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Research Article

CONSTRAINTS PERCEIVED AND SUGGESTIONS OFFERED IN THE ADOPTION OF MIXED FARMING BY FARMERS OF CENTRAL GUJARAT

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Abstract- Mixed farming system is a combination of crop production and livestock. The present study was conducted in Anand taluka of Anand district of Central Gujarat to analyze constraints perceived and suggestions offered in the adoption of mixed farming. From the selected Anand taluka, a random sample of 50 mixed farming adopter farmers was selected. The study revealed that major input-supply related constraints faced by the farmers in the adoption of mixed farming were insufficient supply of high quality inputs based on farmers demand in mixed farming, shortage of laborers that can do both crop production and animal husbandry related activities. The major technological constraints were lack of knowledge on disease prevention practices in animals, lack of knowledge about livestock/crop insurance. The administrative constraints were lack of timely technical advice on livestock and crop management practices from VLWs, delay in approval of loan and subsidy. The market related constraints were absence of support price in case of glut in the market, fluctuations in market price of products. The personal and socio-psychological constraints were lack of knowledge about optimization of crop rotation practices in mixed farming. The suggestions offered by farmers were to promote supply of quality concentrate feeds for livestock for mixed farming, timely availability of loan/subsidy, to develop model for location, farm size and herd size specific mixed farming for small, medium and big farmers.

Keywords- Constraints, Suggestions, Adoption, Mixed farming, Crop, Livestock, Farmers, Anand.

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Introduction

Agriculture is the main stay of Indian economy. In India, farmers depend on animals for their farming activities and keeping milch animals is the part of the agriculture, which is also major source of income to the small and marginal farmers. Indians were the first to achieve white revolution in the world, with that the background India ranks first in the world milk production [6]. In view of low per capita availability of land, increasing population pressure and little scope for mobilization of extra land for crop production, agriculture turned to be less dependable to provide adequate livelihood opportunities for a majority of rural population. As dairy production, enterprises require relatively less land and more labour to generate a given level of income compared to crop production, mixed farming system suits the small and marginal farmers with less land

The report of National Commission on Agriculture [5] defines mixed farming as a system of both crop and animal husbandry for efficient and effective use of land, labour and capital stock. Agricultural economists consider that a farm to be called as a mixed farm, 10%-15% of its gross income must be contributed by livestock components [7]. The integration of crop and livestock production is a factor which strongly influences the sustainability of a farm. Thus, mixed farming system combining crop production and milch animal is apparently befitting to our agrarian economy. In this context, subsidiary occupations like rearing of livestock in combination with different crops become a necessity for the farmers to make the maximum use of their limited resources and labour capacity in order to supplement their income. While, adopting mixed farming farmers faces different constraints *viz*., personal, social, technical, economical etc. Keeping this in view to enhance adoption the present investigation was carried out with the objective to assess the constraints perceived and suggestions offered by the farmers in adoption of mixed farming.

Materials and Methods

Keeping in view the objectives of the study, ex-post facto research design was applied. The present study was carried out in Anand taluka of Anand district of Central Gujarat. From the selected Anand taluka, ten villages *viz.* Adas, Boriavi, Kasor, Khambholaj, Lambhvel, Mogri, Ode, Rasnol, Sarsa and Vadod having maximum number of mixed farming adopter farmers were selected randomly. Lists of mixed farming adopter farmers were collected from VLWs or the Village Secretary of Gram Panchayat Office of respective villages. Five farmers who adopted mixed farming were selected randomly from each selected village. Thus, by multi stage sampling technique, a random sample of 50 farmers who adopted mixed farming was selected for the study. A structured interview schedule was developed in accordance with the objectives of the study and it was translated into Gujarati. The data for this study was collected through self administered interview schedule. The constraints under each of the section were rated by each and every respondent, in one of the three categories *viz.*, very important, important and not important. The frequency was calculated for each constraint and converted in to mean score to provide rank. The higher ranks indicated higher perception of the respondents for that constraint and vice-versa. The same was followed in analysing suggestions offered to overcome constraints faced by farmers in the adoption of mixed farming.

Results and Discussion

The findings of the present study as well as relevant discussion have been summarized:

Constraints perceived by the farmers in the adoption of mixed farming

Constraints in adoption of farming practices never end; however, they can be minimized. In the present study, some constraints faced by the farmers in adoption of mixed farming were studied. The data depicted in [Table-1] demonstrated that the major input-supply related constraints faced by the farmers in the adoption of mixed farming were insufficient supply of high quality inputs based on farmers demand in mixed farming (2.44 mean), shortage of labours that can do both crop and livestock related activities (2.28 mean), non availability of high yielding fodder crops for mixed farming (2.12 mean), shortage of farmyard manure in absence of appropriate herd size in mixed farming (2.08 mean) and poor adaptability of cross breed animals in mixed farming (1.76 mean).

