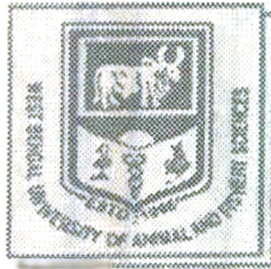


Study on Women Entrepreneurship Development through Dairy Farming



A thesis

**Submitted to the
West Bengal University of Animal & Fishery Sciences
In Partial fulfillment of the requirements
For the degree of**

Master of Veterinary Science

IN

VETERINARY & A. H. EXTENSION EDUCATION

BY

SUKANTA BISWAS

B.V. Sc. & A. H.

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2004

Dedicated

To

*My Beloved
Parents & Thamma*

West Bengal University of Animal and Fishery Sciences



DEPARTMENT OF
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This is to certify that the work recorded in the thesis entitled "Study on Women Entrepreneurship Development through Dairy Farming" submitted by Dr. Sukanta Biswas in partial fulfillment of the requirements for the Degree of Master of Veterinary Science in Veterinary & A. H. Extension Education of the West Bengal University of Animal and Fishery Sciences, is the faithful and bonafide research work carried out by the candidate himself under my personal supervision and guidance. The results of the investigation reported in the thesis have not so far been submitted for any other Degree or Diploma. The assistance and help received during the course of investigation have been duly acknowledged.

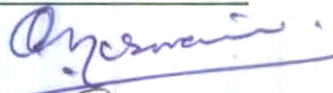

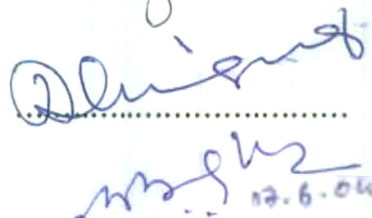

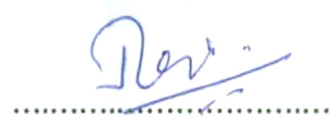

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The 10th June, 2004.

(Dr. Arunasis Goswami)
Chairman
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**APPROVAL OF EXAMINERS FOR THE AWARD
OF THE DEGREE OF
MASTER OF VETERINARY SCIENCE**

We the undersigned, having been satisfied with the performance of Sri Sukanta Biswas, in the Viva-Voce examination, for the award of the degree of Master of Veterinary Sciences in the discipline of Veterinary & Animal Husbandry Extension Education, West Bengal University of Animal & Fishery Sciences conducted today, the 17.06.04. 2004 and recommend that the thesis be accepted for the award of the degree.

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Place: Belgachia, Kolkata -37

Dated:.....10th June, 2004

Sukanta Biswas

(SUKANTA BISWAS)

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LIST OF ABBREVIATIONS

DESCRIPTIONS

A.H.	:Animal Husbandry
A.I.	: Artificial Insemination
ANNOVA	: Analysis of Variance
ARD	: Animal Resources Development
BCKV	: Bidhan Chandra Krishi Viswavidyala
BLDO	: Block Livestock Development Officer.
DPAP	: Drought Prone Area Programme.
GDP	: Gross Domestic Product.
HAU	: Haryana Agricultural University.
ICAR	: Indian Council of Agricultural Research.
ICDP	: Intensive Cattle Development Project.
ICMPUL	: Ichamoti Cooperative Milk Producers Union Limited
ICMR	: Indian council of Medical Research
IRDP	: Integrated Rural Development Programme.
IVRI	: Indian Veterinary Research Institute.
JNKVV	: Jawarlal Nehru Krishi Viswavidyala.
LDA	: Livestock Development Assistant.
M.P.	: Madhya Pradesh.
MC	: Member Cooperative
NDDB	: National Dairy Development Board.
NDRI	: National Dairy Research Institute.
NMC	: Non member Cooperative.
SE	: Standard Error.
U.P.	: Uttar Pradesh.
VLW	: Village level Worker.
WDCS	: Women Dairy Cooperative society.

CHAPTER- I

INTRODUCTION

Introduction

Livestock farming, is a century long tradition for millions of Indians. Thus the rural economy in India is traditionally based on agriculture and animal husbandry. These two are considered as two major factors of rural development programme. Livestock development is an integral part as majority (70%) of rural people depends on livestock based production system. It is becoming more relevant as the agricultural production has reached a stagnation point. The per capita availability of cultivable land is seriously dwindling. The much published 'Green Revolution', which has increased the country's grain production, benefited more to affluent farmers whereas the gain from livestock development are more equitably distributed (Jana-2000). This may help majority of rural poor for improving their socio economic condition.

World economic profiles of women shows that they represent about 50% of the population, make up 30% of the official labour force work during 60% of all working hrs, receive 10% of the world income and own less than 1% of the world poverty (Anon-1980a). In India, about 80% of the female population lives in rural areas and 86% of rural women work in agriculture and allied activities (Borah-1998). Women involvement in farming activities is a common feature in Indian rural setting. Women perform a variety of roles of which many are of greater economic significance (Bhople & Palki-1998). Livestock production and processing offer a potential sources of economic activity especially for about 200 million rural women workers, who are unemployed in India (Tripathi-1988).

Even though role of women in agricultural sector, especially as keepers of livestock; greatly improves world food security by enhancing health and livelihood of individual families (Sinha et. al.-1999). Women provide much of the unpaid family labour to agriculture (Thakar & Patel-1998) including animal husbandry. Having been highly employed in livestock rearing activities (Birader-1986 and Bhogal et.al. 1988), rural women were found to devote 90% of their time on cattle care,

making it more or less a female domain (Veena et.al. 1988). Dairy farming is considered as an extension of domestic activities like-feeding and watering of animals, bringing of fodder from field, cleaning of animals and sheds, preparation of cow dung cakes, protection of animal from diseases, milking, milk products making, marketing of milk and produce are performed and decided upon by women (Puri-1974). They play a significant role in agricultural and allied activities including livestock production (Jain & Verma-1992).

Dairying in India is a female dominated enterprise as reported by several researchers (Venkatachalam-1983; Jyotsna-1983; Fulzele & Meena-1995; Roy-1998). Though the nature and extent of women's involvement varies widely among different ecological sub zones, farming system, castes, classes and socio- economic status of families etc. (Swaminathan-1985). These factors contribute in her participation in livestock production system, both quantitatively and qualitatively. They are sometimes considered as supporting workers and have, therefore, been denied the entrepreneurial responsibility of independent decision making and handling of livestock enterprise on her own. Their contribution through labour supervision giving a helping hand and moral support to family cannot be valued and assessed in economical terms.

The livestock technologies play significant role in accelerating the rural economic growth in the developing countries like India. Women are the king pins in home and farm economy in rural areas. Though, the official statistics do not always reveal fully the actual status and role of women in various enterprises, but such data provide adequate insight for economic analysis, policy decision in planning, nutrition, security, rural poverty alleviation and rural & agrarian reforms. In dairying, 750 lakhs women are employed in large amount in large employment system as compared to 50 lakhs men. According to 1986 figures, out of 4.97 million unemployed in rural India, 1.21 million were women. In 1988-89, 7.14 million female labours were available to work in rural areas (Reddy-1991). Their increasing number and that too as agricultural labourer, warrants attention on the part of planners and

policy makers (Singh & Punia-1988). Accordingly the Govt. of India have launched various livestock developmental schemes like- ICDP (Intensive cattle Development programme), IRDP (Integrated Rural Development programme), SFDA (Small farmer's Development Agency), SLDP (State livestock development project), DPAP (Drought prone area programme), Operation Flood-I, II & III etc. for dairy development time to time, but these has not given so much emphasize for development of women. So in depth study of various livestock development schemes related to women are very much essential.

In India, total cattle and buffalo population are 204.58 million and 84.21 million respectively out of which West Bengal constitute 17.84 million cattle and 1.08 million buffalo (Statistical year book-2000-01). The total cross breed and Deshi cattle population in West Bengal are 11.18 lakh & 17.77 lakh (17th Livestock census, WB). West Bengal ranked fourth in cattle population after Madhyapradesh, Uttar Pradesh and Maharastra in the country. Milk is the second largest commodity next to rice. India ranked first in milk production in world and total milk production is 78 million ton (Basic A.H. Statistics, Govt. of India: 1998-99), whereas in West Bengal, it is 3.47 million ton (1999-2000). The monetary value of milk is about 38,000 crores annually, though the milk production is far below the national average. The ICMR recommended 280-gm/day/head milk but availability is 235 gm/day in India and 119.5 gm/day/head in West Bengal, which is far below the recommended level.

The sixth five-year (1980-85) and Seventh five year (1985-90) plan had emphasized for the first time on women development and govt. had underlined the need of technologies to meet the needs of rural poor people. The emphasize was given on production and perspective plan for women (1988-2000) which enumerated eight employment streams- agriculture, dairy farming, cattle rearing, fisheries, Khadi, handloom, handicrafts and sericulture for the creation of new employment opportunities for women. (Anon-1988).

Besides, Cooperative is an important place for rural development through which adoption of improved dairy management for increasing

milk production and sustained growth is easily possible. Cooperative farming system in rural areas has largely improved the socio-economic status of rural families. The plan documents envisages cooperation as a primary means for raising productivity, extending technological improvements and expanding employment of women through women dairy cooperative society. It is well known that dairy farming with improved animal husbandry technologies offer immense potential for socio-economic upliftment of rural women. In this context dairy cooperative may act as new horizon in terms of employment and socio-economic reforms of rural people through women. Therefore, dairy cooperatives have been now regarded as institutional mechanism, which sustain the development in the countryside in divers way (Chaturvedi & Mitra-1987). Thus in nutshell rural cooperative dairy farming through women has vast scope. Keeping this idea in mind the study has been conceptualized with the overall objectives to evaluate the entrepreneurial status of rural women through dairy farming and their contribution in dairy enterprise.

1.1.OBJECTIVE OF THE STUDY:

A. General Objective:

The general objective of the study is to find out the entrepreneurial status of women through dairy farming in relation to some Socio-economic, Socio-psychological, & Communication characteristics.

B. Specific Objectives:

1. To study the Socio-economic, Socio-psychological & communication profiles of the respondents in relation to dairy farming.
2. To enumerate various dairy farming profiles of rural women i.e. Housing, Feeding, Breeding, Health care, Production, Management & marketing practices.
3. To find out the employment status and Income generation of farmwomen through dairy farming & their role in entrepreneurship development.
4. To find out the extent of influence of women entrepreneurship development through dairy farming.

5. To study the Knowledge, Attitude, adoption and decision-making pattern of respondents towards dairy farming & their relationship with entrepreneurship development through dairy farming.

1.2. Scope of the study:

Dairy farming is an integral occupational support system on which the entire social and economic structure of the village life anchors in India. This is the largest resource in our rural economy, which has the highest potential for becoming the most effective instrument to fight against under-employment and unemployment in rural areas especially for rural women. In this perspective dairy husbandry has a lot of potential for expanding and is now a target of attention of Government, planners and policy makers. Thus conceptualisation of the women dairy farming in rural areas is imperative in order to make any headway.

1. The present study would be helpful in generating empirical information regarding general dairy farming profiles.
2. The study would provide an insight into employment status and income generation of rural women through dairy farming in order to develop entrepreneurship and suggest appropriate solution on unemployment.
3. The empirical data and the information so generated would be helpful in developing and implementing specific extension programme, especially for development of rural dairy farming through women.

1.3. Need of the Study:

In order to generate self employment and income through dairy husbandry programme among the rural farm women, it is necessary to study the entrepreneurial status of women through scientific dairy farming which are associated with dairy development.

1.4. Practical utility of the Study:

The present study has been taken up to identify the socio-economic, socio-psychological and communication characteristics of rural women related to dairy husbandry practices. To know the

entrepreneurial status as well as generation of self-employment of the farmwomen through dairy farming, the study has been conducted. It is very much essential to undertake the important and deliberate measure to uplift the rural masses from the state of poverty, unemployment and ignorance and bring them in the main stream of development. This is also necessary to bridge the gap between self-employment status and income generation considering the increasing population of the country.

1.5. Limitation of the study:

Due to limited time and resources the study was conducted in 10 cooperative societies of Gaighata Block and 20 Cooperative societies of Bagdah block of North 24 Paraganas district in West Bengal. The findings of the study were obviously based on the data obtained from the population covered under the study. Therefore, the results of the study will be directly applicable to that particular area, although results may have relevant application to other areas in the country with similar socio economic, cultural environmental and agro-climatic condition. Since the respondents generally do not keep any records of dairy activities, the respondents will be based on their recall basis. The data will be based on expressed responses, which might not be completely free from their individual biases and prejudices.

Despite these limitations genuine attempt was made to achieve the objectives of the study. Moreover, considerable care and thought was also exercised in making the study as objective scientific and systematic as possible.

CHAPTER- II

REVIEW OF LITERATURE

Review of Literature

To form a sound basis of study a comprehensive review is very much essential. 'Women Entrepreneurship Development through Dairy farming' has wide potentiality for scientific investigation. After going through several journals, magazines and literatures it was observed that some studies have been conducted in this direction but they are on very limited aspect and hence of not so much use for the extension or social workers point of view. An attempt has however, been made in this chapter to review the studies relevant to the present study.

For the sake of convenience the study of review of literature has been presented under the following heads:

- 2.1. Profiles of the Respondents.
- 2.2. Rural Dairy farming Profiles.
- 2.3. Employment Status & Income generation
- 2.4. Knowledge & Attitude in Dairy farming.
- 2.5. Decision making pattern.

2.1. PROFILES OF THE RESPONDENTS:

2.1.1. Socio-Personal & Socio-Economic:

Kar et.al. (1970) found that farmers within the age group of 41-50 years adopted maximum no. of innovations.

Singh & Sinha (1971) found that farm size was significantly associated with adoption of A.I.

Raut & Singh (1973) reported that more than 54.2% of household in village reared bovines of these 22% non-cultivators, 55% possess less than 2 hectares land and 9% land holdings of more than 4 hectares. They further reported that numbers of bovines in a house hold increases with size of land holding.

John (1974) studied the relationship of personal characteristics of cattle owners with milk production and reported that features like age and family size did not affect milk production, whereas the education of cattle owners was highly associated with productivity of milk.

Tyagi (1975) reported that the adoption of breeding, feeding and health management practices were influenced by herd size and sale of milk.

Hundal (1976) found that higher education level, larger herd size and frequent extension contact with extension agencies had strong and positive relationship with peak milk yield of milch animals, but there was no relationship of age of dairy farmers with peak milk yield of dairy animals.

Kapse (1976) however found a definite and positive correlation between age and family size with production level of dairy animals but found a nonsignificant relationship between herd sizes, educational level of cattle owners and extension contact with production of dairy animals.

Rao (1976) reported negative correlation between extent of rural women's participation in agricultural tasks and their family size and land holding.

Malathi (1979) reported that participation of rural women in agril operation varied on the basis of their age, caste, education and extension contact.

Chauhan (1979) observed that herd size was positively and significantly related with total milk production.

Mahipal (1983) found that herd size was positively and highly correlated with overall adoption of dairy innovation.

The findings of Bhangoo (1984) revealed that socio-economic status of farmwomen was highly and significantly correlated with adoption indicating the adoption score of respondents was a function of their socio-economic status score.

Saraswathi et.al. (1987) reported that total work load on women decreased with increase in the size of holding .On the other hand men's total load increases with the increases in the size of holding. The difference was to a large extent in agricultural workload and to a smaller extent in caring of cattle.

Kanwar & Guleria (1988) reported that no. of female worker per farm per hectare was found to be highest in case of scheduled caste group. Illiteracy among scheduled caste was 57% as against 40% in upper group.

Srivastava (1988) pointed out that illiteracy was the greatest handicapped depriving rural women from the benefits of modern technologies, which helped them to increase productivity, reduce drudgery and generate income.

Jamal (1989) found that socio-economic status had maximum direct effect on productivity of milk of dairy animals and role performance of farmwomen in dairy animals production activity.

Kumar, et.al. (1999) found that majority of the beneficiaries of WDCS had high level of knowledge about village dairy cooperative and its sphere of activities.

Lalitha et.al. (2000) in their study reported that data related to socio personal profiles, where farm women, who help their family had medium age group, but labour women had low in socio economic status, participation and media exposure etc.

Das et.al. (2001) studied the socio-economic condition of women in Coochbihar district of W.B. in rearing cattle besides other household activities. The relation was no way encouraging. Attempt was made to find out the influence of those factors towards milk production.

Chinnadurai et.al. (2004) pointed out that the socio-economic variables and mass media exposure showed positive and significant relationship with knowledge level of women involved in dairy farming.

Mohan & Deoghare (2004) showed that younger age and higher education were more efficient and keen to goat rearing.

2.1.2. Socio Psychological & Communication:

The study of Sekhon (1970) revealed that the mass media had significant association with gain in knowledge in dairying.

Rao (1975) found that the veterinary doctor was the most popular sources of information for scientific dairy production practices.

Rangnathan & Jayasankara (1976) concluded that the informal personal sources were generally utilized by all the dairy farmers. Among the formal personal sources of information veterinary and livestock inspector had good impact.

Sundaraswami et.al. (1978) reported that there was gain in

knowledge of dairy farmers as a result of TV viewing.

Sharma (1979) reported that there was no difference among the categories within the non-adopter groups in their willingness, awareness and principal knowledge regarding the pattern of informal sources utilization for different technologies for raising crossbreed cattle.

Vijayraghaban & Somasundaram (1979) inferred that the knowledge of marginal dairy farmers was associated with the frequency of use of personal cosmopolite and personal localities channel. They further told that the marginal dairy farmers could develop more knowledge in production to the extent of information they got through personal cosmopolite channels.

Surya Prakash (1980) conducted a study on dairy farmers and found that media combinations were more effective than the single medium in increase knowledge but the media combination did not differ among themselves.

Tyagi & Sohal (1984) reported that media exposure demonstrated its influence in increasing knowledge of dairy innovation particularly to the urban respondents. The study also revealed that extension contact followed by radio and media participation was the most effective in increasing knowledge of the respondents.

Chung (1986) suggested that the extension contact and the mass media exposure of the dairy farmers were significantly influencing awareness and knowledge.

Bhuiyan (1988) concluded that the participation in extension related activities, access to information and information technology appeared to be almost nil among rural women.

