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Economic Viability of Important Agriculture-based Enterprises for Women in Punjab

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Abstract

The economic viability of agriculture-based enterprises for farm women has been studied along with the constraints and prospects for these enterprises in the Punjab state by selecting the districts of Amritsar and Gurdaspur. Amongst the different enterprises adopted by the women, the four have been identified as most popular, viz. dairy, bee-keeping, *papar/badi* and pickles making. The study has been conducted with a total sample of 100 women entrepreneurs for the year 2004-05. The study has revealed the age group of most of the women entrepreneurs as 36 to 65 years. The average annual household income of the women entrepreneurs has been found to vary between Rs 1.66 lakh for the dairy enterprise to Rs 2.16 lakh for the bee-keeping enterprise. The share of enterprise income in household income has been found 18.89% (the lowest) for the dairy enterprise and 72.84 per cent for the *papar/badi* enterprise. Amongst the different enterprises selected for study, *papar/badi* enterprise has been observed as the most successful/viable enterprise, followed by bee-keeping, pickles making and the dairy enterprise. Marketing, lack of capital, problems of being the women and technical deficiency have been identified as the major problems faced by the women entrepreneurs. To make these enterprises viable, there is a need of subsidy on the purchase of inputs, reduction in formalities for getting credit from the institutional sources, and financing of input costs by the formal banking institutions. To increase the profit from bee-keeping and pickles enterprises, the entrepreneurs should try to sell their products directly to the consumers.

Introduction

Most of the women in India have been engaged in the household or agricultural activities, but their work could not get the recognition in the society and they were hardly involved in any commercial activity. The Tenth

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Plan (2002-07) has made a commitment towards empowering women as the agent of socio-economic change and development. Empowerment of women in agriculture may be envisaged in terms of improvement in awareness, knowledge and skill in making effective use of local resources and taking account of the local needs and constraints.

Today when the farm experts are advocating for the diversification of agriculture, women can play a major role in augmenting the household income through adoption of activities allied to the agriculture sector. There are numerous agri-based entrepreneurial activities that could facilitate farm women in enhancing family incomes and their own socio-economic status. At the same time, it is important to understand the constraints following from their socio-economic role and should address them (Vishwanathan, 1994; Krishnaraj and Shah, 2004 and Vepa, 2005). Under this background, the present study was carried out to examine the economic viability of agriculture-based enterprises for farm women and the constraints and prospects for these trades in the Punjab state.

Methodology

This paper is part of a larger study undertaken to evaluate the viability of entrepreneurial trades for women in agriculture in Punjab completed by AERC, Ludhiana with financial support from Ministry of Agriculture, New Delhi (Kumar and Gill, 2006). Women in Punjab are actively involved in agricultural as well as non-agricultural activities/enterprises. A list of such enterprises was prepared after discussions with several organizations/agencies like Krishi Vigyan Kendras (KVKs), Department of Social Security and Women and Children Department, Department of Extension, Punjab Agricultural University, Ludhiana, etc. Amongst different agricultural enterprises, a few most popular amongst the women were dairy, bee-keeping, jam/jelly/pickles preparation, poultry, basket/mat preparation, mushroom and vermi-composting. Besides, some of the enterprises were region-specific like *papar/badi* preparation in the Amritsar region. Stitching, embroidery, soft toy making, and detergent and soap making were popular amongst the non-agricultural activities/enterprises in the state. After discussions with the concerned officials, the districts of Amritsar and Gurdaspur were selected for the present study. Four most popular activities/enterprises in these districts, viz. dairy, bee-keeping, *papar/ badi* and pickles making were selected for study. Overall, a total sample of 100 women entrepreneurs, comprising 60 from dairy, 20 from bee-keeping, 7 from *papar/badi* making and 13 from pickles preparation were selected.

The primary information on different aspects like socio-economic characteristics, viability and constraints and prospects for various

entrepreneurial trades for women in agriculture was collected through a well-structured questionnaire for the period 2004-05.