Table-1 *Distribution of respondents according to input-supply constraints faced by them in adoption of mixed farming n=50*

No	Input-Supply Constraints	Mean Score	Rank
1	Insufficient supply of high quality inputs based on farmers demand in mixed farming.	2.44	I
2	Shortage of labours that can do both agricultural and animal husbandry related activities.	2.28	II
3	Non availability of high yielding fodder crops for mixed farming.	2.12	III
4	Shortage of farmyard manure in absence of appropriate herd size in mixed farming.	2.08	IV
5	Poor adaptability of cross bred animals in mixed farming.	1.76	V

It can be seen from the [Table-2] that the major economic constraints faced by the farmers in the adoption of mixed farming were high cost of concentrates for livestock (2.20 mean), high cost of infrastructure for mixed farming (2.04 mean), low productivity of local breeds (2.02 mean) and opportunity costs of mixed farming are higher than single-focus farming (1.96 mean).

Table-2 *Distribution of respondents according to economic constraints faced by them in adoption of mixed farming n=50*

No	Economic Constraints	Mean Score	Rank
1	High cost of concentrates for livestock.	2.20	I
2	High cost of infrastructure for mixed farming.	2.04	II
3	Low productivity of local breeds.	2.02	III
4	Opportunity costs of mixed farming are higher than single-focus farming.	1.96	IV

The data seen in the [Table-3] indicated that the major technological constraints faced by the farmers in the adoption of mixed farming were lack of knowledge on disease prevention practices in animals (2.22 mean), poor knowledge about livestock/crop insurance (2.18 mean), lack of advanced knowledge to handle both activities at a time (2.10 mean), lack of technical livestock health services (2.06 mean), difficult to control infestation of pests and diseases in mixed farming (2.06 mean), unavailability of specialized extension workers to guide on mixed farming (2.02 mean), lack of skill for efficient recycling of resources in mixed farming (2.02 mean), lack of knowledge on selection of different crops for mixed farming (1.94 mean), lack of technical knowledge about balanced food for livestock (1.92 mean), lack of knowledge on selection of fodder crops for mixed farming (1.88 mean) and lack of knowledge on location specific cropping system for mixed farming (1.84 mean)

Table-3 Distribution of respondents according to technological constraints faced by them in adoption of mixed farming *n=50*

No	Technological Constraints	Mean Score	Rank
1	Lack of knowledge on disease prevention practices in mixed farming.	2.22	I
2	Poor knowledge about livestock/crop insurance.	2.18	II
3	Lack of advanced knowledge to handle both activities at a time.	2.10	III
4	Lack of technical livestock health services.	2.06	IV
5	Infestation of pests and diseases in mixed farming.	2.06	V
6	Unavailability of specialized extension workers to guide on mixed farming.	2.02	VI
7	Lack of skill for efficient recycling of resources in mixed farming.	2.02	VII
8	Lack of knowledge on selection of different crops for mixed farming.	1.94	VIII
9	Lack of technical know-how about balanced food for livestock.	1.92	IX
10	Lack of knowledge on selection of fodder crops for mixed farming.	1.88	X
11	Lack of knowledge on location specific cropping system for mixed farming.	1.84	XI

It was noticed from [Table-4] that the administrative constraints faced by the farmers in the adoption of mixed farming were lack of timely technical advice on livestock and crop management practices from VLWs (2.30 mean), delay in sanction of loan and subsidy (2.28 mean), unavailability of A.I. centres (2.20 mean) and lack of extension worker from whom guidance on both crop and animal husbandry can be taken (2.04 mean).

Table-4 *Distribution of respondents according to administrative constraints faced by them in adoption of mixed farming n=50*

No	Administrative Constraints	Mean Score	Rank
1	Lack of timely technical advice on livestock and crop management practices from VLWs.	2.30	I
2	Delay in sanction of loan and subsidy.	2.28	II
3	Unavailability of A.I. centres.	2.20	III
4	Lack of extension worker from whom guidance on both crop and animal husbandry can be taken.	2.04	IV

From the [Table-5] the market related constraints faced by the farmers in the adoption of mixed farming were absence of support price in case of glut in the market (2.54 mean), fluctuations in market price of produces (2.36 mean), lack of timely information regarding demand and supply (2.34 mean), high transportation cost (2.30 mean), inadequate physical facilities in market (2.30 mean) and exploitation by middlemen and wholesalers (2.28 mean).