Sherwat (1989) in a study of training needs of farmers in different A.H. sectors found that 52.05%, 43.83%, 10.95%, 9.59%, and 8.21% respondents were interested in training of dairy, poultry, pig farming, beekeeping and in fish culture respectively.

Findings of Suman and Lal (1993) revealed that information sources regarding improved agril. practices and the adoption were very high in relation to the subject.

Dana et.al.(1998) reported that mass media exposure was significantly and positively correlated with adoption of poultry production practices.

Sah et.al (1999) reported the impact of scientific dairy farming training on 40 women of KVK, NDRI. Study showed that knowledge gain and retention were high and attitude level of symbolic adoption was increased significantly due to training.

The study of Goyal & Singh (2003) revealed that farmers' listening radio and TV was maximum whereas reading of newspaper and magazine was quite less. Misra ((2003) found the same findings.

Meena et.al. (2004) pointed out that modern technology play a key role in women empowerment.

Pandey et.al. (2004) found that adoption of farm technology was significant through mass media.

2.2. RURAL DAIRY FARMING PRACTICES:

(Housing, Feeding, Breeding, Health care, Management, Production & Marketing):

Juneja (1967) & Singhal (1979) emphasized on the importance of AI as a breeding practices to increases milk yield.

Raut & Amble (1969) found in their surveys on cost of milk production in Delhi, Madras and West Bengal that in general superior breeds of cattle were cheaper to maintain more productive and more profitable.

Raut & singh (1973) reported that the cost of buffalo milk production was minimum for landless farmers and maximum for small farmers.

Somjee & Somjee (1974) found that majority of farmers supplemented their agricultural income by means of sale of milk to cooperative societies in AMUL area.

Rao (1975a) observed that milk production in cooperative societies was more in the area not covered by the cooperative society.

Pandey (1977) reported that the average buffalo milk production was 1646 kg per lactation in project area. The yield was higher in project area because animals were fed green fodder. They further found that the mortality rate was also lower in project area in comparison to non-project area.

Tomar (1978) found that not more than 30% cows and 20% buffalo had been artificially inseminated in his study area. He attributed the problem to the ignorance of livestock owners about the importance of genetic potential of animals in its production.

Gite (1980) observed maximum (71.14%) knowledge level in the management practices, on the other hand, Kapse(1976), Rath(1977) and Panwar (1979) had reported very poor knowledge about management practices further Gill & Singh (1977) had reported medium level of knowledge in this area.

Dhillion (1982) observed that the milk production of our animals in general was very poor. This was partly due to poor management practice followed by rural livestock owners.

Sharma et.al. (1983) in his study concluded that production ability of the crossbreed cows in rural areas was not satisfactory. The peak yield of most of the cows was between 5-11 kgs/day. In nearly 1/3 of cases they could not conceive in time. He further found in case of 20% of cows, no milk was sold.

Bhatnagar (1985) reported that more than 66% of the total milk production in the country came from buffaloes. This high proportion of milk production was achieved by only seven recognized breeds in the country covering about 15% of the world buffalo population.

Kunzru et.al. (1987) reported that post vaccination in milk production was one of the important constraints in adoption of HS vaccination as perceived by 8.16% of the respondents.

Sagar et.al. (1988) concluded that average income from milk and milk products, total annual income, feeding of animals were positively and significantly correlated with milk production among landless, marginal, small and medium- large land holding milk producers.

Bhanja and Venkatachari (1988) reported that an average households annual milk production increased from 1081 to 1649 liters through introduction of ICDP.

Sagar et.al (1989) concluded that average income from milk and milk products, total annual income and quantitative and qualitative level

of feeding of animals were positively correlated with milk production of dairy cows.

Vijay Kumar et.al. (2000) found that out of 60 farmers, 47 used both concentrate and fodder, 13 farmers used only fodder which accounting 78.83% and 31.67% of respondents respectively.

2.3.EMPLOYMENT STATUS & INCOME GENERATION:

2.3.1. EMPLOYMENT STATUS:

Puri (1971) reported that bringing fodder from field, chaffing, preparing feed for cattle, cleaning cattle shed, making cow dung cake, preparing biota and compost making were the A.H. related tasks which were predominantly housewives centered tasks and were performed by them.

Desai and Patel (1974) concluded that modern dairies contributed substantially to economy through creation of employment in dairy enterprise.

Bhatt (1975) told that maintenance of milch animals, their production and sale of milk and milk products were solely the responsibility of housewives. A survey conducted in 1969-70 in Kaira district of Gujrat showed that women had derived considerable employment opportunities and income out of A.H. enterprises.

Dey (1977) pointed out that in rural areas, males did majority of tasks associated with breeding, fodder cultivation, health disease and marketing while women did most of the task associated with feeding and management of animals.

Verma and Pant (1978) found that introduction of dairy enterprise on the crop farms created more work opportunities to family labour even in lean period.

Rao (1981) found that dairying in the project area was a good source to increase employment levels and thereby the social and economic well being of small, marginal and medium farmers are improved.

Sethi (1982) concluded that female labour of Bhatinda district was employed in specific operation considered suitable for women like picking cotton, cutting fodder, sowing construction work etc.

Asha (1983) concluded that modernization had taken away

traditional occupation from women's hand and had made more and more women unemployed in non-agricultural traditional occupations.

Devi (1983) reported that rural women belonging to low economic category performed more work in farm management whereas women belongs to medium and high economic categories performed more work in house management.

Kumar et.al. (1985) reported that women labour was employed for 203 days (66%) in agril. and 10 days (34%) in non-agril operation. In maintenance of cattle, she devoted 12.7% (26days) of her time spent on agricultural employment.

Sharma & Mathuria (1985) emphasised that the share of female labour in total family labour was highest in fodder collection activities whereas share of male labour higher in tending farm cattle activities.

Saxena & Bhatnagar ((1985) said that cattle care was the third most time consuming activity, after home and farm activities for tribal as well as non-tribal women.

Biradar (1986) reported that dairying provided 10 hrs. of work per day per family, and dairy enterprise generated 450 man-days per annum per family in Bhadrabad village DPAP area of Kopargaon Taluka of Maharashtra.

Veena et.al. (1986) found that 60%, 90%, and 95% of women were employed in crop, dairying and home activities respectively.

Dak et.al. (1986) reported that majority of farm women play dominant role in tending farm cattle, fodder cultivation, selling livestock products, storage of products, treatment of sick animals and making farm yard manure.

Gupta et.al. (1986) found that contribution of women in livestock rearing was in areas of collection, cutting and chaffing of fodder, feeding of animals, cleaning and preparing of cow dung cakes and their storage. They also reported that cattle care was more or less female domain as women played key role in performing various cattle related tasks.

Paris (1986) reported that the involvement of women in livestock care was more evident in taking cattle for grazing and collection of forage for

animals.

Agarwal (1987) found that farm women were highly self-employed in areas of feeding, management and making livestock products. The level of employment was medium in the areas of health and hygiene while in respect of breeding activities, fodder cultivation and marketing activities of livestock products, her contribution was low.

Mehata et.al. (1987) concluded that when a crossbreed cattle was reared with the integration of technological innovation for milk production it had the potential capacity to generate employment for 853 man-days per hectare annually.

Govind & Subramanyam (1988) farm women were more employed in livestock activities than in crop husbandry practices.

Bogal et.al. (1988) found that dairying contributed significant to landless families in enhancing income and employment

Patel and Mehata (1988) found that dairy enterprise with 6 cross breed cows raised on one hectare land at NDRI, Karnal generated employment for 578 man days annually where as wheat-rice rotation generated employment for 230 man days.

Kumari et.al. (1988) observed that 80% of all important dairying operation in dairy milk production was performed by women.

Jamal (1989) reported that role performance of farm women was affected by the family, land holding, dairy herd size and caste of farm women.

Singhal and Srinivasa (1996) found that much of the information pertaining to work place of women was obtained through observation..

Batish and Oberoi (1998) told that the various farming activities were performed by women in a significant manner.

The study of Sudharani et.al. (2000) revealed that empowerment of women through dairy farming in rural area was very much significant.

Narmatha et.al. (2002) found that 53% of livestock farm women had high, 18% have moderate and 28% had low entrepreneurial behaviour.

The study of Singh (2003) revealed that highest role performance was recorded in case of preparing and processing of milk & milk products.

Bajpai et.al. (2004) found that the average employment per women worker per hectare was high (190.6 days) while for male worker (168.4 days) in crop production as a whole.

Findings of Kumar (2004) revealed that 61% women were having dominant role in farm operation and 49% have dominant role in harvesting.

2.3.2. Income Generation:

Kahlon et.al (1972) observed that growth in milk processing technology increased per head income in urban and sub-urban areas.

Thakur (1975) found that cooperatives in Gujarat helped the villagers in raising socio-economic condition by providing them technical inputs, funds for development etc.

Patel and Pandey (1976) reported that majority of milk producers in AMUL area belonged to weaker sections. They were able to raise about Rs. 600/- per milch animal more than their counterparts in the control villages.

Verma and Pant (1978) concluded that dairy enterprise was the most profitable business and had the potentialities of increasing farm income to a great extent.

Saini et.al. (1981) reported a negative correlation between dairy farm income and family size, whereas age and occupation mobility indicated a significant positive relationship. They further reported that increase in herd size by 1% increased the gross income by Rs.85/-.

Bhalla (1981) reported that small farmers invested their enhanced earning from farms in dairying and A.H. enterprises.

Rao (1981) pointed out that average no of dairy animals worked out to 2.6 per household with an investment of Rs. 1944.56 and led to average income of Rs. 15,831 per household. He further reported that increase income generated from dairying was attributed to eradication of middleman, presence of milk projects followed by high procurement price.

Singh and Paul (1983) concluded that per farm investment in crop cultivation was approximately three times more as compared to dairy enterprise. The gross return per farm was Rs. 36,028 from dairying

while it was Rs. 84,774 per crop cultivation.

Sivasdavan et.al. (1984) Inferred that modernization in dairying through the spread of various animal husbandry practices increased income of rural masses.

Srivastava and Thomas (1986) observed at NDRI, Karnal that a 6 cross breed cows unit on one hectare farm returned a net profit of Rs. 5,858 per year and Rs. 30,451 from 30 cross breed cows on six hectare of land. Birader (1986) reported that out of total income, income from dairy accounted for 67%. Maximum income was derived from dairying (84.6%) by landless households while small, medium and large farmers derived 72.25%, 62.50% and 63.15% respectively.

Mehata et.al. (1987) Observed that rearing crossbreed cattle generated profit of Rs. 48 per man day labour input and milk production generated a profit of Rs. 13 and Rs. 15 per man day labour input.

Pointed out by Patel and Mehta (1988) System analysis of milk production enterprises with 6 crossbreed cows raised on one hectare land at NDRI, Karnal revealed a profit of Rs. 15.83 per man day labour input, whereas wheat rice rotation generated a profit of Rs. 17.71 per man day labour input.

Hirekanagonadar et.al. (1988) found that nearly 56% of KDDC farmers were getting 50.75% of their family income from dairy enterprise.

The results of the investigation of Sudharani et.al. (1991) revealed that in A.H. operation role of women in income generation was significant.

Nair and Das (1998) observed that women can get full time employment in one hectare coconut based mixed farming system raising their income about three times as compare to single farming system.

Khodaskar (2001) found that women are important contributors to household income; either directly by earning cash or indirectly by doing work on farm.

The study of Tandon and Sawhney (2001) shown that large majority of women were involved in all agril. operation for food grain except in land preparation and marketing.

The findings of Latoria et.al. (2002) revealed that maximum 50%

had medium category, whereas 22.5% and 27.5% in low and high level participation respectively.

Das (2004) pointed out that most of the women involved in agril. operation are either backward or scheduled caste (57%) and only 9% belongs to high caste.

2.4. KNOWLEDGE & ATTITUDE IN DAIRY FARMING:

2.4.1. KNOWLEDGE IN DAIRY FARMING:

Govindappa (1973) concluded that knowledge level of small farmers was low for all enterprise except dairying.

Rao (1975a) reported that farmers of cooperative members had more knowledge in breeding practices than non-cooperative members.

Kakoty (1975) in his study concluded that 60% and 70% of the respondents were unaware about feeding of green fodder and concentrate mixture respectively.

Dubey and Singh (1976) found that knowledge level of 93% farmers of crossbreed were not aware of heat cycle and 71% about right time of AI in dairy animals.

Minhas (1976) reported that knowledge of dairy farmers in feeding, breeding, housing and health care was low and in management and marketing of milk it was of medium level.

Gill and Singh (1977) estimated that knowledge of dairy farmers in Ludhiana district about breeding practices was low. Rath (1977) found that 88% and 12% of farmers possessed the medium and high knowledge about breeding practices. Sohal & Tyagi (1978) studied the composite knowledge in the areas of feeding, breeding and health care of crossbreed calves owners in both rural and urban setting in ICDP, Karnal. Singh et.al. (1979) revealed that about 68% and 32% of adopter cattle owners had high and medium knowledge level. Other hand non adopter were found to posses 20% low, and 70% medium level of knowledge about AI in ICDP area of Karnal. Panwar (1979) observed that 85% respondents had medium level of knowledge about breeding practices. Mahipal (1983) in his study observed that knowledge level of feeding practices of large farmers was positively and significantly

correlated with adoption of feeding practices. Garde (1980) found low level of knowledge about breeding practices in 54% of livestock owners. Jamal (1989) concluded that knowledge level of farm women in feeding of dairy animals was positively and significantly correlated with role performance of farm women in this segment.

Sharma and Kalla (1999) revealed that knowledge score of respondents in highest and lowest possible scores that a respondent could obtained from 0-35.

Chowdhury and Singh (2000) showed that 13% farmwomen fall into low knowledge level, 78% medium and 9% in low knowledge level in agril. activities.

Singh and Godra (2002) revealed that age of respondent was found to have significant but negative correlation with knowledge regarding improved A.H. practices.

Study of Tewari et.al. (2002) revealed that there have numbers of existed wide gap between the milk production of improved and local breed.

Findings of Jain (2003) Findings revealed that both traditional as well as recommended practices were prevailing among dairy farmers in the study area but traditional knowledge were more dominated.

Chinadurai et.al. (2004) observed that socio-economic variables showed positive and significant relationship with knowledge level of women involved in dairy farming

2.4.2. ATTITUDE IN DAIRY FARMING:

Chauhan (1979), Hazarika (1983) and Sayeedi (1983) reported that attitude of farmers had no effect on adoption of improved practices. But Singh (1975), Gupta (1976) and Singh (1978) found positive and significant contribution of attitude in the adoption process. They concluded that favorable attitude was always a prerequisite, which ultimately leads farmers to adopt improved farm practices. Singh (1976) made an analysis of the adoption of AI by dairy farmers in Karnal. He found that 97% of the adopters and 50% of non-adopters had favorable attitude towards AI. Singh (1978) in his study concluded that marginal dairy farmers had relatively more favorable attitude towards dairy

farming than small and landless dairy farmers. Panwar (1979) said that attitude towards dairy farming was negatively and significantly related to the knowledge gap. Garde (1980) found that 57% and 43% of dairy farmers had favorable and unfavorable attitude towards dairy farming. Kakoty (1980) reported that majority of respondents exhibited neutral attitude towards dairy farming. Sidhu (1980) observed a highly significant and positive association between attitudes towards dairying with knowledge level of the livestock owners. Mahipal and Kharde (1986) reported that attitude of dairy farmers was positively but nonsignificantly correlated with overall adoption of dairy innovation. Hazarika (1983) reported that 60% respondents had unfavorable attitude towards dairy farming. Singh (1986) concluded that attitude towards dairying had positive and significant relationship with knowledge and overall adoption of respondents.

Mandape (1988) in a study of mixed farming in three states concluded that regardless of the size of land holding, farmers in general had favorable attitude towards dairy farming and dairy cooperatives.

Sharma (1994) established in his study that attitude towards dairy farming had positive and highly significant correlation with the adoption of milk marketing practices. Kumar et. al. (1999) told that majority of beneficiaries of WDCS had high favorable attitude and knowledge level about such VDC's and its sphere of activities. Sharma and Sharma (2001) found that majority of working women had neutral attitude towards their job, which infact is not a desirable situation. Sharma (2002) observed that different psychological variables were significantly associated with the attitude of farmers towards improved A.H. practices. Singh and Kaul (2003) showed changes in mean attitude score of livestock respondent towards AI was significant at 1% level in favorable direction.

2.5.DECISION MAKING PATTERN:

Cravon (1963) stated that farm families belonging to low and middle income group are more likely to take decisions jointly than families belonging to high income group and those who have highly

specialized farms.

Sharma and Singh (1970) found that in case of seed storage and care of animals, wives were always consulted. For rest of practices majority of women were never consulted.

Jhansi Rani (1981) found that all members of farm families took part in decision making regarding sale and purchase of livestock. The decision makers in subsidiary enterprises like maintenance of livestock were generally women, whereas, decision making in the main occupation i.e. agriculture was made by male members.

Dubey *et al.* (1982) found that rural women had varying degrees of participation in decision-making in various activities of A.H. performed by them. It was further revealed that participation of rural women in decision making was high in areas of utilization; such as milk, number of milch animals to be kept, quality of milk to be sold and kept for home consumption and type of fodder to be fed, whereas, in taking decision about the type of housing for animals, utilisation of income from milk, vaccination against contagious disease, grazing of animals and breeding practices in animals their participation was low.

Verma (1984), in a study conducted on tribal women in four villages in Kanke block of Ranchi district, found that decisions were taken by male family head alone on vaccination of animals (55%), feeding of minerals and nutrients (40%). Joint decision of husband and wife were reported to be taken in respect of feeding of balanced ration (53%), disinfections of sheds (42%) and deworming of animals (40%). However, it was reported that tribal women (32%) alone were taking decision with respect to disinfections of sheds, isolation of sick animals (20%), and deworming of animals (18%).

Seema (1986) reported that decision about purchase and sale of land; care and management of animals and children's education were taken jointly.

Agarwal (1987) stated that the farmwomen dominated the decision-making in feeding and managerial aspect of A.H. and male members of the family dominated the decision regarding breeding activities of their livestock. In the area of animal health, however, most

of the decisions were taken jointly.

Ghosh (1987) remarked that in practices related to livestock production male heads of families took decision jointly with the spouse husband or wife.

Saraswati *et al.* (1987) noticed that decision regarding the home consumption or selling of the livestock products were made by women.