Socio-economic Profile of Women Entrepreneurs

From the profile of women entrepreneurs given in Table 1, it was revealed that a majority (57%) belonged to the age group of 36-65 years. It is this age when women can devote some time for carrying out the economic activity since the children start going to the schools. All the women entrepreneurs who had adopted *papar/badi* activity were up to the age of 35 years. It is the age when the risk-taking ability of an individual is the highest. About 9 per cent of the women entrepreneurs were widows and had to shoulder the responsibility of family alone. Besides, they had to manage the marketing of the produce themselves, which otherwise could be shared by their husbands. Most of the widow entrepreneurs had adopted dairy enterprise, as the milk was sold mainly to the co-operatives, which was not that cumbersome job. Overall, about 76 per cent of the women entrepreneurs were the spouses, and their husbands were helping in managing the production and marketing of the produce.

Dairy being the traditional enterprise, was managed by the less-educated women as compared to the other enterprises which were adopted mostly by the more-educated women. Table 1 further predicts that almost all the bee-keeping, *papar/badi* and pickles making entrepreneurs had their entrepreneurial activity as the main occupation, while the proportion was lower in the case of dairy entrepreneurs (about 88%). Agriculture and govt./private service were the main occupations for about 12 per cent of dairy entrepreneurs as these entrepreneurs earned higher income from the agriculture and service as compared to the dairy enterprise.

Income Contribution

The average annual household income of the women entrepreneurs was found to vary between Rs 1.66 lakh for dairy enterprise and Rs 2.16 lakh for the bee-keeping enterprise (Table 2). The share of enterprise income in the household income was also found to be the lowest for dairy enterprise (18.89%), while it was to the tune of 72.84 per cent for the *papar/badi* enterprise. The male members of the households were primarily involved in either cropping activity or service and female members were involved in different entrepreneurial activities. The serving male members of the household had the highest share in the total household income for the dairy entrepreneurs, followed by income from the farming and enterprise income. Enterprise income contributed only about 19 per cent to the total household

Table 1. Profile of the sample women entrepreneurs, Punjab: 2004-05

(per cent)

Categories	Entrepreneurs				Overall
	Dairy	Bee-keeping	<i>Papar/Badi</i>	Pickles	
Age group in years					
15 to 25	6.67	10.00	28.57	-	8.00
26 to 35	25.00	10.00	71.43	23.08	25.00
36 to 55	61.67	60.00	-	61.54	57.00
Above 55	6.67	20.00	-	15.38	10.00
Relation to head of family					
Self	11.67	5.00	-	7.69	9.00
Spouse	66.67	90.00	85.71	92.31	76.00
Others	21.66	5.00	14.29	-	15.00
Education					
No schooling or primary level	60.00	10.00	-	23.08	41.00
Primary to high school passed	40.00	75.00	85.71	76.92	55.00
Higher education	-	15.00	14.29	-	5.00
Main occupation					
Agriculture	8.33	-	-	-	5.00
Govt. service	1.67	-	-	-	1.00
Private service	1.67	-	-	-	1.00
Entrepreneur	88.33	100.00	100.00	100.00	93.00

Table 2. Distribution of household income of the sample women entrepreneurs, Punjab: 2004-05

(Rs/annum)

Particulars	Dairy	Bee-keeping	<i>Papar/Badi</i>	Pickles
Total male income	81421	56171	56857	63615
Total female income	2200	-	-	-
Farm income	51526	69221	-	98831
Enterprise income	31479	91064	152460	49438
Total household income	166626	216456	209317	211884
Enterprise income, %	18.89	42.07	72.84	23.33

income, which shows that dairy was the secondary source of income and subsidiary occupation mainly for the female members of the household. The bee-keeping enterprise contributed about 42 per cent to the total household income, which was the major source of income of the households. Farm income was the secondary source for bee-keeping entrepreneurs while the serving male members of the household also contributed significantly to

the household income. For *papar/badi* entrepreneurs, enterprise income was the major source of income as it contributed about 73 per cent to the total household income. The male members of the household were also involved in the services sector which contributed about 27 per cent to the total household income. Most of the pickles entrepreneurs depended heavily on the farming and services sectors for the household earnings, as the enterprise contributed only about 23 per cent to the total household income.

