	26	72.22	02	40.00	12	66.66	01	100.00	41	68.33
High	03	08.33	02	40.00	03	16.67	00	00.00	08	13.34
Secondary facilities										
Low	09	25.00	01	20.00	06	33.33	00	00.00	16	26.67
Medium	19	52.78	04	80.00	08	44.44	01	100.00	32	53.33
High	08	22.22	00	00.00	00	22.23	00	00.00	12	20.00

sources motivated the respondents to the extent of 44.44 per cent each and family members to the extent of 55.55 per cent.

When overall motivation source is concerned, family members emerged as a motivating force, for majority of the adopters (60.00 %), followed by nearly half of them (48.33%) by the extension personnel. Similar findings are found in the study of *Shinde and Vaidya (2003)* who reported that majority of the adopters are motivated by their family members and extension personnel respectively.

Availability of infrastructural and secondary facilities with the adopters of farming system: For adoption of any farming system, the necessary facilities are required by the adopters of farming system. Under infrastructural facilities, space, availability with size, distance from home, human resource available, capital, loan repayment behaviour, energy availability, shed, communication facilities, water availability were considered as essential. On the basis of score obtained by an individual adopter, they were categorized into 3 categories and the data thus obtained have been furnished in Table 3. A perusal of the data in Table 3 reveal that majority of the adopters of Agriculture +

Dairy, Agriculture + Poultry, Agriculture + Goat farming and Agriculture + Forestry farming systems had moderate infrastructural as well as secondary facilities available with them. The percentage of adopters in rest of the categories was relatively less.

Possession of herd size : It is observed from Table 4, that majority of the respondents of Agriculture + Dairy farming System (38.89%) belonged to medium size herd of milch animal i.e. possessing 6-10 animals. In Agriculture + Poultry farming System, 40 per cent of the respondents each had upto 1000 birds and above 2000 birds, where as one fifth of them had the birds ranging from 1000-2000 birds . In the case of Agriculture + Goat farming System, majority of the respondents (83.33%) possessed medium size herd ranging 21-30 goats.

Disposal of main product and byproduct of the farming systems: A query was made to the respondents with regard to the disposal of main and byproduct of the farming system, the data thus obtained have been furnished in Table 5.

A perusal of the data in Table 5 reveal that cent per cent respondents each disposed off their main produce obtained from farming systems i.e. milk, birds and goats directly in the market. Whereas byproduct of

Table 4. Distribution of respondents according to the Units/Herd size possessed

Particulars	Small	Medium	Big
Agriculture + Dairy Farming System (n=36)	(Upto 5) 12 (33.33)	(6-10) 14 (38.89)	(Above 10) 10 (27.78)
Agriculture + Poultry Farming System (n=5)	(Upto 1000 birds) 2 (40.00)	(1001-2000) 1 (20.00)	Above 2000 2 (40.00)
Agriculture + Goat Farming System (n=18)	(Upto 20) 1 (5.55)	(21-30) 15 (83.33)	(Above 30) 2 (11.12)

(Figures in parenthesis indicate percentage)

Table 5. Distribution of respondents according to the disposal of Main and by product

Particulars	Agriculture + Dairy		Agriculture + Poultry		Agriculture + Goat	
	No.	%	No.	%	No.	%
Disposal of main product (Sold in the market)	36	100.0	05	100.0	18	100.0
Disposal of by product (Used as organic manure in own field)	36	100.0	05	100.0	18	100.0

Table 6. Distribution of respondents according to the rationale as perceived by them towards adoption of the farming systems.