Rangnekar *et al.* (1990) observed that among tribal families in Baroda district of Gujarat, the sale or purchase of animals, purchase of fodder, breeding of animals and use of money earned is decided by men.

Singh *et al.* (1990) reported that tribal women have less opportunity in decision making in agriculture and household activities. Mostly, husband dominates in decision making.

Adhiguru *et al.* (1999) reported that the women's involvement in purchase and selling of birds was very much limited.

Mamtha *et al.* (2001) observed that small and medium category farmwomen were concerned to some extent in deciding both family & farm related activities.

Kumari *et al.* (2002) The study indicate that husband play dominant role in decision making, but the involvement of women can not be overlooked.

CHAPTER- III

MATERIALS AND METHODS

Materials & Methods

A sound methodology is integral to any scientific study. The research setting process and techniques used make a great difference in the quality of the collected data and thereby severely affect the findings of the study. The chapter deals with the discussion of the study area, sampling design, parameters included, theoretical orientation of the research problem, tools of the data collection and statistical methods used according to the objectives of the study. For the sake of the convenience this chapter has been divided into following sub heads:

- 3.1. Sampling procedure
- 3.2. Parameters/Variables studied
- 3.3. Theoretical orientation
- 3.4. Data collection and analysis

3.1. Sampling Procedure:

3.1.1. Locale of the study:

The present study was carried out in North 24-Paraganas district of west Bengal. The area was purposively selected due to the following criteria:

- i) West Bengal ranked among the top five cattle producers state in India.
- ii) Ichamoti Cooperative milk producers' Union limited (ICMPUL) is situated in this area.
- iii) In this region dairy animals are owned by majority of the rural population.
- iv) Women play an important role in rural dairy farming enterprise.
- v) Since researcher stays in the state as well as district, he is well acquainted with the locality, its topography which was necessary for quick rapport building and reliable data collection.
- vi) The district is well served by roads and transportation facilities through bus, train etc. service that makes the data collection easier.

The demographic and geographic information of W.B. state is presented in the table-3.1.

Table 3.1: Demographic and other important features of West Bengal.

Particulars	
Area (Sq. Km)	: 88,752
Capital	Kolkata
Principal Language	Bengali
Livestock Population (In Million)	
Cattle population	17.84 million(4 th Position)
Buffalo population	1.08 ,,
Sheep population	1.46 ,,
Goat population	15.65 ,,
Pig population	1.09 ,,
Total poultry population	46.22 ,,
Fish production (million tones)	1.06 ,,
Annual milk production	3.47 million tonnes
Annual meat production	0.4 million tonnes
Annual egg production	2364 million tonnes
Total Population	8,02,21,171
Males	4,14,87,694
Females	3,87,33,477
Urban Population	2.25 Crores (28.03%)
Rural Population	5.77 Crores (71.97%)
Population Density (Per Sq. km)	904
Sex Ratio	934 Females per 1000 males
Literacy Rate	4.78 crores69.22%
No. of District	19

Source: Dairy year Book (2000-2001). Basic Animal Husbandry statistics (2000-2001). Statistical abstract, Bureau of applied Economics and Statistics, Government of West Bengal (2001-02).

3.1.2. Selection of the District:

The North 24 Paraganas district was selected purposively. This is obviously due to the familiarity of researcher's with the local dialect and accents are a great help in building up a rapport, quick and easy approach and access to the source of information. Moreover the district has relatively high potential for conducting research on "Women Entrepreneurship Development through Dairy farming" as in the district women has immense potential in rural dairy farming practice. Besides these, Ichamoti Cooperative Milk Producers' Union Limited is located in the district.

The District: North 24 Paraganas:

North 24 Parganas is one of the southern districts in the state of West Bengal. It is situated on the northern flank of Kolkata on eastern bank of river Hooghly. It has a total area of 4094 Sqkm covering 1599 villages in which total population is 89.30 lakh (Census of India 2001). It consists of 22 blocks, 200 gram panchayats and comprising of 78.49% literacy rate out of which 72.85% are female literate (BAES-2002, WB). This is a very important district in terms of industry, trade and commerce. It has now the second highest concentration of urban population in the state next to Kolkata. In the district 4.63% female are employed in rural area, 11.93% in urban area and combinedly 7.26%(Economic census- 1998,WB). This district has a total 24.05 lakhs livestock population in which cattle population- 12.37 lakh, Buffalo- 40.97 thousand, Sheep- 58.02 thousand, Goat- 9.97 lakh, Poultry 35.99 lakh (Livestock census report-1994, WB). The demographical and geographical information about North 24-Parganas district are presented in table-3.2.

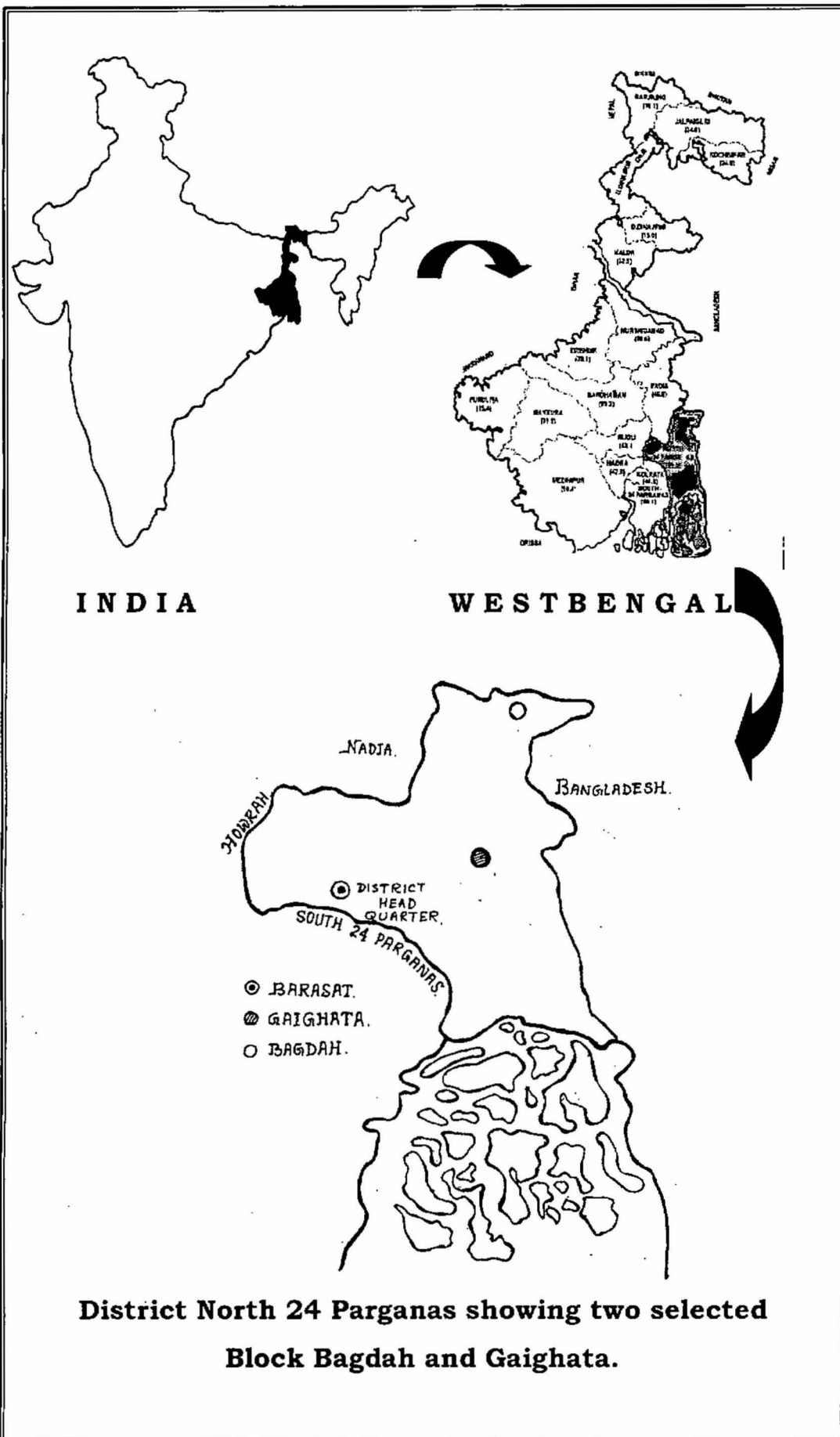
3.1.3. Selection of Block:

ICMPUL covers only 10 blocks of North 24-Parganas district. Therefore, all these blocks were ranked accordingly to the total no of cooperative societies and their average contribution of milk to ICMPUL during 2002-03. Among the four top ranking blocks, two blocks were randomly selected from those 10 blocks where women dairy cooperative societies (WDCS) are under operation and strength of cooperative societies

Table 3.2: Demographical and other important features of North 24 Parganas District

Particulars	
Area (Sq. Km.)	: 4094 Sq. Km.
Boundaries – North	: Nadia
South	: South 24 Parganas and Kolkata
West	: Howrah
East	: Bangladesh
District head quarters	: Barasat
No. of sub division	: 5
No of block	: 22
Latitude	: 23°15' (N) and 22°11'6" (S)
Longitude	89°5' (E) and 88°22' (W)
Total population	8930295*
Population density (Per Sq. Km)	2181*
Sex ratio	93* (Female per 100 males)
Literacy rate	78.49%*
Male	84.35%
Female	72.35%
Temperature	Minimum. 8°C, Maximum. 38°C
Rainfall	1514 millimeter
Livestock Population	
Cattle	: 1203323
Buffalo	: 40464
Sheep	: 57993
Goat	: 899562
Pig	: 65219
Poultry	: 3599414 (rank 3 rd in the state)
Main corps: Rice, (Aus, Aman, Boro), Wheat, jute, rape and mustard, linseeds	
Artificial Insemination Center	245
Veterinary personnel	285
State Animal Health Center	7
Block Animal Health Center	21
Additional Block Animal Health	16
Animal Develop Aid Center	: 201

Source: District Statistical Hand Book – 2001, North 24 Parganas, Bureau of applied Economics and statistics, Govt. of West Bengal. Basic A. H. statistics (2000-2001). Statistical abstract, Bureau of applied Economics and Statistics, Govt. of West Bengal (2001-02).



are more than 35. The two randomly selected blocks are Bagdah and Gaighata. A brief description of the two blocks of North 24-Parganas district covered under ICMPUL is given below.

A. Block: Bagdah

Bagdah is one of the northern blocks of North 24-Parganas district. This block runs between eastern and western border of west Bengal and Bangladesh respectively. It has a population of 219812 in which Scheduled Caste population of block is 1,05,886 and Scheduled Tribe population is 1,855. The block covers 106 villages, nine Gram Panchayets and a total area of block is 233.05 Sqkm. It has about 67.24% literacy rate, out of which female literates are 59.20% according to Directorate of Panchyat, WB and Census of India, 2001. The block falls under the alluvial and non-saline zone of the district where main crops are Paddy, Wheat, Mustered, Til, Gram etc. It has total 60980 cattle population, out of which Cross breed-2249, Deshi-50, 410, Buffalo 831, Sheep-37, Goat-62,851, Pig-1377, and Poultry-1,31,344 (Dy. Director of ARD and Parisad officer, North 24 Pgs, 2001). Major sources of livelihood are agriculture, Animal Husbandry, business and household enterprise. Besides these a small no. of people work in govt. and private sector.

B. Block: Gaighata

Gaighata is one of the North-Western blocks of North 24-Parganas district. The block has a total population of 3,00,418 in which Scheduled caste population in the block is 1,21,369 & Scheduled Tribe population is 3,249. The block has 106 villages, 13 Gram Panchayat in 243.52 Sqkm areas. It has about 75.56% literacy rate out of which female literates are 67.88%. The main crops are paddy, wheat, gram, mustered etc. The block has total 8,70,18 cattle population in which cross breed cattle-16, 555, Deshi-57,549, Buffalo-215, Sheep-40, Goat-58,384, Pig-1826, Poultry-203346 according to Dy Director of ARD and Parisad officer, North 24 Pgs.-2001. The demographical and geographical information about Bagdah and Gaighata block presented in table-3.3.

3.1.4. Selection of village Society:

Ichamoti Cooperative Milk Producers Union Limited (ICMPUL) was established in 1993 in Barasat with a capacity of handling 10,000 liters

Table 3.3: Demographic and other important features of the blocks

Particulars	Bagdah	Gaighata
Gram Panchyat	9	13
Village	106	106
Households	34965	48809
Area (Sq Km)	233.05	243.52
Density (Per sq Km)	943	1234
Rural people	190757	251129
Total Population	219812	300418
Male	112595	15470
Female	107217	154217
Total SC Population	105886	121369
Male	54855	62796
Female	51031	58573
Total ST population	8855	3249
Male	4553	1627
Female	4302	1622
Primary institution	131	164
High School	14	22
Total literary	67.24%	75.56%
Male	74.88%	82.85%
Female	59.20%	67.88%
BAHC	1	1
ABAHC	1	1
ADAC	7	12
A.I. Center	9	12
Veterinary Personnel	9	12
Livestock Population		
Cattle	60980	87018
Buffalo	831	215
Goat	62851	58384
Poultry birds	131344	203346

Source: District Statistical Handbook (2003), North 24 Parganas and Statistics Government of West Bengal.

Basic Animal Husbandry statistics (2000-2001). Statistical Abstract, Bureau of Applied Economics and Statistics, Government of West Bengal (2001-02).

milk per day. ICMPUL is covered under Operation Flood-II , hence it is administratively controlled by National Dairy Development Board (NDDB), Govt. of India. This milk cooperative collects milk by establishing milk producer's societies in various parts of North 24-Parganas district on Anand pattern. The major objectives of ICMPUL are to provide uniform marketing facility through clean milk production at village level, remunerative price to its producers and thus strengthening the farmer's economy through avoiding middlemanship. This is primarily a women dominated milk producers' union. Presently ICMPUL is working in 10 blocks covering 267 cooperative societies in which 191 are Women Dairy cooperative societies up to 2002-03. ICMPUL also provides technical inputs to its societies in terms of treatment, vaccines, AI, feeds and fodders for animals. The Bagdah and Gaighata block are the two major blocks under ICMPUL as Bagdah have 78 and Gaighata have 40 WDSCS.

From each of the selected two blocks, proportionately 20 primary cooperative societies from Bagdah Block and 10 from Gaighata block under Ichamoti Cooperative milk producers Union limited (ICMPUL) were selected. Thus total 30 village societies in which three women dairy farmers from each society were selected randomly. So, total 90 respondents in which 60 from Bagdah block and 30 from Gaighata block were selected randomly.

In addition to the above, proportionately six respondents from Bagdah block and four from Gaighata block, who are not the member of cooperative societies (ICMPUL) were selected at an appropriate distance from the member of cooperative societies in order to compare and eliminate any direct or indirect overflow of influence of Member of cooperative society. This 10 respondents have been referred as control group hereto after. Thus, a total of following 100 respondents were randomly selected for the present study.

3.1.5. Selection of Respondents:

A complete list of societies of each member cooperative village was prepared from the official record of ICMPUL. From the list so prepared, farmer's categorywise farm families having dairy animals and having adult women member were identified, which formed the target

population for the study. A sample of minimum of two to four farm families (Average three) from each category i.e. landless (LL), marginal farmer (MF), small farmer (SF) and medium-large farmer (MLF) having dairy animals were randomly selected without replacement. From each of the randomly selected families, which were the primary units for data collection, one women of at least 18 years age, was selected as the respondents for the study.

Data on Women Entrepreneurship Development through dairy farming in member cooperative system and non-member cooperative system were collected through personal interview using a specially prepared interview schedule.

Distribution of Respondents in the Selected Block:

Sl. No	Name of Blocks	Total no of Dairy cooperatives	No of Dairy cooperatives selected	No of dairy farmers selected	Percent (%)
I	Bagdah	78	20	20X3=60	25.64
II	Gaighata	40	10	10X3=30	25.00
Total:		118	30	90	25.32
Control Group: 10					
Grand Total: MC (90) + NMC (10) = 100 Respondents.					

3.2 Parameters/Variables Studied:

In order to collect information in relation to the objectives of the study, a comprehensive review was done in order to select parameters/variables to be studied. Various experts in the discipline have been consulted during finalization of variables.

A. General Profiles:

- Age, Sex, Education, Religion, Caste, Occupation, Type and Size of family, Material Possession.
- Particulars of Land and Livestock holding, Gross family income, Urban contact, Social participation.
- Extension training, Information sources utilization.

B. Dairy farming profiles:

- Feeding, Housing, Breeding, Health care, Management, Production, and Marketing.

C. Income Generation, Employment status.**D. Adoption in Dairy farming.****E. Knowledge and Attitude in Dairy farming.****F. Decision Making Pattern.**

The variables along with their respective empirical measurement are given in table 3.4.

3.3. Theoretical Orientation:

The principle objective of theoretical orientation is to describe broadly the concepts used in the study for empirical investigation.

In the present study it is intended to study the general profiles of the respondents, Dairy farming practices, like- feeding, housing, breeding, management, health care, production, and marketing, Knowledge and Attitude of respondents towards dairy farming along with their Employment status, Income generation, adoption of dairy farm technology and Constraints perceived by farm women in dairy farming were studied. The independent variables (23) have been selected on their theoretical relationship with the dependent variables viz. Employment status of rural women in dairy cooperative. The schedule of Employment status was developed as miniature form for present study. This has further scope of investigation and elaboration in near future. A few selected parameters/variables have been operationalised and the tools for measurement and categorization of further few are described as follows.

3.3.1. INDEPENDENT VARIABLES:**SOCIO-ECONOMIC:**

(X₁) Age: Age refers to no of years the respondent lived since birth at the time of interview and was rounded off to the nearest whole number. Persons younger in age are likely to be progressive.

In the present study, the number of years rounded to the nearest whole number the respondent lived since birth at the time of interview was taken as measures of age of the respondent.