Profitability

It can be observed from Table 3 that the net returns per milch animal were about 50 per cent higher for buffaloes than cows. The net returns to dairy women entrepreneurs were Rs 4878 per cow and Rs 7498 per buffalo per annum. To fetch these returns, the dairy entrepreneurs had made initial investments (including investments on shed, animals, etc.) of Rs 23897 for cows and Rs 24885 for buffaloes. The total costs per milch animals per annum were higher for the buffalo-rearing (Rs 19235) than cow-rearing (Rs 16794). The expenditure on variable cost items was almost 75 per cent

Table 3. Economics of dairying per milch animal for dairywomen entrepreneurs, Punjab: 2004-05

(Rs)		
Particulars	Cow	Buffalo
1. Fixed costs (FC)		
Initial investment	23897	24885
i) Interest on fixed capital @ 11% p.a.	2628	2734
ii) Depreciation (cattle shed, animals)	1484	1852
Total fixed cost (TFC)	4113	4587
2. Variable cost (VC)		
i) Feed	2123	2979
ii) Fodder	4330	4562
iii) Straw	2095	2098
iv) Labour	3356	3816
v) Miscellaneous	774	1190
Total variable cost (TVC)	12680	14648
3. Total cost (TFC + TVC)	16794	19235
4. Gross returns		
i) Milk production (litres)	2247	2024
ii) Price of milk (Rs/ litres)	9.51	13.01
Total	21372	26333
FYM	300	400
Gross returns	21672	26733
5. Net returns over total cost	4878	7498

Table 4. Economics of bee-keeping with 10 colonies for bee-keeping women entrepreneurs, Punjab: 2004-05

(in Rs)	
Particulars	Amount
1. Fixed costs (FC)	
i) Interest on fixed capital @ 12% p.a.	2748
ii) Depreciation on equipment @ 10%	1442
Total fixed cost (TFC)	4190
2. Variable cost (VC)	
i) Comb foundation sheets	3200
ii) Sugar	626
iii) Sulphur	30
iv) Human labour	2790
vi) Misc. expenses	182
vii) Interest on VC at 12% for 6 months	409
Total variable cost (TVC)	7238
3. Total cost (TFC + TVC)	11428
4. Gross returns	
i) Honey production (Rs 85/kg)*	21250
ii) Beeswax production	935
iii) Additional increase in colonies	3070
Total	25255
5. Net returns over total cost	13826
6. Net returns per colony	1383

of the total annual cost of cow/buffalo-rearing. Amongst various items of variables cost, fodder had maximum cost (about one-third), followed by labour (about 26%), feed and straw. Total profits per entrepreneur shot sharply when the cost of the fodder (being available from the owned-farm) and family labour were not included (Table 8). This had made dairy enterprise popular amongst the rural households.

The bee-keeping women entrepreneurs had to incur Rs 22900 as the initial investment for an apiary of 10 colonies. Beehives (Rs 11325; ~ 50%) and bee colonies (Rs 8475; ~35%) were the important items of investment, the others being honey extractor (Rs 1920), smoker, brush, hive stand, etc. (Rs 3100). The total cost for rearing of 10 bee colonies was Rs 11428 (Table 4). In the total cost, about 37 per cent was on fixed cost which included the interest on fixed capital and depreciation on equipments, and 63 per cent was variable cost, which included the expenditure on comb foundation sheets and human labour. On an average, a bee colony provided net returns of Rs 1383. Honey production and addition of colonies were the two major sources of gross returns as their joint contribution was about 95

Table 5. Economics of the *papar/badi* women entrepreneurs, Punjab: 2004-05
(Rs/q)