Particulars	Agri. + Dairy (n=36)		Agri. + Poultry (n=05)		Agri. + Goat (n=18)		Agri. + Forestry (n=01)		Total (N=60)	
	No.	%*	No.	%*	No.	%*	No.	%*	No.	%*
Getting by product which is useful for own farming	36	100.00	5	100.00	18	100.00	00	00.00	59	98.33
Employment generation for others	32	88.88	03	60.00	10	55.55	01	100	46	76.67
Proper utilization of time of family members	32	88.88	03	60.00	10	55.55	00	00.00	45	75.00
Get additional income	36	100.00	05	100.00	18	100	01	100.00	60	100.00
Availability of market for the produce obtained through farming systems	32	88.88	05	100.00	10	55.55	01	100	48	80.00
Availability of raw material or inputs required for system locally	36	100.00	00	00.00	18	100.00	00	00.00	54	90.00
Availability of facilities locally required for adoption of farming system	26	72.72	02	40.00	12	66.67	00	00.00	40	66.67
Liking for the farming system adopted	21	58.33	05	100.00	18	100.00	01	100.00	45	75.00
Adopting farming system as a traditional occupation in the family	21	58.33	00	00.00	07	38.88	00	00.00	28	46.67
Get daily income from the farming system adopted	38	100.00	00	00.00	00	00.00	00	00.00	38	63.33

The sum of percentages is more than 100 due to multiple responses.

the farming systems i.e. organic manure used by them for their farms and thus enriching the fertility status of the soils of their farms has been done.

Rationale behind adoption of farming systems as perceived by the farmers: It is evident from Table 6, that cent per cent farmers adopted the three farming systems viz. Agriculture + Dairy, Agriculture + Poultry and Agriculture + Goat Farming Systems with the rationale or reasons that the byproduct i.e. dung/litter received from all these farming system is useful for application as organic manure in their farms, getting income in addition to the farming alone.

As far as Agriculture + Dairy farming system is concerned, the adopters of this system perceived that the raw material i.e. the fodder was locally available with them and through the sale of milk and its product, they did get daily income. This was followed by 88.88 per cent of farmers each perceiving that this farming could generate employment for their family members and others so that they could utilize the family member properly and for selling the produce, market was available. Nearly three fourth of the respondents stated the reasons behind adoption of the farming system that the infrastructure facilities were available with them

(72.72%), over half of the respondents perceived that there was a liking for adoption of this system and adopted as a traditional occupation of their family (58.33%).

Agriculture + Poultry Farming System, 60.00 per cent of the respondents stated that due to adoption of this farming system they could generate employment and utilize properly the time of their family members. The infrastructural facilities like shed, water, litter were available locally with 40 per cent of them and hence adopted.

As regards to the Agriculture + Goat Farming System, nearly two third of the respondents had the facility locally available with them (66.67%), followed by over half of them stating that employment generation, proper utilization of time of family members, availability of market for the produce. Adoption of this system as a traditional occupation was also the reason as stated by 38.88 per cent of the respondents.

With respect to adoption of Agriculture+ Forestry farming System, one respondent stated that this system could generate employment for others; Source of additional income, and availability of market for the produce and liking for this system were the reasons for adoption of this farming system. The present findings are in line with the findings reported by *Said (2012)* who found that majority of the respondents adopted different farming systems because they get additional income, by product, raw material, proper utilization of time of family members and get daily income from the farming system adopted.

On the whole, it was observed that getting additional

income, getting byproduct and availability of raw material were the important rationale for adoption of the farming systems.

CONCLUSION

From the findings of the study, it is concluded that the four farming systems namely, Agriculture + Dairy, Agriculture + Poultry, Agriculture + Goat rearing and Agriculture + Forestry Farming Systems were found to be the prominent farming systems under rainfed agriculture in Vidarbha region. Family members of the adopters and extension personnel proved to be the motivating force behind adoption of farming systems. Infrastructural and secondary facilities needed for adoption of farming system were moderately available with the adopters of farming systems. Cent per cent respondents disposed off the by product of farming system in the form of organic manure in their own field thereby recycling and improving the fertility status of soil leading to higher productivity and production due to adoption of these farming systems. The rationale behind adoption of the farming systems under rainfed agriculture were found to be : Getting by product useful for own farming, employment generation for the family members and others, getting additional income from the subsidiary enterprises, availability of raw material with the farmers, liking for system adopted, and getting daily income for meeting the family needs in case of Agriculture + Dairy Farming Systems.

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