Table: 3.4. VARIABLES STUDIED AND THEIR MEASUREMENTS

CODE	VARIABLES	MEASUREMENTS
INDEPENDENT VARIABLES:		
SOCIO-ECONOMIC:		
X₁	Age	Schedule developed
X₂	Occupation	Schedule developed
X₃	Caste	Schedule developed
X₄	Education of livestock owner	Parek & Trivedi (1964)
X₅	Family education status	Ray (1967)
X₆	Family type	Parek & Trivedi (1964)
X₇	Family size	Parek & Trivedi (1964)
X₈	Land holding	Parek & Trivedi (1964)
X₉	House type	Parek & Trivedi (1964)
X₁₀	Herd size	Schedule Developed
X₁₁	Material possession	Parek & Trivedi (1964)
X₁₂	Gross Income	Schedule Developed
COMMUNICATION:		
X₁₃	Information sources utilization	Schedule developed
X₁₄	Urban contact	Schedule developed
X₁₅	Social participation	Schedule developed
X₁₆	Family Culture	Schedule developed
SOCIO-PSYCHOLOGICAL:		
X₁₇	Attitude towards Dairy farming	Gupta & Sohal (1976)
X₁₈	Knowledge about AI	Goswami & Sagar (1987)
X₁₉	Knowledge about Deworming	Goswami & Sagar (1987)
X₂₀	Attitude towards Employment status	Tripathi (1991)
X₂₁	Attitude towards Income Generation.	Tripathi (1991)
X₂₂	Decision making pattern	Scheduled developed
X₂₃	Adoption index in dairy farming	Dasgupta (1968)
DEPENDENT VARIABLES:		
Y₁	Employment Status	Schedule developed

Young : 20-40 years

Adult : 41-60 years

Old : 61 & above

(X₂) Occupation: The occupation of an individual is an important indicator to determine the economic status of the person in a society. The scores are for different categories of occupation were as follows:

Labour : 1

Caste occupation : 2

Business : 3

Independent : 4

Cultivation : 5

Service : 6

(X₃) Caste: Caste of a woman is very much related with the entrepreneurial status through dairy farming practice. The scores for different categories of caste are as follows.

Scheduled Caste : -1

Lower Caste : -2

Artisan Caste : -3

Agricultural Caste : -4

Prestige caste : -5

Dominant caste : -6

(X₄) Education of Livestock Owner: To quantify the educational status of the respondents, the scoring system followed by Parek & Trivedi (1964) in their Socio-Economic Status Scale Rural was used. The scoring was as follows:

Illiterate :-0

Can read only :-1

Can read & Write :-2

Primary :-3

Middle school :-4

High school :-5

Graduate :-6

(X₅) Family Educational Status: The method followed by Ray (1967) in computing the family educational status was followed in the present one.

In this method, the educational achievement of each member of the family was noted and scored as suggested by Parek & Trivedi (1964) in the item education of the Socio Economic Status Scale-Rural. The total score of a family on education was then divided by the 'effective family size' to get the educational status of the family. The effective family size was obtained by subtracting the number of member's upto 4 years of age from the total number of members in the family.

$$\text{Index of family Educational Status} = \frac{\text{Total educational score}}{\text{Effective family size}}$$

(X₆) Family Type: In the present study, it refers to whether there is single or joint family system in the respondent's family. A family was considered as single when it consists of husband, wife and unmarried children. A joint family consisted of other blood relation also.

The scoring system developed by Parek & Trivedi (1964) in their Socio-Economic Status Scale-Rural was followed to quantify the family type of the respondents.

Nuclear family	: -1
Joint family	: -2

(X₇) Family Size: It refers to the members present in respondent's family. Generally, families consisting of one to five members are being considered as small size family, while large family consisting of more than five members. Here the scoring system followed by Parek & Trivedi (1964) in their Socio-Economic Status Scale-Rural was followed.

Upto five members	: -1
Above five members	: -2

(X₈) Land Holding: The amount of land is important economic parameters to assess the economic stand of that person in the society. The procedure for scoring was as follows:

No Land	: -0
Up to one hectare	: -1
One to two Hectares	: -2
Above two Hectares	: -3

(X₉) House Type: The possession of a house and the nature of the house are important indicator of Socio-Economic Status. These were measured as followed (Parek& Trivedi-1964):

No House	:0
Hut	:-1
Kutch House	:-2
Mixed House	:-3
Pucca house	:-4
Mansion	:-5

(X₁₀) Herd size: It refers to the total no of livestock possessed by the family. In the study the actual no. of cattle, buffalo, sheep, goat, pig possessed by the family were taken with the help of developed schedule. The live stock holding was categorized as follows:

Small	:(<5)
Medium	:(5-10)
Large	:(10-20)

(X₁₁) Material Possession: Some material possessions are indicators of modernization. The scores of the material item were as follows (Parek & Trivedi-1964):

Bullock Cart	:-1
Cycle	:-1
Radio	:-1
Chair	:-1
Improved agricultural implements	:-2

(X₁₂) Gross Income: Gross Income of the beneficiaries is directly related to the standard of living. Income may be drawn from agriculture, or from sources other than agriculture.

- a) Below Rs. 2000/- per month
- b) Rs. 2001-Rs.5000/- per month
- c) Rs.5001 & above/- per month

COMMUNICATION:

(X₁₃) Information sources utilization: It refers to the degree of individual contact with various information sources in order to acquire

information, which adds to the knowledge of the respondents regarding dairy farming.

For quantifying the channels/information sources used by respondents 6 institutionalized, 3 non-institutionalized and 4 mass media information sources relevant to dairy farm practice were listed to measure the degree of information sources utilization. Each respondent was asked to indicate, on a four-point continuum as to how often she seeks the information about dairy farming practices from each of the listed sources. The scoring procedure for the respondent was –Most often (3), Often (2), Some times (1), Never (0). The scores of a respondent were obtained by the adding the scores over different sources. The range of the scores from 0 to 24.

(X₁₄) Urban Contact: It refers to the frequency of visit of the respondents to near by town. Each respondent was asked to indicate how often she visits the town. According to the frequency of contact different scores were assigned as Never, Sometimes, Rarely, Most often and often. The total scores obtained were categorized according to the minimum and maximum scores achieved into three categories:

i) Low ii) Medium iii) High

(X₁₅) Social Participation: It refers to the voluntary sharing in the person to person and in the group-to-group relationship beyond the immediate household. It shows the degree to which the respondents were involved in formal organization as member was and/or office bearers. The score given for the member added to the score given for the office bearer to get final score (Parek & Trivedi-1964).

No social participation	: -0
Member of one organization	: -1
Member of more than 1 organization	: -2
Office bearer of any organization	: -3

(X₁₆) Family culture: It refers to the respondent's degree of adoption of cultural amenities through which overall educational, communicational and economical status of respondent's can be assessed. The scores given for this are 1,2,3 as in Rural, Peri-Urban & Urban.

Rural: -1	Peri-Urban: -2	Urban: -3
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SOCIO-PSYCHOLOGICAL:

(X₁₇) Attitude towards Dairy farming: It is proposed that an attitude is a mental----- state of readiness (Allport-1935). It is learned predisposition towards aspects of our environment. They may be positively or negatively directed toward certain aspects of dairy farming.

The attitude towards dairy farming scale of Gupta & Sohal (1976) was used to measure the attitude of the rural women towards dairy farming. The scale consisted of 8 statements. The statement was ruled in three points response categories ranging from agree to disagree.

There were 4 positive and four negative statements in the scale. The scoring for the positive statement were, agree-3; Undecided-2 and disagree-1. For the negative statement the reverse order of scoring was followed.

(X₁₈) Knowledge about AI: Knowledge is the generally understood as an intimate acquaintance of an individual with facts. English & English (1965) had defined knowledge as a body of understood information possessed by an individual or by a culture.

This was measured with help of the knowledge test about AI developed by Goswami & Sagar (1987). The test consisted of 12 items. The respondents were asked to answer the items in dichotomized form. One score was given for each correct reply. The summation of the scores for correct replies over all the items of particular respondents indicated his level of knowledge about AI.

(X₁₉) Knowledge about Deworming: This variable was measured with the help of knowledge test about deworming developed by Goswami & Sagar (1987). The component of test consisted of 8 statements. The respondents were asked to answer the items in dichotomized form like- 'Correct'- 'Incorrect', 'Yes-No' etc. One score was given for each correct answer. The summation of scores for correct answer over all the items of particular respondents indicated his level of knowledge about deworming.

(X₂₀) Attitude towards Employment Status: It was operationalised as the sum total of both positive as well as negative psychological effect of respondents on employment through scientific dairy farming.

The Attitude towards Employment scale of Tripathi (1991) was used to measure the Attitude of rural Women towards Employment through Dairy farming. The scale consisted of 8 statements. The statements were ruled in three-point response categories ranging from agree to disagree.

There were four positive and four negative statements in the scale. The scoring for the positive statement were agree-3; undecided-2 and disagree-1. For the negative statement the reverse order of the scoring was followed.

(X₂₁) Attitude towards Income Generation: The variable operationalised as the sum total of both positive as well as negative psychological effects of respondents towards income generation in a rural family through scientific dairy farming.

The Attitude towards Income Generation scale of Tripathi (1991) was used to measure the Attitude of Rural Women towards Income Generation in dairy farming. The scale consisted of 12 statements, which were rated in three-point response categories ranging from agree to disagree.

There were six positive and six negative statements in the scale. The scoring for the positive statement were agree-3; undecided-2 and disagree-1. For the negative statement the reverse order of the scoring was followed.

(X₂₂) Decision-Making Pattern: It refers to the extent of participation of rural women in decision making in dairy related activities. The respondents were given scores of 1,2,3,4 and 5 for no response, male only, collective, Joint (Husband & Wife) and female only respectively. The frequency of responses in each activity was calculated.

(X₂₃) Adoption in Dairy farming: Adoption refers to the acceptance and continued use of improved Animal Husbandry practices by rural family. In the present study the adoption was measured by the adoption index method developed by Dasgupta (1968). According to him index referred as "Years of use adopted applicable practices" not only takes the no of practices by a respondent into consideration but also the no of years she has been using each of the adopted practices. The adoption score according to this index is divided for each respondent by adding the no of years she has used each of the applicable practices. The figure so

obtained is then divided by the no of practices applicable to her farm. The overall adoption scores of respondents formed the basis for categorization and quantification of relation with other variables.

3.3.2. DEPENDENT VARIABLE.

Employment Status (Y₁): It referred to the present level of Employment of Rural Women, paid or unpaid, both at home and outside in dairy enterprise.

Employment status was quantified on the parameters of rural women's place of employment i.e. at home or outside, duration of employment in dairy farming activities, pattern of employment and the number of hrs spent/day in dairy farming activities. The summation of scores of respondents over these parameters formed the basis for the categorization of respondents as high, medium and low.

Dairy Farming Profiles: Under the dairy farming profiles various aspects of dairy farming were studied through observation as well as through schedule. In order to gain an insight into the practices and general information regarding livestock the following aspects were studied:

General Information: The general information regarding duration of dairy farming in actual years and whether the respondents were trained in dairy farming were collected.

Housing: It refers to total no of cattle are kept in how much space and in what system by the respondents in her herd. Categorization was made according to the need of the study.

Feeding: Feeding amounts to a handsome portion of the total expenditure in dairy. The types of feed supplementation frequency of feeding and amount feed were some of the important aspects studied.

Breeding: Source of cattle, AI facility, conceive rate in the herd of respondents under different system were enumerated.

Management: Since efficient management is imperative to good dairy farming a look into the different types of management made were studied.

Health Care: The health of cattle is one of the major factors responsible for good or bad production and consequent profit and loss. The types of treatment, medicine, vaccine causes of mortality and disease encountered were some of the parameters looked into under study.

Production: The milk production, selling price, cow dung used and consumption were included under this head.

Marketing: Information regarding marketing, earned money utilization, selling criteria of milk etc. were studied.

Employment & Income generation: The total man-days of employment generated for male, female and children under different activities of dairy farming were enumerated along with the income from dairy.

EXPLANATION OF TERMINOLOGIES RELATED WITH STUDY:

Rural Women: In the present study, rural women means any married, unmarried, widow, separated/ divorced female member of a rural family aged 18 years and above and living under the same roof as the respondents family.

Member Cooperative Society: It is those dairy farmers who voluntarily associate themselves with ICMPUL to create market facilities for their milk and arrange the necessary technical inputs based on cooperative principle.

Dairy Farm technology/Practices: It has been defined as a recommended operation, which has economic implication for encouraging milk producers to augment productivity of milch animal and generation of employment for rural women.

Development: It is a positive force that enhances both social and economic upliftment and benefits the whole population, when it permits the productive use of all human resources, male as well as female.

Entrepreneurship: Entrepreneur is a person, who starts or organizes a commercial enterprise or business company. Entrepreneurship is a state of a entrepreneur where he/she is encouraged to start a enterprise which is developed and managed by individual herself/himself.

3.4. Data Collection & Analysis: The process of data collection exclusively includes the ways and means of approaching and gaining access to various information sources in order to fulfil the objectives of the study. The process also involves the way of rapport building with local area, which enables them to express themselves and generate information reliably in a relaxed atmosphere. The Bureau of applied Economics & statistics section in New Secretariat building, Kolkata (Govt.

of W.B.), at district level Animal Resources Development Department, North 24 Pgs, BLDO Office of the respective block and the Deptt. of Vety. & A.H. Extension Education, WBUAFSc, Kolkata provided background information.

3.4.1. Tools & Techniques: A Structured schedule was developed for the purpose of data collection. While constructing the schedule, the objectives were taken into consideration and statements were included based on the experience. The scheduled was pre-tested in the actual field situation at a place other than the locale of the present study. Necessary modifications were incorporated accordingly and a final schedule was developed (Appendix-1).

3.4.2 Data Collection: The background information about the area of the study was obtained through secondary sources. A local village level worker of milk cooperative society accompanied the researcher in gaining easy entrance to the study area. Before the actual data collection several visit were made to build rapport. The data collection was taken up during Feb-March, 2004. All respondents were personally interviewed.

3.4.3. Statistical Analysis: The data were collected, compiled and tabulated .The data were also categorized for further clarity, realization and interpretation. In the present study, the following methods were used in analysis of data using the standard formula.

- | | |
|-------------------------|------------------------------|
| 1. Percentage analysis. | 4. Analysis of Variance |
| 2. Mean+SE | 5. T- test |
| 3. Correlation | 6. Path coefficient analysis |

Percentage analysis:

The percentage was calculated for making simple comparison. For calculating percentage, the frequency of a particular cell was divided by the total number of respondents in that particular category and multiplied by 100. Percentage was calculated up to two places after decimal point.

Mean:

Mean of a set of observation is defined as their sum, divided by the number of observation.

Simple Mean: $X = 1/n \sum X_i$; Weighted Mean: $X = 1/N \sum f_i X_i$

When $N = \sum f_i$

Analysis of Variance:

Analysis of variance is the separation of the variance ascribable to one group of causes from the variance ascribable to other groups (Weatherburn, 1961).

The analysis of variance was used to see the significance of difference of means of the dependent and independent variables.

Co-efficient of Correlation:

When two variables change together in such a way that an increase in one variable is accompanied by an increase in the other, the variables are said to be positively correlated (Panse and Sukhatme, 1967).

The intensity of correlation is measured by a co-efficient, usually indicated by the symbol of γ which is computed according to the formula:

$$\gamma = \frac{\sigma_{XY}}{\sigma_X \sigma_Y}$$

Should an increase in one variable go hand in hand with a decrease in the other, these two variables are said to be negatively correlated. If there is no relationship between two variables, they are said to be independent or un-correlated.

't' Test:

Experimenters have found that the null hypothesis is a useful tool in testing the significance of differences. In its simplest form, this hypothesis asserts that there is no true difference between two population means. Let us consider two samples with mean X_1 and X_2 . We are interested to know whether there is any actual difference between these two populations' means. In such situation 't' test is applied. In the present study the means are uncorrelated or independent. So the following formula was employed:

$$T = \frac{\bar{X} - \bar{Y}}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

X and Y = Means of two samples.

S_1^2 and S_2^2 = Sum of squares of two samples.

N_1 and N_2 = Sizes of two samples.

The calculated values were compared with the table values for 't' test from Fisher and Yates (1979) table with $(N_1 + N_2 - 2)$ degrees of freedom.

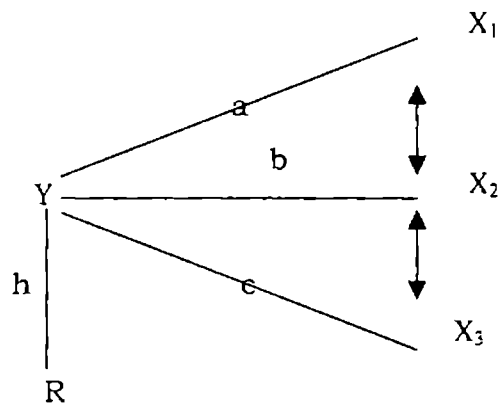
Path Analysis:

Path analysis adopting the multivariate Path Model as suggested by Land (1969) was used to isolate the direct as well as indirect effects of exogenous variables on endogenous variable. Obviously, the general principles of path analysis are more attuned to construction of unidimensional causal theories, but there are ample evidences where it has proved its efficiency in handling reciprocal relationship as well. From the epistemological and scientific logic perspective, we concur that path analysis is a better tool of analysis than simple correlation and regression models.

Correlation studies in conjunction with path coefficient analysis will give a better picture of cause and effect relationship existing between pairs of characters. The techniques of path coefficient analysis involves a method of partitionising the total correlation between the dependent variable and the independent variable into direct effect of independent variable and its indirect effect via third variable on dependent variable.

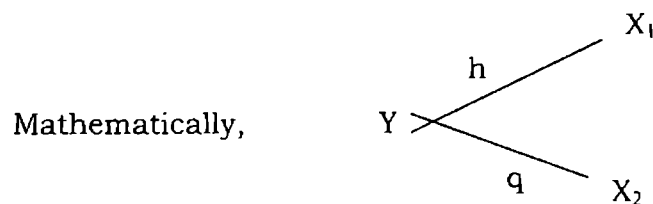
Path coefficient can be defined as the ratio of the standard deviation of the effect, i.e., if Y is the effect and X_1 is the cause, the path coefficient for the path from cause Y_1 to effect Y is σ_{x1} / σ_y .

If the cause and effect relationship is well defined, it is possible to represent the whole system of variable in the form of a diagram, known as path diagram. Let us consider that the yield 'Y' is the function (effect) of various components (causal factors) like number of years etc.