Particulars	<i>Papar</i>	<i>Spicy papar</i>	<i>Badi</i>	<i>Moongi dal Badi</i>	<i>Phull Badi</i>
Fixed cost					
Interest on fixed capital @ 12% p.a.	32	32	32	32	32
Depreciation @ 5% p.a.	13	13	13	13	13
TFC	45	45	45	45	45
Variable cost					
Salt	50	50	50	50	50
Spices	700	1000	1125	1125	900
Gas/oil/electricity	350	400	350	400	300
Araroot	-	-	-	-	2500
Pulses	5000	5000	5400	5000	-
Labour	400	375	400	375	300
TVC	6500	6825	7325	6950	4050
Total cost	6545	6870	7370	6995	4095
Gross returns	7500	8000	8200	8000	4600
Net returns	955	1130	830	1005	505
Net returns per kg	9.55	11.30	8.30	10.05	5.05

per cent to the gross returns. Wax was the other byproduct of the enterprise. For the average bee-keeping entrepreneur, the profits including the imputed family labour cost were Rs 91064, while the profits accrued over the actual costs were Rs 103766 per entrepreneur (Table 8).

The costs and returns structure varied according to the type of *papar* and *badi* produced (Table 5). Amongst the *papars*, the total cost of production was higher for spicy (Rs 68.70 per kg) than simple (Rs 65.45 per kg) *papars*. On the other hand, there was a vast variation in the total cost of *badi* (Rs 73.70/ kg), *moongi dal badi* (Rs 70.00/ kg) and *phull badi* (Rs 41.00/ kg.). About 99 per cent of the total cost was on the variable cost components, such as pulses and araroot. The initial investment was only on the machinery. The average cost was Rs 65.45/kg for *papar* and Rs 73.70/ kg for *badi*, except for *phull badi* whose cost was the lowest (Rs 41.00/ kg). Similarly, the net returns were the lowest from the *phull badi* (Rs 5.00/kg), preceded by *badi* (Rs 8.30/kg) and spicy *papar* (Rs 11.30/ kg).

The average *papar/badi* woman entrepreneur was found to fetch the profits over the imputed labour cost of Rs 152460 from the enterprise, which was due to higher scale of production and demand of these products in the region (Table 7), the profits over the actual costs being Rs 196776.

Table 6. Economics of the pickles women entrepreneurs, Punjab: 2004-05

Particulars	(Rs/q)						
	Mango	Lemon	Vege- tables	<i>Lasoor</i> a	Garlic	Chilly	Mush- room
Cost							
Salt	200	200	200	200	200	200	200
Sugar	100	160	120	-	-	-	-
Spices	800	280	960	900	-	1000	1200
Oil	500	-	500	500	-	500	500
Vinegar	100	100	-	80	200	-	-
Labour	1600	1200	2000	1000	2000	1600	1400
Fruits/Veg.	800	2000	800	1000	3000	2000	5000
Total cost	4100	3940	4580	3680	5400	5300	8300
Gross returns	5000	5000	6000	4500	8000	6000	12000
Net returns	900	1060	1420	820	2600	700	3700
Net returns/ kg	9	10.60	14.20	8.20	26	7	37

The costs and returns structure for preparation of pickles varied according to the type/variety of pickle prepared. The total cost of pickles varied from Rs 36.80/kg to Rs 83.00/kg, it being the lowest for *lasoor*a pickle and the highest for mushroom pickles (Table 6). This variation was mainly due to the cost of fruits/vegetables used for the preparation of pickles. Labour was the other important item of total cost, its share varied from about 45 per cent for vegetables pickles to about 15 per cent for mushroom pickles.

The average pickles women entrepreneur was found to fetch the profits over the imputed material and labour cost of Rs 49438 from the enterprise (Table 7), the profits over the actual costs being Rs 81946.