Table-5 Distribution of respondents according to market related constraints faced by them in adoption of mixed farming n=50

No	Market related Constraints	Mean Score	Rank
1	Absence of support price in case of glut in the market	2.54	I
2	Fluctuations in market price of produces.	2.36	II
3	Lack of timely information regarding demand and supply of agricultural products	2.34	II
4	High transportation cost.	2.30	IV
5	Inadequate physical facilities in market	2.30	V
6	Exploitation by middlemen and wholesalers	2.28	VI

The [Table-6] showed that the personal and socio-psychological constraints faced by the farmers in the adoption of mixed farming were lack of knowledge about optimization of crop rotation practices in mixed farming (2.32 mean), difficult to manage multiple activities simultaneously in mixed farming (2.16 mean), less

interest shown by youth of family in mixed farming (2.00 mean),less interest shown by woman members of family in mixed farming (1.90 mean) and difficult to monitor multiple activities of mixed farming (1.86 mean). These constraints were matching with [1-4] and [8,9]

Table-6 Distribution of respondents according to personal and socio-psychological constraints faced by them in adoption of mixed farming n=50

No	Personal and Socio-Psychological Constraints	Mean Score	Rank
1	Lack of knowledge about optimization of crop rotation practices in mixed farming.	2.32	I
2	Difficult to manage multiple activities simultaneously in mixed farming.	2.16	II
3	Less interest shown by youth of family in mixed farming.	2.00	II
4	Less interest shown by woman members of family in mixed farming.	1.90	IV
5	Difficult to monitor multiple activities of mixed farming.	1.86	V

Suggestions offered by the farmers to overcome the various constraints faced in adoption of mixed farming

An attempt was also made to ascertain suggestions from farmers to overcome various problems faced by them in the adoption of mixed farming. The suggestions offered by the farmers are presented in [Table-7].

Table-7 The respondents according to their suggestions to overcome constraints faced in the adoption of mixed farming n=50

No	Suggestions	Mean Score	Rank
1	Promote supply of quality concentrate feeds for livestock for mixed farming.	2.80	I
2	Timely availability of loan/subsidy.	2.78	II
3	Need to improve linkages between farmers and bank/financing agencies for credit.	2.72	III
4	Training should be provided to improve the efficiency of resources recycling in mixed farming system.	2.70	IV
5	Promote insurance policies for livestock against death and diseases.	2.68	V
6	Need to organize special training to improve practical skill on mixed farming.	2.68	VI
7	More number of VLWs from whom both crop and animal husbandry related information can be received.	2.68	VII
8	Fodder seeds/seedling should be made available at low cost.	2.66	VIII
9	Need to develop special breeds of cattle for mixed faming adopting small farmers.	2.64	IX
10	Need to develop special policy to encourage mixed farming.	2.64	X
11	Need to develop special policy to encourage woman for mixed farming.	2.64	XI
12	Provision of support in getting the required inputs and services.	2.64	XII
13	Need to test scientifically indigenous knowledge on location specific mixed farming system.	2.62	XII
14	Create awareness regarding location specific cropping system in mixed farming.	2.58	XIV
15	Need to develop model for location, farm size and herd size specific mixed farming for small, medium and big farmers.	2.58	XV
16	Need to establish regular and reliable marketing network.	2.54	XVI
17	Timely technical guidance should be provided to the farmers on various aspects of mixed farming.	2.52	XVII
18	Need to create awareness regarding new technologies to be adopted in mixed farming system.	2.50	XVIII
19	Need to arrange special training to promote small farmers for small-scale piggery, goatery and poultry rising through mixed farming system.	2.50	XIX
20	Encourage membership in milk cooperative society.	2.48	XX
21	Need to arrange special training to promote women for small-scale piggery, goatery, poultry raising through mixed farming system.	2.46	XXI
22	Promote environment friendly processing technologies for mixed farming system.	2.44	XXII