From this figure it is obvious that yield is the result of X_1 , X_2 and X_3 and some other undefined factors designated by 'R'. Further X_1 , X_2 and X_3 in turn are correlated. In the figure a, b, c and h are the path co-efficient due to respective variables.

The advantages of path diagram, is that a set of simultaneous equations can be written directly from a diagram and a solution of these questions provides information on the direct and indirect contributions of these causal factors to the effect.



$Y = X_1 + X_2$ or $\sigma_2 y = \sigma_2 x_1 + \sigma_2 x_2$, assuming X_1 and X_2 are independent.

Thus the theoretical basis of these equations may be explained as follows:
Let us consider the correlation between X_1 and Y, i.e. $\gamma(X_1; Y)$ in assuming that

$$Y = X_1 + X_2 + X_3 + R$$

And

$$Y = \overline{X_1} + \overline{X_2} + \overline{X_3} + \overline{R}$$



SCHOLAR IS INTERVIEWING IN BAGDAH BLOCK



SCHOLAR IS INTERVIEWING IN GAIGHATA BLOCK

CHAPTER- IV

RESULTS AND DISCUSSIONS

Results & Discussion

The results of the present study are discussed in this chapter after appropriate statistical analysis of data, and in relation to the specific objectives of the study. In the present investigation 'Employment status' (Y_1) was the dependent variables. Twenty-three variables (X_1, X_2, \dots, X_{23}) under three groups viz. Socio-Economic, Socio-Psychological and communication were the independent variables. The chapter also presents the dairy farming profiles of rural women, Reason for employment & unemployment and various constraints perceived in dairy farming.

PROFILES OF RESPONDENTS:

In the present context profiles of respondents included the socio personal and demographic variables viz. category, age, religion, marital status, Income source, gross income, Herd type, Herd size, Occupation, caste, education of respondents, Family educational status, family type, family size, land holding, house type, electricity, material possession, family culture, etc. Communication variables included viz. urban contact, information sources utilization, social participation, extension training and Newspaper reading etc.

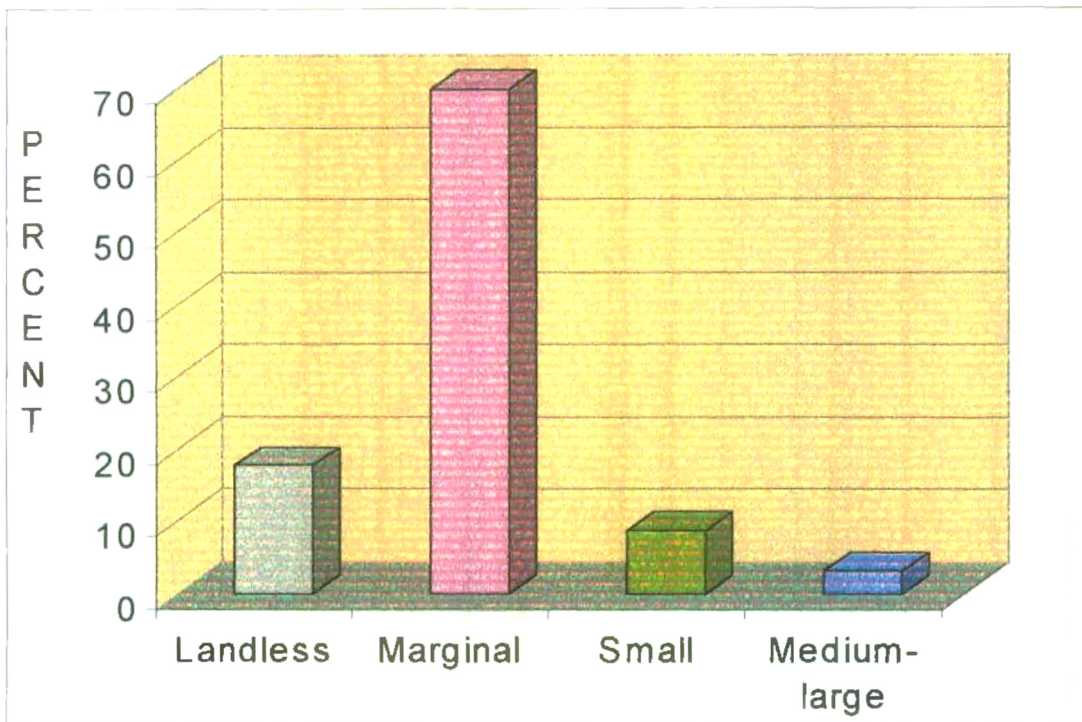
Some demographic indicators and Socio-Personal characteristics of Sample respondents (Bagdah and Gaighata block) in terms of percentage (%) distribution are being shown in table 4.1.

It is evident from table 4.1 that greater number of livestock owners belong to the marginal (70%) category and only a mere hailed from medium- large (3.33%) category (Figure-1). The perusal of table 4.1 indicates that majority of respondents (66.67%) were within the age group of 20-40 years and there was no farmer in the age group of above 60 years (Fig.-2). All the sample respondents (100%) are Hindus by religion. The cursory look at table 4.1 reveals that majority (88.89%) of the respondents are married followed by unmarried (6.67%), Widow (2.22%) and divorced (2.22%) (Fig.-3). Greater no (73.33%) of women dairy farmers depends on agriculture and A.H., whereas only few (2.22%) maintain their livelihood on agriculture, A.H. and Service. The findings of the table depicted that

TABLE-4.1: Distribution of Some Demographic and Socio Personal characteristics of respondents in percentage.

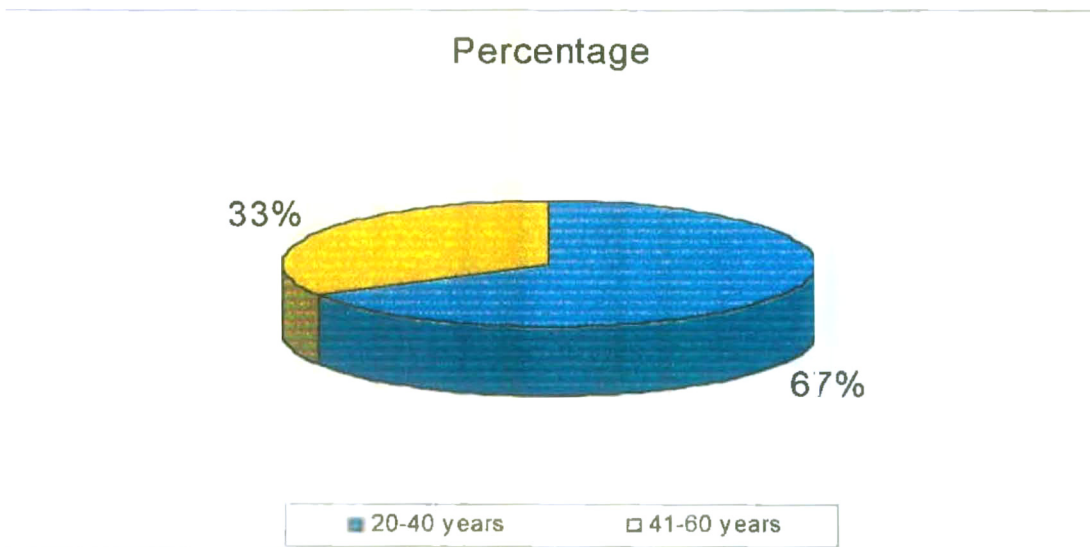
Sl. No	ITEMS	CATEGORY	FREQUENCY (N=90)	PERCENTAGE (%)
1	Category	a. Landless	16	17.78
		b. Marginal	63	70.00
		c. Small	8	8.89
		d. Medium- Large	3	3.33
2	Age	a. 20-40 years	60	66.67
		b. 41-60 years	30	33.33
		c. 61 & above	--	--
3	Religion	a. Hinduism	90	100
		b. Muslim	--	--
		c. Christian	--	--
		d. Others	--	--
4.	Marital Status	a. Married	80	88.89
		b. Unmarried	6	6.67
		c. Widow	2	2.22
		d. Divorced	2	2.22
5	Source of Income	a. Agril & A.H.	66	73.33
		b. A.H.	5	5.55
		c. A.H. & Service	7	7.78
		d. A.H. & Business	5	5.55
		e. Agril, A.H. & Service	2	2.22
		f. Agri, A.H. & Business	5	5.55
6.	Gross Income	a. Below 2000/-	14	15.55
		b.2001-5000/-	60	66.67
		c.5001& above	16	17.78
7.	Herd Size	a. Small farmer	84	93.33
		b. Medium farmer	5	5.56
		c. Large farmer	1	1.11
8.	Occupation	a. Labour	2	2.22
		b. Caste occupation	16	17.78
		c. Business	7	7.78
		d. Independent	--	--
		e. Cultivation	59	65.56
		f. Service	6	6.67
9.	Caste	a. Scheduled caste	12	13.33
		b. Lower caste	15	16.67
		c. Artisan caste	--	--
		d. Agriculture	53	58.89
		e. Prestige caste	7	7.78
		f. Dominant caste	3	3.33
10.	Education of respondent	a. Illiterate	10	11.10
		b. Can read only	--	--
		c. Can read & write	5	5.60
		d. Primary	14	15.60
		e. Middle	23	25.60
		f. High School	31	34.40
		g. Graduate	7	7.80

Sl. No	ITEMS	CATEGORY	FREQUENCY (N=90)	PERCENTAGE (%)
11	Family type	a. Nuclear b. Joint	81 9	90.00 10.00
12	Family size	a. Upto 5 member b. Above 5 member	74 16	82.22 17.78
13	Land Holding	a. No Land b. Upto one hectare c. Upto two hectare d. Above two hectare	16 63 8 3	17.78 70.00 8.89 3.33
14.	House type	a. No house b. Hut c. Kutch house d. Mixed house e. Pucca house f. Mansion	-- -- 24 24 42 --	-- -- 26.67 26.67 46.66 --
15	Electricity	a. Yes b. No	66 24	73.33 26.67
16.	Family culture	a. Rural b. Peri Urban c. Urban	63 27 --	70 30 --
17	Social Participation	a. No participation b. Member of one organization c. Member of more than 1 organization d. Office bearer of any organization	-- 82 8 --	-- 91.11 8.89 --
18.	Extension Training	a. None b. One to two c. Three to four d. Five & above	61 28 1 --	67.78 31.11 1.11 --
19.	News paper reading	a. Never b. Less than once a wk c. Once in week d. Several day in week e. Everyday in week	33 33 5 19 --	36.67 36.67 5.56 21.11 --
20.	Material Possession	a. Bullock cart b. Cycle c. Radio d. Chair e. Improved agril Imply	2 14 34 40 --	2.2 15.6 37.8 44.4 --
21.	Decision making pattern	a. No response b. Husband only c. Collective decision d. Joint decision e. Wife only	1 3 21 50 15	1.11 3.33 23.33 55.56 16.67



LAND HOLDING PATTERN

Fig.-1: Bar diagramme showing distribution of different category of farmers



AGE DISTRIBUTION PATTERN

Fig.-2: Pie-chart showing distribution of different age group of farmer

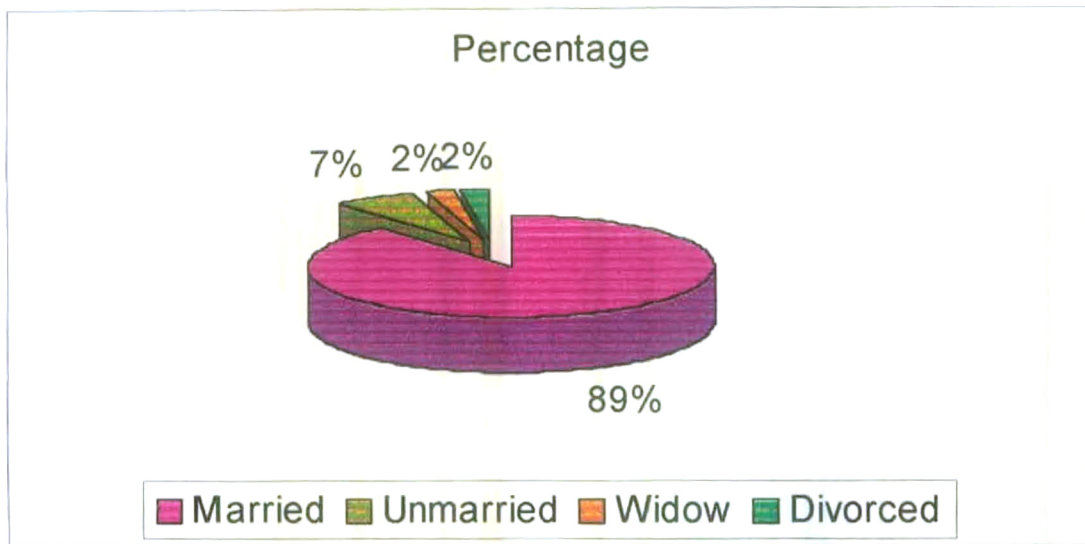


Fig.-3: Pie-chart showing distribution of Marital status of women Dairy farmer

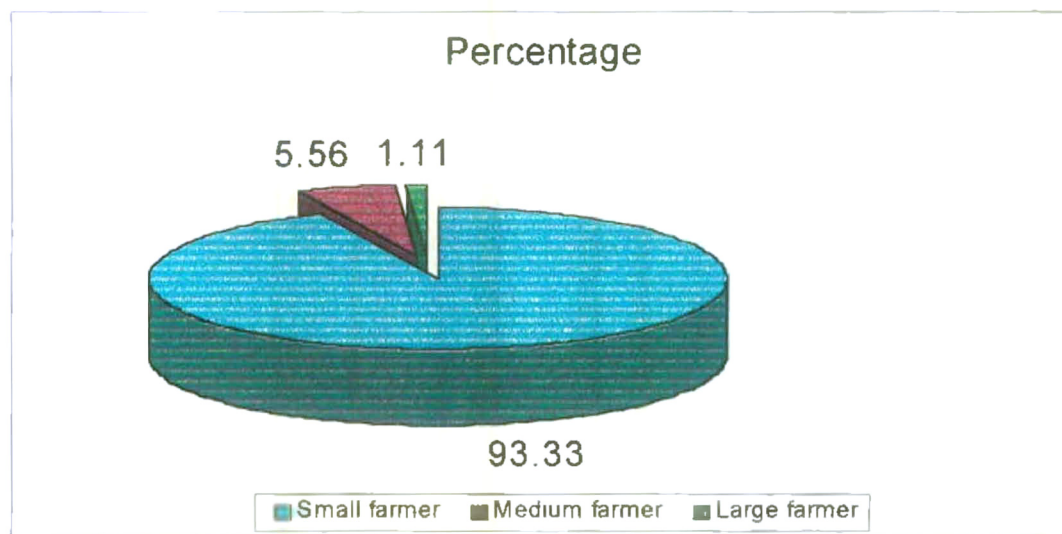
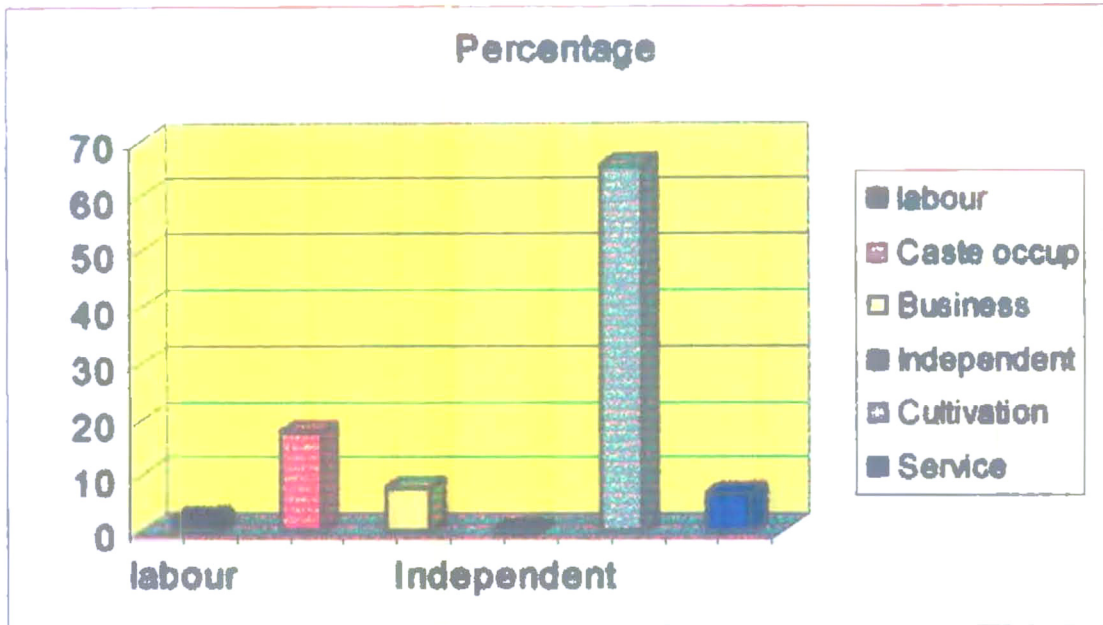


Fig.-4: Pie-chart showing distribution of Herd size of Women Dairy farmer

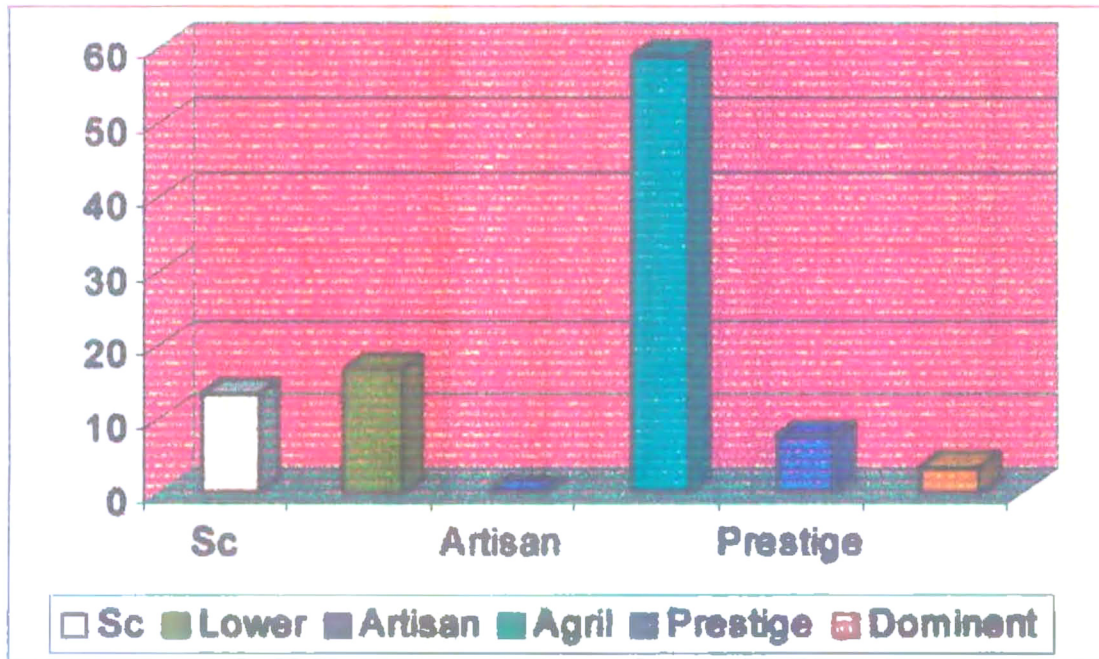
majority (66.67%) of the respondents belongs to middle income group between Rs. 2001-5000/- per month and only 15.55% in low income group i.e. Rs. Below Rs. 2000/-. Among the respondents majority (93.33%) have a livestock holding size of 5 cattle unit (Small farmer) and only one of them (1.11%) is a large farmer (Above 10 cattle) (Fig.-4). It can also be observed from the table that cultivation (65.56%) was the main occupation of the farmer. A mere 17.78%, 6.67%, and 2.22% had caste occupation, business, service and manual labour respectively, as their main occupation (Fig.-5). Further, a cursory look at table 4.1 shows that there was no farmer having independent occupation among all the respondents. It is again revealed that majority of the respondents on overall basis belongs to agricultural caste (58.89%), lower caste (16.67%) and Scheduled caste (13.33%), whereas nearly 3.33% and 7.78% have dominant and prestige caste (Fig.-6). There was no respondent of Artisan category. It is clear from the table 4.1 that 34.40% and 25.60% respondents have high school and middle school education, whereas only 7.80% farmers were graduate; 5.60% of them could read & write (Fig.-7).