Viability of Enterprises

Amongst the different enterprises selected for the study, *papar/badi* making was the most successful/viable enterprise for the women entrepreneurs, followed by bee-keeping, pickles making and the dairy enterprise. The *papar/badi* had a regular demand in the region and there were no problems in their marketing. But the enterprise was concentrated locally around the Amritsar city and was adopted by a few entrepreneurs only. Bee-keeping was the other promising enterprise in the region for the women entrepreneurs, who could look after the children and household activity along with making profits from the enterprise. The bee-hives were required to be opened after a gap of one week when the flora and fauna were available and at fortnight interval when the bees were to be fed artificially. But on increasing the scale of production, the women

Table 7. Annual production, costs and profits associated with different enterprises for women entrepreneurs, Punjab: 2004-05

Particulars	Dairy	Bee-keeping	<i>Papar/Badi</i>	Pickles
1. Average scale of production (kg)	9568	1600	19500	2690
2. Total costs involved (Rs)				
i) Total cost actual (A)	43694	57866	1063580	1063580
ii) Total cost imputed material and labour (B)	85675	-	-	1107896
iii) Total cost of actual material and imputed labour (C)	58259	70568	1107896	1091278
iv) Total cost without resource overhead (D)	66827	57370	1091278	-
3. Gross returns (Rs) (E)	105918	161632	1260356	1151552
4. Total profits gained (Rs)				
i) Total profits imputed output actual cost (E-A)	62224	103766	196776	81946
ii) Total profits imputed output imputed material labour cost (E-B)	20243	-	-	49438
iii) Total profits imputed output imputed labour cost (E-C)	47659	91064	152460	60274
iv) Total profits imputed output resource overhead cost (E-D)	39091	104262	169078	-

Notes: A = Total cost excluding the cost of home/owned farm produced material and family labour.

B = Total cost including the cost of home/owned farm produced material and family labour valued at market price.

C = Total cost including the cost of home/owned farm produced material and excluding the cost of family labour.

D = Total cost excluding the fixed cost.

entrepreneurs were facing problems in the marketing of honey. Women operating at lower scale were largely selling the honey directly to the consumers at good prices, but the women operating at higher scale had to sell a large proportion of honey to the local traders at relatively lower prices. Though pickles preparation was another promising enterprise for women in the region, there were problems in their marketing due to limited demand. Some of the women entrepreneurs, who themselves were local retailers, were able to produce pickles on a large scale and earned good profits. The women fetched the lowest returns from the dairy entrepreneurs, mainly due to low scale of animal-rearing. There was no problem in the marketing of milk in the region, as the women were the regular members of the co-

Table 8. Problems faced by women entrepreneurs, Punjab: 2004-05
(% multiple response)

Particulars	Dairy	Bee-keeping	<i>Papar/Badi</i>	Pickles	Overall
Lack of capital	25.00	25.00	28.57	7.69	23.00
Unfavourable market	6.67	65.00	42.86	100.00	33.00
Technical deficiency	8.33	20.00	28.57	30.77	15.00
Packaging problem	-	10.00	-	23.08	5.00
Marketing problem	81.67	75.00	-	69.23	73.00
Raw material problem	8.33	25.00	-	15.38	12.00
Labour problem	10.00	10.00	42.86	7.69	12.00
Transport problem	3.33	5.00	-	7.69	4.00
Power or water	-	-	71.43	-	5.00
Safety problem	-	15.00	-	-	3.00
Problems as woman	6.67	30.00	57.14	15.38	16.00
Farm work	10.00	10.00	-	15.38	10.00

operative, but they preferred to operate on a lower scale. But it was the most popular enterprise adopted by women in the region.