The result in the [Table-7] indicates major suggestions given by the farmers in descending order of rank were; promote supply of quality concentrate feeds for livestock for mixed farming (2.80 mean), timely availability of loan/subsidy (2.78 mean), need to improve linkages between farmers and bank/financing agencies for credit (2.72 mean), training should be provided to improve the efficiency of resources recycling in mixed farming system (2.70 mean), promote insurance policies for livestock against death and diseases (2.68 mean), need to organize special training to improve practical skill on mixed farming (2.68 mean), more number of VLWs from whom both crop and animal husbandry related information can be received (2.68 mean), fodder seeds/seedling should be made available at low cost (2.66 mean), need to develop special breeds of cattle for mixed faming adopting small farmers (2.64 mean), need to develop special policy to encourage mixed farming (2.64 mean), need to develop special policy to encourage woman for mixed farming (2.64 mean), provision of support in getting the required inputs and services (2.64 mean), need to test scientifically indigenous knowledge on location specific mixed farming system (2.62 mean), create awareness regarding location specific cropping system in mixed farming (2.58 mean), need to develop module for location, farm size and herd size specific mixed farming for small, medium and big farmers (2.58 mean), need to establish regular and reliable marketing network (2.54 mean), timely technical guidance should be provided to the farmers on various aspects of mixed farming (2.52 mean), need to create awareness regarding new technologies to be adopted in mixed farming system (2.50 mean), need to arrange special training to promote small farmers for small-scale piggery, goatery, poultry raising through mixed farming system (2.50 mean), encourage membership in milk cooperative society (2.48 mean), need to arrange special training to promote women for small-scale piggery, goatery, poultry raising through mixed farming system (2.46 mean) and promote environment friendly processing technologies for mixed farming system (2.44 mean). These suggestions were matching with [1, 2] and [9].

Conclusion

From the above study it can be concluded that the major input-supply related constraints faced by the farmers in the adoption of mixed farming were insufficient supply of high quality inputs based on farmers demand in mixed farming, shortage of labours that can do both agricultural and animal husbandry related activities, non-availability of high yielding fodder crops for mixed farming, while economic constraints faced by them in the adoption of mixed farming were high cost of concentrates for livestock, high cost of infrastructure for mixed farming and low productivity of local breeds. The major technological constraints were lack of knowledge on disease prevention practices in animals, poor knowledge about livestock/crop insurance and lack of advanced knowledge to handle both activities at a time. The administrative constraints were lack of timely technical advice on livestock and crop management practices from VLWs, delay in sanction of loan and subsidy, unavailability of A.I. centres. The market related constraints were absence of support price in case of glut in the market, fluctuations in market price of produces and lack of timely information regarding demand and supply. The personal and socio-psychological constraints were difficult to manage multiple activities simultaneously in mixed farming and less interest shown by youth of family in mixed farming. They suggested promoting supply of quality feed for livestock, timely availability of loan/subsidy/insurance facilities with improved linkages between farmers and bank/financial agencies and training should be imparted for betterment of knowledge/skill to use the resources in mixed farming system efficiently and effectively. The results of the study indicated that farmers faced difficulty in optimization of crop-livestock relationship in mixed farming. This

divulged the need to formulate ideal mixed farming system model for marginal, small, large farmers and popularize the use of resources in mixed farming system in an effective way.

Conflict of Interest: None declared

References

[1] Bhosale U.S. (2010) *Participation of rural youth in paddy farming in Anand district of Gujarat state*. (Unpublished) M.Sc. (Agri.) thesis, AAU, Anand.
[2] Darandale A.D. and Soni N.V. (2011) *Gujarat Journal of Extension Education*, 22, 8-9.
[3] Jain P.K., Jheeba S.S. and Bareth L.S. (2004) *The Allahabad Farmer,* 58 (2), 19-26.
[4] Kumar A., Verma N.S. and Bhushan B. (2004) *Indian Journal of Social Research*, 45 (1), 27-31.
[5] National Commission on Agriculture (1976) *"Mixed Farming." A report. Animal Husbandry Ministry of Agriculture and Irrigation*, *New Delhi. Part VII*, 359-381.
[6] Reddy B.P. (2010) *Asia-Pac. j. soc. sci*., 2(2), 105-125.
[7] Sastry N.S.R., Thomas C.K. and Singh R.A. (1994) *Livestock Production Management*. Kalyani Publishers, New Delhi, 642.
[8] Sujatha R.V., Eshwraprasad Y. and Srilatha Arunakumari C. (2004) *Indian Journal of Agricultural Economics*, 59(3), 650-651.
[9] Zala P.K. (2008) *Crisis management practices adopted in cotton cultivation by the farmers of Kheda district of Gujarat state*. Ph.D. (Agri.) thesis, AAU, Anand.