Some Socio-economic and communication variables of the livestock owners in terms of percentage distribution are again discussed here in table 4.1.

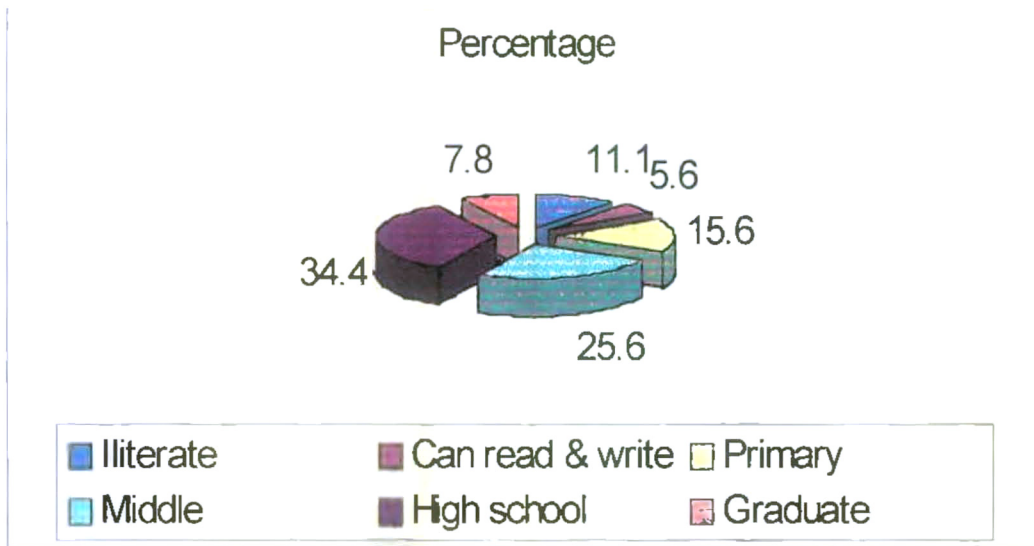
The findings of the table 4.1 shows that majority (90%) of the respondents belongs to nuclear family and only a mere (10%) hailed from the joint family group (Fig.-8). It can further be seen that majority of the farmers (82.22%) have small family size (Upto 5 members) whereas, only few (17.78%) have large family size (Above 5 members). A detailed look at table 4.1 indicate that majority (70%) of the dairy farmer have land upto one hectare (Marginal), but only 3.33% having land above two hectare means large farmers category (Fig.-9). As reported in the table almost 73.33% of respondents have electricity connection in home; in 26.67% cases the houses are not electrified. A perusal of table 4.1 indicate that majority of respondents (46.66%) have Pucca house, whereas, almost similar no. of respondents (26.67%) have kutcha house and mixed house. Among the respondents 70% have rural family culture followed by 30% having Peri-urban family culture .A cursory look at table 4.1 depicted that



OCCUPATION OF RESPONDENT
Fig-5: Bar-diagramme showing distribution of occupation of livestock owners

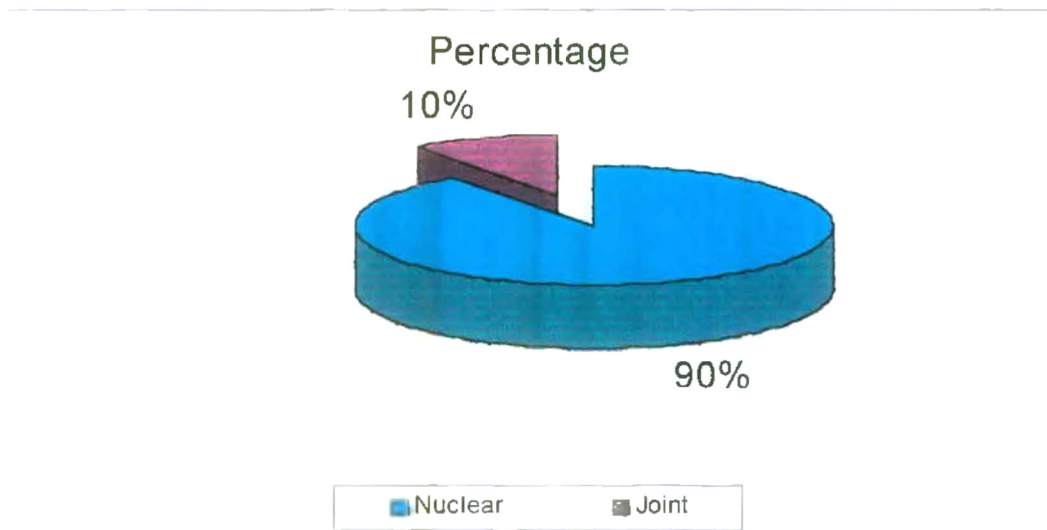


CASTE OF RESPONDENT
Fig-6: Bar- diagramme showing distribution of caste of Livestock owners



EDUCATION OF RESPONDENT

Fig.-7: Pie-chart showing distribution of education of respondent.



FAMILY TYPE OF RESPONDENT

Fig.-8: Pie-chart showing distribution of family type of dairy farmer

majority of the respondents (91.11%) belongs to member of one organization whereas, only small no. (8.89%) of women belongs to members of more than one organization (Fig.-10). It can also be observed from the table that majority of livestock owners (67.78%) have not taken any extension training related to dairy farming, but only 1.11% have taken three to four numbers of training in dairy farming (Fig.-11). Although on an overall basis similar no (36.67%) of respondents read news paper in less than once in a week and never, whereas no respondents were there who read newspaper everyday in a week (Fig.-12). Table 4.1 also reveals that majority of respondents (44.40) have chair in their family, whereas only (2.22%) have bullock cart, but there have been no respondents who possessed improved agricultural implements in their house (Fig-13). The findings also reported that majority of the respondents (55.56%) have taken decision jointly but mere (3.33%) have dependent on the decision by husbands only (Fig.-14).

DAIRY FARMING PROFILES:

A perusal of table 4.2 reported that majority of the women dairy farmer (61.12%) have been rearing cattle for more than 5 years while only small no (4.44%) have below 2 years of experience. Among the respondents, 63.33% obtained round the year production, whereas only 36.67% have seasonal production.

HOUSING

Housing is an elemental need of any living being. In the present study conventional dairy barn system was the predominant (92.2%) farming system among the respondents, whereas only 7.78% respondents were rearing cattle under loose housing system. Majority of respondents (97.78%) housed their cattle in single row system and only a mere (2.22%) housed in double row system. Regarding farm communication and electricity, almost all (96.67%) and (77.78%) farmers had good communication arrangement and electricity in their farms, whereas only 3.33% and 22.22% respondents did not have good communication system and electricity in their dairy farms.

TABLE-4.2: Distribution of Some Dairy farming Profiles of Sample Respondents in Percentage.

Sl. No	Items	Category	Frequency (N=90)	Percentage (%)
1	Farming Period	a. Below 2 years	4	4.44
		b. 2-5 years	31	34.44
		c. 5 years & above	55	61.12
2	Dairy production	a. Round the year	57	63.33
		b. Seasonal	33	36.67
3	Housing Housing system	a. Loose housing	7	7.78
		b. Conventional system	83	92.22
4.	Housing pattern	a. Single row system	88	97.78
		b. Double row system	2	2.22
5	Farm connection	a. Well	87	96.67
		b. Not well	3	3.33
	Farm electricity	a. Yes	70	77.78
		b. No	20	22.22
6.	Loose Housing System Feeding:	a. Grazing only	--	--
		b. Grazing with supplement	7	7.78
7	Freeding frequency	a. Once	--	--
		b. Twice	4	4.44
		c. Thrice	3	3.34
		d. Four	--	--
8.	Conventional Barn system	a. Formulated feed	83	92.22
		b. No formulated feed	--	--
9.	Source of feed	a. Purchased raw materials	--	--
		b. ,, & made at home	83	92.2
10.	Feeding frequency	a. Once	--	--
		b. Twice	50	55.56
		c. Thrice	33	36.67
		d. Four	--	--
11	Water source	a. Pond	--	--
		b. Tube well	90	100
		c. Tap water	--	--
12	Feed Cost is key factor	a. Yes	84	93.33
		b. No	6	6.67
13	Breeding: Cattle procure	a. Local market	29	32.22
		b. Organized Govt. farm	--	--
		c. Private farm	37	41.11
		d. Others	20	22.22
		e. Local market & Private farm	2	2.22
		f. Local market & Others	1	1.11
		g. Private farm & Others	1	1.11

Sl. No	ITEMS	CATEGORY	FREQUENCY (N=90)	PERCENTAGE (%)
14	Use of AI	a. Yes b. No	90 --	10 --
15	AI Facility available	a. Yes b. No	90 --	100 --
16	AI frequency	a. Once b. Twice c. Thrice d. More than thrice	51 38 1 --	56.67 42.22 1.11 --
17	Mortality in AI	a. Maximum b. Minimum c. As usual	-- 79 11	-- 87.78 12.22
18	AI prejudice	a. Yes b. No	4 86	4.44 95.56
19	AI age	a. 12-15 month b. 15-18 month c. 18-24 month	-- 9 81	-- 10.0 90.00
20	Production: Average milk production/day	a. 1-10 kg b. 11-20 kg c. 21 & above	64 23 3	71.11 25.56 3.33
21	First age of milking	a. 18-22 month b. 23-26 month c. 27-30 month	52 3 5	57.78 36.67 5.55
22.	Cost of milk/Kg	a. Rs. 8-10/- b. Rs. 10-12/- c. Rs. 12-14/- d. Rs. 14-16/-	87 3 -- --	96.67 3.33 -- --
23	Remunerative price in milk	a. Yes b. No	49 41	54.44 45.56
24	Milk consumed/day	a. Upto 1 kg b. 1-1.5 kg c. 1.5 kg & above	30 52 8	33.3 57.78 8.89
25	Milk sell/month	a. Upto 20 days b. 21-30 day	4 86	4.44 95.56
26	Milk product sold	a. Yes b. No	7 83	7.78 92.22
27	Cow dung utilization	a. Cow dung cake b. Cow Dung cake & manure c. Cow Dung cake & fertilizer d. Fertilizer	29 2 51 8	32.22 2.22 56.67 8.89

S.No	Items	Category	Frequency	Percentage
28	Cow dung cake sold	a. Yes	10	11.11
		b. No	80	88.89
29	Money earned in cow dung	a. Rs. 50-250/-	5	5.56
		b. Rs. 251-500/-	5	5.56
		c. None	80	88.89
30	Health: Animal treated by	a. Kabiraj	--	--
		b. Self treatment	--	--
		c. Vety. Doctor	54	60
		d. Homeopath	--	--
		e. V.S. & Kabiraj	6	6.67
		f. V.S.&Homeopath	30	33.33
31	Animal vaccinated	a. Yes	85	94.44
		b. No	5	5.56
32	Predominant disease in herd	a. FMD	44	48.89
		b. FMD, Anthrax, HS	1	1.11
		c. FMD, HS & BQ	35	38.89
		d. FMD, BQ	2	2.22
		e. FMD & HS	1	1.12
		f. None	7	7.78
33	Cause of mortality	a. Outbreak of disease	85	94.40
		b. Vaccination outbreak	3	3.30
		c. Disease & Vacc. outbreak	1	1.1
		d. None	1	1.1
34	Periodic preventive dose	a. Dewormer	30	33.30
		b. Vitamin supplement	1	1.11
		c. DW & Vitamin	54	60.0
		d. DW, Vitamine & Water Molasses	1	1.11
		e. DW & Water Molas	3	3.30
		f. None	1	1.11
35	Marketing: Milk sale	a. Local market & Cooperative	1	1.11
		b. Consumer & Cooperative	12	13.33
		c. Cooperative	73	81.11
		d. Cooperative & Middle man	4	4.45
36	Earned money utilization	a. Livelihood	24	26.67
		b. Livelihood & Reinvestment	66	73.33
		c. Reinvestment	--	--
37	Payment mode	a. Daily	--	--
		b. Weekly (10)	89	98.89
		c. Fortnightly	--	--
		d. Monthly	--	--
		e. Weekly & Monthly	1	1.11

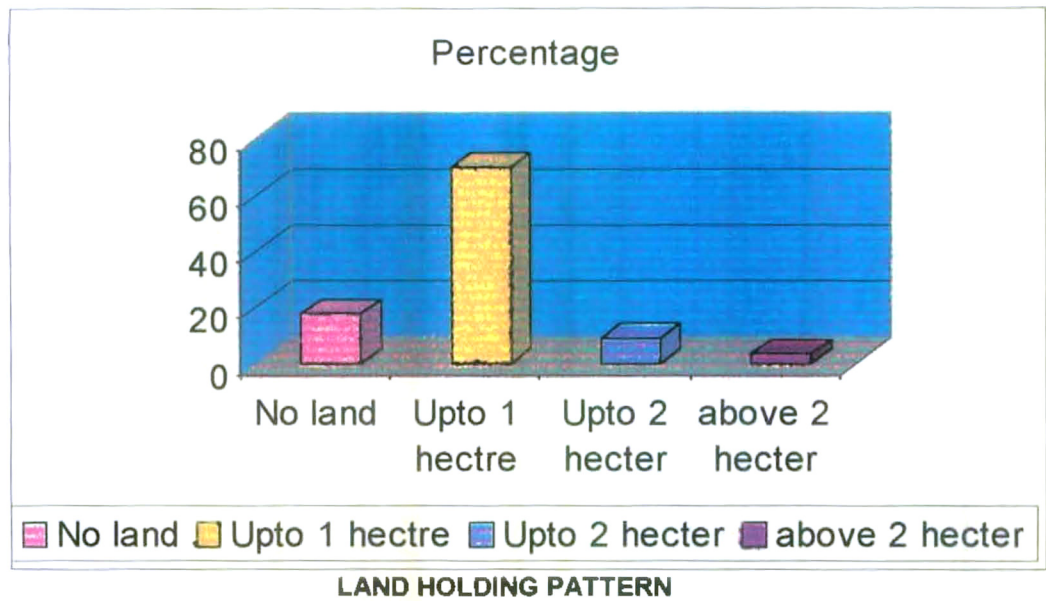


Fig.-9: Bar-diagramme showing distribution of respondent according to land holding