Problems Faced by Women Entrepreneurs

Marketing, lack of capital, problems of being the women and technical deficiency were the major problems faced by the sample women entrepreneurs (Table 8). Most of the bee-keeping and pickles entrepreneurs had the problems of marketing due to low demand of these products in the region. The large scale production of these products had the problem of their dispersal at remunerative prices in the market. There being adequate demand of milk and *papar/badi* in the region, the entrepreneurs had not to face the problem of lower demand in the market, but the dairy entrepreneurs were apprehensive about the declining income from the enterprise mainly due to increasing cost of milk production and almost stagnant milk prices in the region. Lack of capital was another important problem confronted by about 23 per cent of the entrepreneurs. Bee-keeping and *papar/badi* making were the capital-intensive enterprises and needed huge investments. The women entrepreneurs had to depend upon the local traders/money lenders for the capital investment.

Most of the women entrepreneurs had gained expertise in different operations by learning from the family members but still about 15 per cent of them felt the need of training on different aspects of the enterprise, and that too at their door steps or within the district.

Table 9. Prospects of various enterprises as revealed by women entrepreneurs, Punjab: 2004-05

Particulars	(% multiple response)			
	Dairy	Bee-keeping	<i>Papar/Badi</i>	Pickles
Planning to continue in the same way	10.00	—	85.71	38.46
Planning to expand same enterprise	70.00	35.00	14.29	23.07
Planning to add new products	-	45.00	28.57	30.77
Planning to continue if Govt support available	10.00	65.00	71.43	-
Planning to continue if finance available	13.33	50.00	57.14	-
Asking for training	11.67	30.00	—	15.38
Planning to close down	6.67	15.00	—	30.77

Prospects

Prospects of different dairy enterprises in the region were explored through the response of entrepreneurs (Table 9). Most of the *papar/badi* entrepreneurs (about 86 %) and about some of the pickles entrepreneurs (about 38%) wanted to continue their enterprises in the present form as there was a continuous demand of their products in the market and they were able to fetch remunerative returns.

Most of the bee-keeping entrepreneurs (about 80%) wanted to either expand the enterprise or add new products and nobody wanted to continue in the present form. The entrepreneurs were aware that they could increase the productivity of bee colonies through migration during the period of lesser flora and fauna in the region. This was possible through increase in bee colonies, since it was not economical to migrate less than 100 beehives to the adjoining states. But the women entrepreneurs were reluctant for this without the help of the male members of the household, as it was not possible to stay out of home for migration of bees for a long time. At the same time, the women entrepreneurs were aware that they could fetch higher prices of the honey through processing, storage and sale by any level/brand name.

More than two-thirds of the dairy women entrepreneurs were willing to expand the enterprise by addition of more milch animals to the stock. The women entrepreneurs were motivated by the increase in household income by adopting the dairy enterprise, resulting in an increase in their say in household decisions. It was strange to note that nobody was interested in adding new dairy products as they were satisfied with the present marketing

structure of milk in the region. They were getting prices according to the quality of milk and were facing hardly any problem in marketing of milk.

Felt-needs of Women Entrepreneurs

Papar/badi, bee-keeping and dairy being the capital intensive enterprises the women entrepreneurs advocated for the subsidy on the purchase of machinery, beehives, bee colonies and milch animals. They opined that formal banking institutions must finance their input costs to avoid their dependence on the non-institutional sources. Dairy, bee-keeping and *papar/badi* being the traditional enterprises in the region, the management techniques were old, learnt from one generation to the other. So there was a need of training for them to increase the profit.

Conclusions

Amongst the different enterprises selected for the women entrepreneurs for study, *papar/badi* making has been found the most successful/viable enterprise economically, followed by bee-keeping, pickles making and the dairy enterprise. Marketing, lack of capital, problems of being the women, and technical deficiency have been found the major problems of the women entrepreneurs. To make these enterprises viable, there is a need of subsidy on the purchase of *papar/badi* machine, beehives and bee colonies and milch animals. The formal banking institutions must finance their input costs and make a reduction in the formalities for providing credits. To increase the profit from bee-keeping and pickles enterprises, the entrepreneurs should try to sell the produce directly to the consumers through the sale by opening retail outlets and in the exhibitions/*melas*.

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