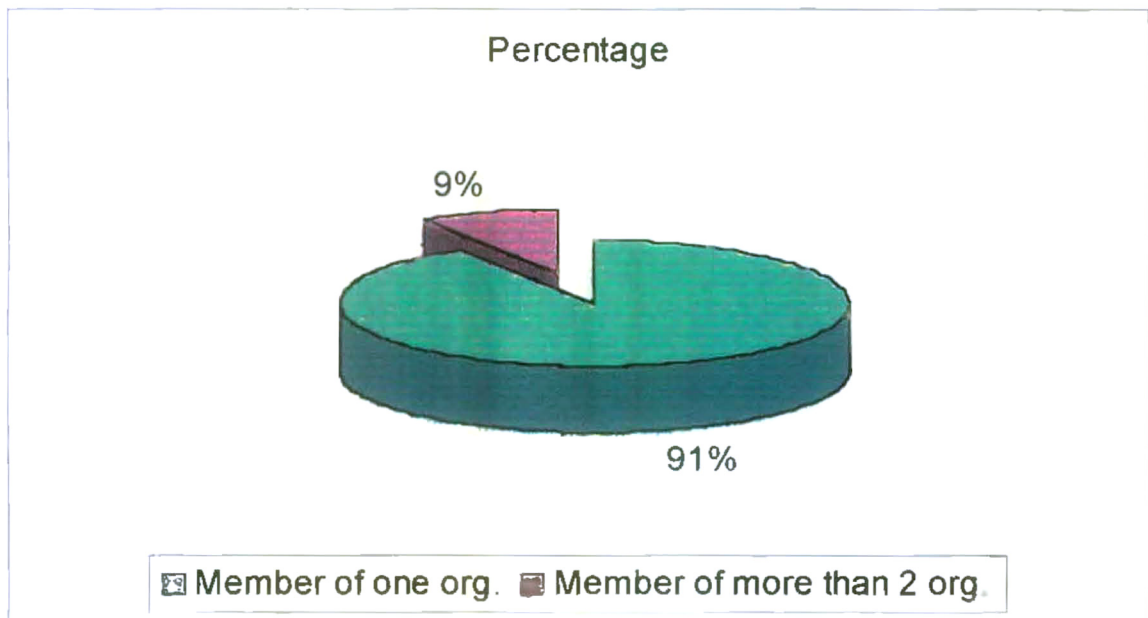
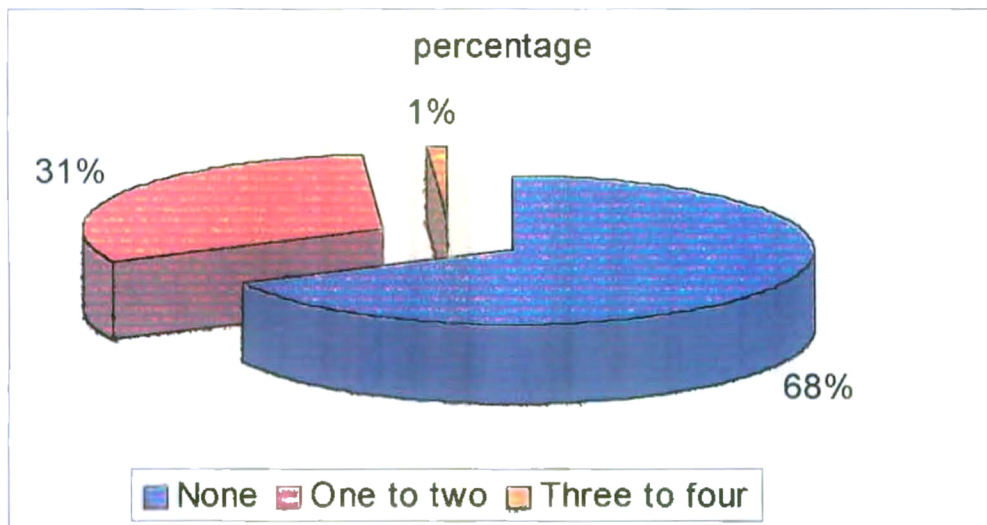
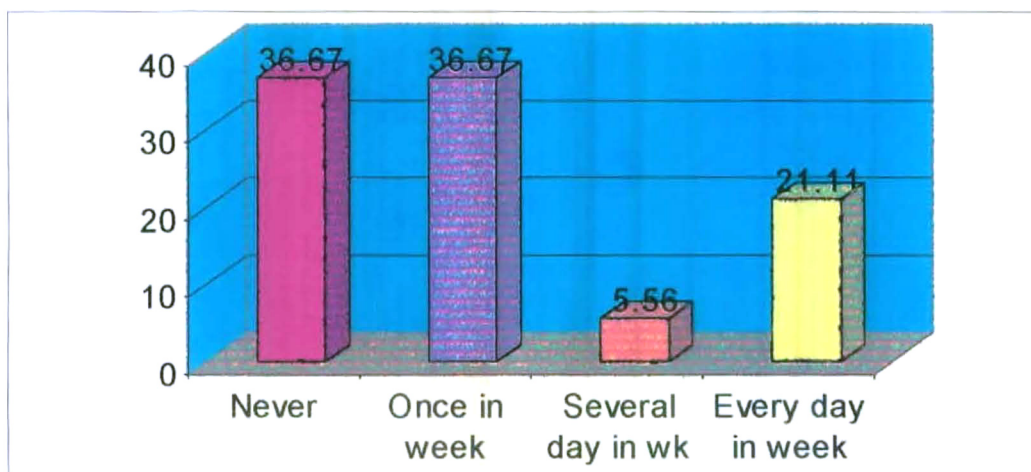


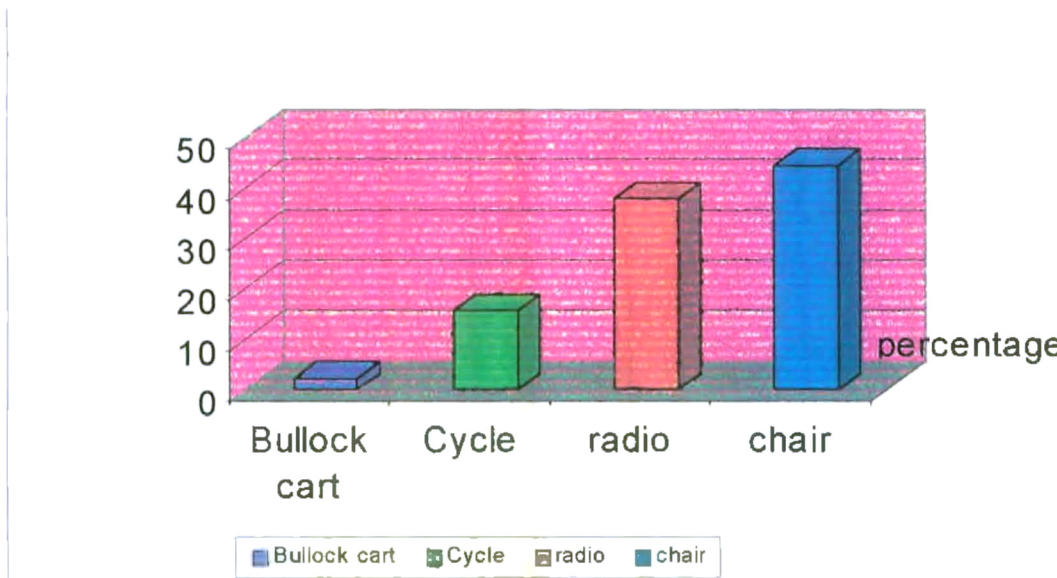
Fig.-10. Pie- chart showing distribution of livestock owners according to social participation



EXTENSION TRAINING OF RESPONDENT
Fig.-11. Pie-chart showing extension training pattern of respondents

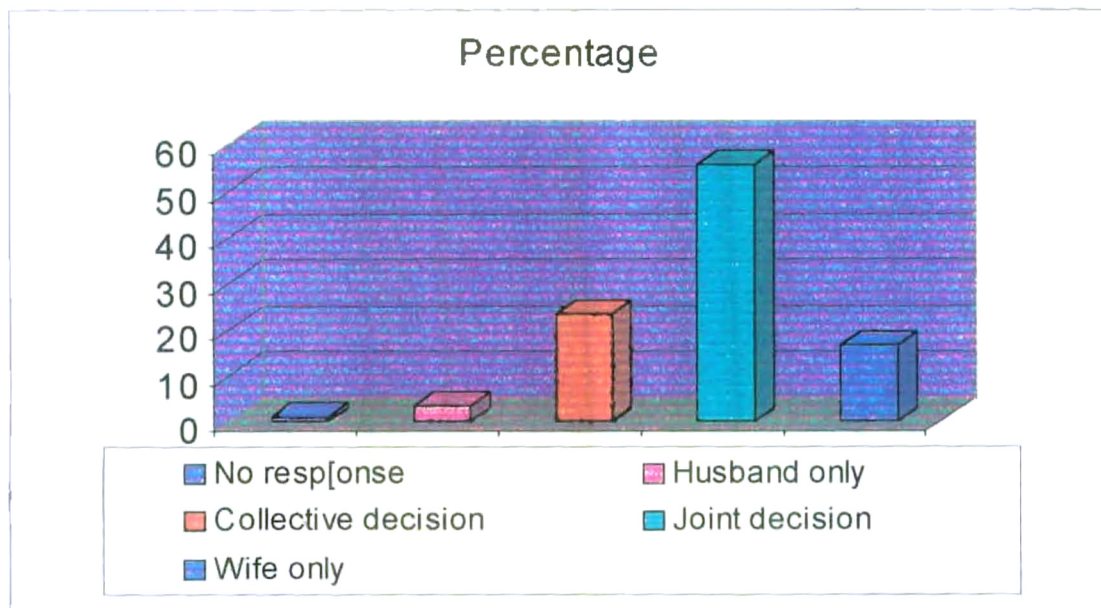


NEWS PAPER READING PATTERN
Fig.-12: Bar diagramme showing news paper reading pattern of farmers.



MATERIAL POSSESSION PATTERN OF RESPONDENT

Fig.-13. Bar diagramme showing mterial possession patternen of respondent



DECISION MAKING PTTEREN OF RESPONDENT

Fig-14.: Bar diagramme showing distribution of decision making patternen of respon

FEEDING

Feeding is another vital as well as one of the most elemental needs of life. Seventy percent of the expenditure in dairy farming accounts for the feed cost of livestock farming. Under loose housing system of dairy farming in rural areas is of leaving cattle for grazing in morning and giving a lump sum amount of grass and concentrate during daytime. Some supplementary feed is offered in night shelter too. But in conventional barn system cattle have been reared totally in confinement with full straw, grass and concentrate supplement. Table 4.2 shows that among the respondents majority (92.22%) reared their cattle in conventional system and only a few (7.78%) are reared in loose housing system with grazing and supplement. A detailed look at the table 4.2 reveals that majority of respondents (55.56%) in conventional system and 4.44% in loose housing system fed their cattle twice a day and rest feed their cattle thrice a day in both the system. All the farmers used water from tube well (100%) for drinking in both the system. It is further seen that almost all farmers (93.33%) seemed that feed cost is key factor in dairy farming.

BREEDING

Excellent breeding stock is a precursor of efficient productivity. To get an insight, attempt was made to study the breeding practices prevalent. It is evident from table 4.2 that majority of respondents (41.11% & 32.22%) purchased their cattle from private farm and private farm and local market respectively whereas there was no single farmer who procures their cattle from organized govt. farm. It is also interesting to mention here that all respondent (100%) have used AI for breeding and opined that AI facility is locally available. The table again depicted that majority (56.67%) of the respondents once used AI for successful pregnancy, whereas only 1.11% used thrice time AI for pregnancy. On the other hand majority of the respondents (87.78%) opined that mortality in AI was minimum, but only small no. (12.22%) said that mortality in AI was as usual. The data under table 4.2 also shows that majority of the livestock owners (90%) have done AI in cattle within the age group of 18-24 months, whereas only 10.00% have done AI within the age group of 15-

18 months. Further, almost all the respondents (95.56%) reported that there have been no prejudices in their locality regarding AI concept.

PRODUCTION

Good productivity of livestock can be a panacea for many a nutrition related problems in rural areas. In the study area as shown in table 4.2. that majority of the respondents (71.11%) obtained average milk/day from their cattle within 1-10 Kg, whereas only 3.33% dairy farmers obtained milk above 20 Kg/day. A cursory look at the table 4.2 indicated that majority of the farmers (57.78%) obtained production from their cow at the age of 18-24 months and only small no. (5.55%) obtained production at 27-30 months age. The data indicated that almost all the respondents (96.67%) sold their milk to milk cooperative at a price of Rs. 8-10/- per Kg and rest have sold their milk at a price of Rs. 10-12/- per Kg. Among the sample respondents almost equal no. (54.44% and 45.56%) of farmers have positive as well as negative opinion regarding remunerative price of milk. It can again be observed from the table that majority of women farmers (57.78%) kept 1-1.5 Kg. milk/day for their consumption, whereas only 8.89% consumed milk above 1.5Kg /day. It is again reported that almost all the farmers (95.56%) sold their milk upto 30 days/month, but only few (4.44%) sold their milk upto 20 days/month. Among the overall sample, only small no (7.78%) of farmers sold milk products from milk and rest of all have not sold any milk products. It is interesting to note that majority (56.67%) of the respondents have utilized their cow dung in terms of Cow dung cake and fertilizer, whereas only 2.22% used as cow dung cake and manure. It is also pointed out in the table that majority of the women dairy farmers (88.89%) sold their cow dung cake, who made cow-dung cake from cow-dung. Almost equal no (5.56%) of respondents earned money i.e. Rs. 50-250/- and Rs. 251-50/- per month from cow dung cake.

HEALTH

Health and production are two interdependent issues in dairy farming. So, health care is also a precursor of efficient production and transformation. A cursory look at the table 4.2 explains that majority of respondents (60%) treated their cattle by qualified veterinary doctor,

whereas 6.67% and 33.33% farmers treated their cattle by V.S. and Kabiraj and V.S. and Homeopath. The table indicated that almost all the respondents (94.44%) vaccinated their cattle and rest of the respondents did not vaccinate their cattle for preventing infectious disease. FMD was the predominant disease encountered by majority of respondents (48.89%) followed by 7.78% respondents have not encountered any predominant disease in their herd. The table again depicted that, the cause of mortality as reported by majority of respondents (94.40%) was outbreak of disease, whereas only single respondent (1.11%) has reported the mortality cause was vaccination outbreak. It can further be seen that majority of farmer (60%) have provided dewormer and vitamin supplement as periodic preventive dose for better production in cattle.

MARKETING

Marketing is a key factor for any successful farming operation. The perusal of table 4.2 reveals that majority of respondents (81.11%) sold their milk to local milk cooperative whereas few respondents i.e. 4.45% and 1.11% sold their milk to cooperative and middle man and local market and cooperative. The data of the table indicated that majority (73.33%) of the farmer utilized their earned money in livelihood and reinvestment and only small no. (26.67%) spent their earned money in livelihood purpose only. Finally the table focused that almost all the respondents (98.89%) obtained their payment in every ten days interval, which is very much indicative of their cooperative dependency as this is the payment mode of milk cooperative.

For the purpose of Correlation analysis and Path analysis some Socio-Personal and communication characteristics of the sample livestock owners were measured on the basis of Socio-Economic status scale (Rural) by Parek and Trivedi (1964) and scales developed by other scientist. The information regarding these scales have already been provided in methodology chapter. The mean values of the said characteristic in respect of the sample livestock owners have been compared with the help of 't' test, ANNOVA and Chi-square test and finally the results are explained in various tables.

Independent sample 't' test between Employment status and some selected independent variables (Socio-economic and Communication) were calculated for overall (N=90) sample livestock owners of two blocks. The results have been summarized in table 4.3.

It is evident from table 4.3 that the mean scores obtained by the sample livestock owners in respect of the characteristics namely joint family type was found to be significantly higher ($P < 0.05$) than nuclear family type respondents, whereas, the mean value of family size (More than 5 members) was found to be significantly higher ($P < 0.05$) than the family size (Upto 5 members). It is also clear from the table that mean value of age group 41-60 years was higher than the age group of 20-40 years. On the other hand, the mean scores of herd size (Medium farmer) was higher than herd size (Small farmer) but not significantly. Similarly, mean of social participation (member of more than one organization) was higher than social participation (Member of one organization), whereas mean value of Peri-urban family culture was higher than rural family culture but not significantly.

These facts suggests that joint family of dairy farmer having more than 5 member have better and significant employment status than the nuclear family having upto 5 members in the family.

Chi-square test (Spearman Correlation) between Employment status and some selected independent variables (Socio-economic, Communication and Socio-psychological) were computed for overall sample women dairy farmer (N=90) of two blocks. The results have been given in table 4.4.

A detailed look at table 4.4 indicated that there was significant relationship ($P < 0.05$) between employment status and Knowledge in Deworming in case of overall respondents, while it was noted that there was no significant relationship between the employment status and family education status, material possession, information sources utilization, attitude in dairy farming, attitude towards employment, attitude towards income generation, Knowledge in AI, and Adoption index of women dairy farmer.

Table-4.3: Independent Sample t-test between some selected Independent Variables and Employment status of Sample respondents.

(N=90)

Variables	Group	Mean \pm SE	't'-Value	df	Sig (2 tail)
1. Age (X ₁)	a. 20-40 years	3.25 \pm 0.15	-1.804	88	0.075
	b. 41-60 years	3.70 \pm 0.19			
2. Herd size (X ₁₀)	a. Small farmer	3.39 \pm 0.13	-0.394	87	0.694
	b. Medium farmer	3.60 \pm 0.40			
3. Family type (X ₆)	a. Nuclear	3.31 \pm 0.12	-2.360	88	0.020*
	b. Joint	4.22 \pm 0.43			
4. Family size (X ₇)	a. Upto five	3.28 \pm 0.12	-2.141	88	.035*
	b. More than 5	3.94 \pm 0.34			
5. Social Participation (X ₁₅)	a. Member of one organization	3.35 \pm 0.13	-1.250	88	0.215
	b. Member of more than one org.	3.88 \pm 0.35			
6. Family culture (X ₁₆)	a. Rural	3.29 \pm 0.14	-1.476	88	0.144
	b. Peri- urban	3.67 \pm 0.21			

NOTE: * Significant at 0.05 level, ** Significant at 0.01 level.

Table-4.4: Chi- square test (Spearman Correlation coefficient) between some selected Independent variables and Employment status of sample respondents.

(N=90)

Variables	Pearson Chi-square Value	df	Sig (2 tailed)
a. Family Edu. Status* Employ status	171.904 ^a	175	0.552
b. Material Possession* Employ status	19.812 ^a	15	0.179
c. Information sources* Employ status	76.802 ^a	70	0.270
d. Attitude in dairy * Employ status	54.865 ^a	55	0.480
e. Knowledge in AI* Employ status	19.087 ^a	25	0.793
f. Know in Deworming* Employ status	43.091 ^a	25	0.014*
g. Attitude for Employ stat* Employ status	45.121 ^a	35	0.118
h. Attitude for Income Gen *Employ status	85.431 ^a	65	0.046
i. Adoption Index * Employ status	216.955 ^a	185	0.054

NOTE: * Significant at 0.05 level, ** Significant at 0.01 level.

Analysis of variance (ANNOVA) between employment status and some selected independent variables (Socio-economic and Socio-Psychological) were analyzed for overall sample livestock farmers (N=90) of two blocks. The results have been summarized in table 4.5.

A Perusal of table 4.5 focused that the mean values of low-income group (Below Rs. 2000/-) respondents significantly differ than high income group (Above Rs. 5001/-) dairy farmers considering their employment status and middle-income group (Rs. 2001/- to 5000/-) having overlapping value of this two group. On the other hand, mean values of Kutcha house resident significantly varies than Pucca house resident and mixed house resident having overlapping value of other two groups. But in case of other variables namely occupation, caste, respondents education, land and decision making, there have been no significant relationship within the group and employment status of sample women dairy farmers.

The mean scores of different independent and dependent variables of sample respondents of Bagdah and Gaighata block are presented in table 4.6.

A cursory look at table 4.6 indicated that the mean scores obtained by the sample livestock owners of Bagdah block in respect of variables namely caste, family education status, and attitude towards employment were found to be significantly ($P<0.05$) higher than their Gaighata block counterparts, whereas in case of some characteristics like occupation, land, gross income, attitude in dairy farming and decision making the mean values of the Bagdah block sample women dairy farmers were found to be significantly highest ($P<0.01$) than those of Gaighata block sample livestock owners.

The mean value of different variables of member and non-member Cooperative respondents in Bagdah and Gaighata block are provided in table 4.7 and 4.8.

A perusal of table 4.7 revealed that the mean scores obtained by the member Cooperative of Bagdah block in respect of variables namely- occupation, Material possession, Social participation, attitude in dairy farming, Knowledge in AI, Decision making and adoption behaviour found

Table-4.5: Analysis of variance (ANNOVA) between some selected Independent variables and Employment status of Sample respondents.

(N=90)

Variables	Group	Mean \pm SE	F-test	df	Sig (2 tail)
1.Gross Income (X ₁₂)	a. Below 2000/- b. 2001/-to 5000/- c. 5001/- & above	3.21 ^a \pm 0.37 3.28 ^{ab} \pm 0.12 4.00 ^b \pm 0.34	2.882	2,87	0.061
2.Occupation (X ₂)	a. Labour b. Caste occupation c. Business d. Cultivation e. Service	2.50 ^a \pm 0.50 3.50 ^a \pm 0.32 3.29 ^a \pm 0.47 3.37 ^a \pm 0.14 3.83 ^a \pm 0.48	0.585	4,85	0.675
3. Caste (X ₃)	a. Sc b. Lower caste c. Agril caste d. Prestige caste e. Dominant	3.08 ^a \pm 0.36 3.33 ^a \pm 0.33 3.49 ^a \pm 0.15 3.43 ^a \pm 0.48 3.33 ^a \pm 0.33	0.327	4,85	0.859
4.Education of Respondent (X ₄)	a. Illiterate b. Can read only c. Primary d. Middle e. High school f. Graduate	3.30 ^a \pm 0.30 3.60 ^a \pm 0.40 3.64 ^a \pm 0.40 3.09 ^a \pm 0.19 3.42 ^a \pm 0.18 3.86 ^a \pm 0.67	0.750	5,84	0.588
5.Land (X ₈)	a. No Land b. Upto one hector c. Upto two hector d. Above two hector	3.25 ^a \pm 0.17 3.38 ^a \pm 0.16 3.75 ^a \pm 0.37 3.67 ^a \pm 0.67	0.405	3,86	0.751
6.House type (X ₉)	a. Kutcha house b. Mixed house c. Pucca house d. Mansion	3.25 ^a \pm 0.26 3.17 ^{ab} \pm 0.19 3.62 ^b \pm 0.18 0 \pm 0.00	1.531	2,87	0.222
7.Decision Making (X ₂₂)	a. No response b. Husband only c. Collective d. Joint decision e. Wife only	2.00 ^a \pm 0.00 3.00 ^a \pm 0.00 3.24 ^a \pm 0.19 3.50 ^a \pm 0.18 3.47 ^a \pm 0.27	0.406	3,85	0.747

* Similar alphabets denote homogeneous means due to 'Duncan's' test at 5% level.

Table-4.6: Significance of difference in the mean values of different Independent & Dependent variables Of sample between Gaighata and Bagdah Block Respondents.

Independent Variables	Mean value of Gaighata Block (N=30)	Mean value of Bagdah Block (N=60)	't' value	Sig (2 tailed)
Socio- Economic:				
(X1). Age	1.37	1.32	0.470	0.640
(X2). Occupation	3.20	4.83	-6.50	0.000**
(X3). Caste	2.97	3.63	-2.308	0.023*
(X4). Resp. Education	3.30	3.95	-1.681	0.096
(X5). Family Edu. status	3.48	3.98	-2.534	0.013*
(X6). Family type	1.07	1.12	-0.739	0.462
(X7). Family size	1.10	1.22	-1.364	0.176
(X8). Land	0.57	1.18	-4.859	0.000**
(X9). House type	3.10	3.25	-0.800	0.426
(X10).Herd size	1.13	1.05	1.212	0.229
(X11). Material Possession	3.03	3.35	-1.798	0.076
(X12). Gross Income	1.70	2.18	-4.033	0.000**
Communication:				
(X13). Inform. Source	8.43	9.72	-1.897	0.061
((X14). Urban contact	3.37	4.47	-2.778	0.007**
(X15). Social Participation	1.10	1.08	0.259	0.796
(X16). Family culture	1.37	1.27	0.970	0.335
Socio- Psychological:				
(X17). Attitude in Dairy farm	18.83	21.57	-5.815	0.000**
(X18). Know in AI	6.53	6.77	-0.886	0.378
(X19). Know in DW	4.17	4.57	-1.939	0.056
(X20). Attitude in Employ	17.17	18.20	-2.471	0.018*
(X21). Attitude in Income generation	24.57	24.88	-0.543	0.589
(X22). Decision making	3.53	3.98	-2.658	0.009**
(X23). Adoption Index	3.23	3.50	-1.008	0.316
24 Employ status				

NOTE: Figures in Parenthesis are no of Observation. * P < 0.05 ** P< 0.01.

Table- 4.7: Significance of difference in the mean values of variables of Member & Non member Cooperative respondents in Bagdah Block.

Independent Variables	Mean value of Member Cooperative (N=60)	Mean value of Non-Member Cooperative (N=5)	't' value	Sig (2 tailed)
Socio- Economic:				
(X1). Age	1.32	1.40	-0.377	0.707
(X2). Occupation	4.83	3.40	3.545	0.001**
(X3). Caste	3.63	2.60	1.846	0.070
(X4). Respo. Education	3.95	2.20	2.305	0.024
(X5). Family Edu status	3.98	3.46	1.470	0.147
(X6). Family type	1.12	1.20	-0.538	0.593
(X7). Family size	1.22	1.20	0.086	0.932
(X8). Land	1.18	0.80	1.340	0.185
(X9). House type	3.25	3.20	0.138	0.891
(X10).Herd size	1.05	1.00	0.505	0.615
(X11). Material Possession	3.35	1.00	6.908	0.000**
(X12). Gross Income	2.18	2.0	0.808	0.42
Communication:				
(X13). Inform. Source	9.72	7.60	1.655	0.103
((X14). Urban contact	4.47	5.80	-1.687	0.097
(X15). Social Participat	1.08	0.0	8.629	0.00**
(X16). Family culture	1.27	1.20	0.321	0.749
Socio- Psychological:				
(X17). Attitude in Dairy	21.57	18.60	3.396	0.001**
(X18). Know in AI	6.77	4.80	3.505	0.001**
(X19). Know in DW	4.57	5.60	-2.494	0.015*
(X20). Attitude in Employ	18.20	18.00	0.241	0.810
(X21). Attitude in Income generation	24.88	25.00	-0.099	0.921
(X22). Decision making	3.98	2.60	4.610	0.000**
(X23). Adoption Index	3.50	1.99	2.519	0.014*
(X24). Employ status	3.42	3.40	0.029	0.977

NOTE: Figures in Parenthesis are no of Observation. * P < 0.05 ** P < 0.01.

to be significantly ($P < 0.01$) higher than their Non-member counterparts, whereas the mean value of member cooperative in respect of Knowledge in deworming was found to be significantly ($P < 0.05$) lower than their Non-member counterparts.

Similarly, a detailed observation at table 4.8 depicted that, the mean scores obtained by the member cooperative of Gaighata block in respect of variables namely- Respondent education, Social participation, Knowledge in AI, Knowledge in deworming, and adoption behaviour were found to be significantly highest ($P < 0.01$) than their Non-cooperative member counterparts, while the mean value of member cooperative in respect of caste, House type, Gross income, were found to be significantly higher ($P < 0.05$) than Non-member counterparts in Gaighata block.

Correlation Coefficient between Employment status of women dairy farmer and the independent variables (Selected Socio-economic, Communication and Socio-Psychological) were calculated for the overall respondents and for the sample livestock owners of Bagdah and Gaighata block. The results have been summarized in table-4.9 to 4.11.

A perusal of table 4.9 indicates that in case of overall livestock farmers there were significant relationship ($P < 0.05$) between the Employment status (Dependent variables) and variables like –family type, family size, Gross income, and highly significant relationship ($P < 0.01$) between Employment status with Knowledge in Deworming, Attitude towards employment, Attitude toward income generation and adoption of dairy farmers in Pearson correlation.

It was again noted that there was significant ($P < 0.05$) relationship between Employment status and variables like- age, Family type, Gross income, whereas, highly significant ($P < 0.01$) relationship of employment status with Knowledge in deworming, attitude towards employment, attitude towards income generation and adoption of livestock owners in Spearman correlation. So, the Employment status of sample respondents had to depend mostly on knowledge in deworming, attitude towards employment, attitude towards income generation, adoption index of dairy farmer, gross income and family type mainly.

Table- 4.8: Significance difference in the mean values of variables of Member & Non member Cooperative respondents in Gaighata Block.

Independent Variables	Mean value of Member Cooperative (N=30)	Mean value of Non-Member Cooperative (N=5)	t value	Sig (2 tailed)
Socio- Economic:				
(X1). Age	1.37	1.40	-0.139	0.891
(X2). Occupation	3.20	4.20	-1.271	0.231
(X3). Caste	2.97	1.20	2.515	0.017*
(X4). Resp. Educa.	3.30	0.60	3.041	0.005**
(X5). Family Edu status	3.48	2.62	1.562	0.128
(X6). Family type	1.07	1.20	-0.971	0.339
(X7). Family size	1.10	1.20	-0.636	0.529
(X8). Land	0.57	1.00	-1.899	0.066
(X9). House type	3.10	2.00	2.532	0.016*
(X10). Herd size	1.13	1.0	0.678	0.502
(X11). Material Possession	3.03	2.80	0.595	0.556
(X12). Gross Income	1.70	1.0	2.594	0.014*
Communication:				
(X13). Inform. Source	8.43	6.0	1.539	0.133
((X14). Urban contact	3.37	3.00	0.418	0.679
(X15). Social Participation	1.10	0.00	7.961	0.000**
(X16). Family culture	1.37	1.0	1.652	0.108
Socio- Psychological:				
(X17). Attitude in Dairy farm	18.83	18.80	0.029	0.977
(X18). Know in AI	6.53	2.20	6.237	0.000**
(X19). Know in DW	4.17	2.20	2.947	0.006**
(X20). Attitude in Employ	17.17	16.80	0.390	0.699
(X21). Attitude in Income generation	24.57	23.60	0.732	0.469
(X22). Decision making	3.53	3.40	0.286	0.776
(X23). Adoption Index	3.23	1.82	3.437	0.002**
(X24). Employ status	3.37	3.00	0.784	0.439

NOTE: Figures in Parenthesis are no of Observation. * P < 0.05 ** P < 0.01.

Table-4.9: Zero Order Correlation and Spearman Correlation between Employment status and Independent variables of sample respondent. (N=90)

Independent Variables	Correlation coefficient (γ) values	
	Pearson correlation	Spearman correlation
Socio- Economic:		
(X1). Age	0.189	0.211*
(X2). Occupation	0.048	0.084
(X3). Caste	0.099	0.123
(X4). Resp. Education	0.026	0.028
(X5). Family Edu. status	0.090	0.107
(X6). Family type	0.244*	0.228*
(X7). Family size	0.222*	0.191
(X8). Land	0.106	0.089
(X9). House type	0.152	0.178
(X10). Herd size	0.06	0.042
(X11). Material Possession	0.202	0.203
(X12). Gross Income	0.209*	0.207*
Communication:		
(X13). Inform. Source	0.086	0.045
((X14). Urban contact	0.051	0.040
(X15). Social Participation	0.132	0.172
(X16). Family culture	0.155	0.171
Socio- Psychological:		
(X17). Attitude in Dairy farm	0.171	0.205
(X18). Know in AI	0.145	0.160
(X19). Know in DW	0.291**	0.344**
(X20). Attitude in Employ	0.435**	0.434**
(X21). Attitude in Income generation	0.372**	0.398**
(X22). Decision making	0.140	0.121
(X23). Adoption Index	0.493**	0.451**

Note: Figures in Parenthesis are no of observation. * P < 0.05 level, ** P<0.01.

A cursory look at table 4.10 reveals that in case of Bagdah block (N=60) livestock owners there were significant relationship ($P<0.05$) between employment status and variables like age, material possession, attitude in dairy farming, whereas highly significant relationship ($P<0.01$) between employment status and knowledge in deworming, attitude towards employment, attitude towards income generation and adoption of dairy farmers. It was again observed that there was highly significant relationship ($P<0.01$) between the dependent variables and variables like-family type, Family size, attitude for employment, adoption of dairy farmers and decision making of women farmer in case of Gaighata block (N=30) livestock owners. The Bagdah block sample livestock owners had to depend mostly on gross income, Knowledge in Deworming, attitude towards employment, attitude toward income generation and adoption of dairy farmers regarding their employment status. The selected Gaighata block sample dairy farmers had obvious better family type, family size, better attitude towards employment, better adoption of dairy farmers and efficient decision making power regarding their employment status which helped the researchers considerably for carrying out their trials on the sample livestock owners.

Almost similar findings were reported in Spearman correlation test (chi-square test) from table 4.11 where in case of Bagdah block livestock owners there were significant relationship ($P<0.01$) between Employment status and variables like- age, material possession, attitude towards dairy farming, whereas highly significant relationship ($P<0.01$) was observed between Employment status and gross income, Knowledge in deworming, attitude towards employment, attitude towards income generation and adoption of women dairy farmer. On the other hand, it was evident that there was significant relationship ($P<0.05$) between the employment status and variables viz. family type, decision-making, attitude towards employment and adoption index of sample respondents of Gaighata block. It was clear from the table that employment status of livestock owners had to depend mostly on gross income, material possession, attitude in dairy farming, knowledge in deworming, attitude towards employment, attitude towards income generation and adoption of dairy farmers.

Table- 4.10: Zero Order Correlation (γ) between Employment status and Independent variables.

(N=90)

Independent Variables	Correlation coefficient (γ) values	
	Bagdah Block (N=60)	Gaighata Block (N=30)
Socio- Economic:		
(X1). Age	0.301*	-0.076
(X2). Occupation	0.074	0.018
(X3). Caste	0.136	0.032
(X4). Respo. Education	0.011	0.050
(X5). Family Edu status	0.037	0.183
(X6). Family type	0.133	0.601**
(X7). Family size	0.154	0.457**
(X8). Land	0.127	0.054
(X9). House type	0.249	-0.041
(X10).Herd size	0.111	-0.121
(X11). Material Possession	0.301*	-0.015
(X12). Gross Income	0.372**	-0.102
Communication:		
(X13). Inform. Source	0.031	0.199
((X14). Urban contact	0.036	0.074
(X15). Social Participation	0.096	0.223
(X16). Family culture	0.199	0.071
Socio- Psychological:		
(X17). Attitude in Dairy farm	0.307*	-0.071
(X18). Know in AI	0.145	0.142
(X19). Know in DW	0.352**	0.157
(X20). Attitude in Employ	0.40**	0.567**
(X21). Attitude in Income generation	0.401**	0.327
(X22). Decision making	0.009	0.372**
(X23). Adoption Index	0.526**	0.377**

NOTE: Figures in Parenthesis are no of Observation. * P < 0.05 ** P < 0.01.

Table-4.11: Spearman Correlation (Chi square) between Employment status and Independent variables of respondents.

(N=90)

Independent Variables	Correlation coefficient (γ) values	
	Bagdah Block (N=60)	Gaighata Block (N=30)
Socio- Economic:		
(X1). Age	0.305*	0.013
(X2). Occupation	0.108	0.130
(X3). Caste	0.121	0.132
(X4). Respo. Education	0.010	0.084
(X5). Family Edu status	0.101	0.167
(X6). Family type	0.166	0.406*
(X7). Family size	0.164	0.287
(X8). Land	0.161	-0.061
(X9). House type	0.252	0.049
(X10).Herd size	0.132	-0.151
(X11). Material Possession	0.311*	-0.034
(X12). Gross Income	0.345**	-0.034
Communication:		
(X13). Inform. Source	-0.021	0.155
((X14). Urban contact	0.011	0.114
(X15). Social Participation	0.124	0.273
(X16). Family culture	0.189	0.143
Socio- Psychological:		
(X17). Attitude in Dairy farm	0.321*	-0.002
(X18). Know in AI	0.152	0.181
(X19). Know in DW	0.364**	0.338
(X20). Attitude in Employ	0.388**	0.613**
(X21). Attitude in Income generation	0.422**	0.314
(X22). Decision making	0.003	0.447*
(X23). Adoption Index	0.462**	0.480**

NOTE: Figures in Parenthesis are no of Observation. * P < 0.05 ** P < 0.01.

Correlation matrices in respect of the sample livestock owners prepared on the basis of the correlation values between employment status and the selected independent variables.

These tables formed the basis of path analysis, which actually helped the present researcher to arrive at definite conclusions regarding the extent of influences of particular independent variables on the employment status of women dairy farmers. Therefore, path analysis as a statistical technique was utilized for interpreting these influences for the overall sample livestock owners.

Path analysis on the basis of relationship between Employment status and the Exogenous (23) variables.

The results of Path analysis (Table-4.12) for livestock owners (N=90) represents the direct and indirect effect of the 23 selected exogenous variables on employment status of women dairy farmer. The path coefficient with overall direct and indirect effect has also been shown in diagram 1.

The data revealed that attitude for employment (0.231) has the largest direct effect on employment status of sample respondents followed in descending order by adoption index (0.202), gross income (0.181), social participation (0.162), attitude towards income generation (0.129), Knowledge in deworming (0.126), material possession (0.116), Family culture (0.092), Family size (0.076), age (0.075), caste (0.060), family type (0.053), land (0.029), House type (0.014), attitude in dairy farming (0.004), information sources (0.001) had positive direct effect on employment status except Decision making (-0.001), knowledge in AI (-0.037), Respondent education (-0.074), urban contact (-0.076), family education status (-0.109), occupation (-0.166) Herd size (-0.185) which have negative direct effect on employment.

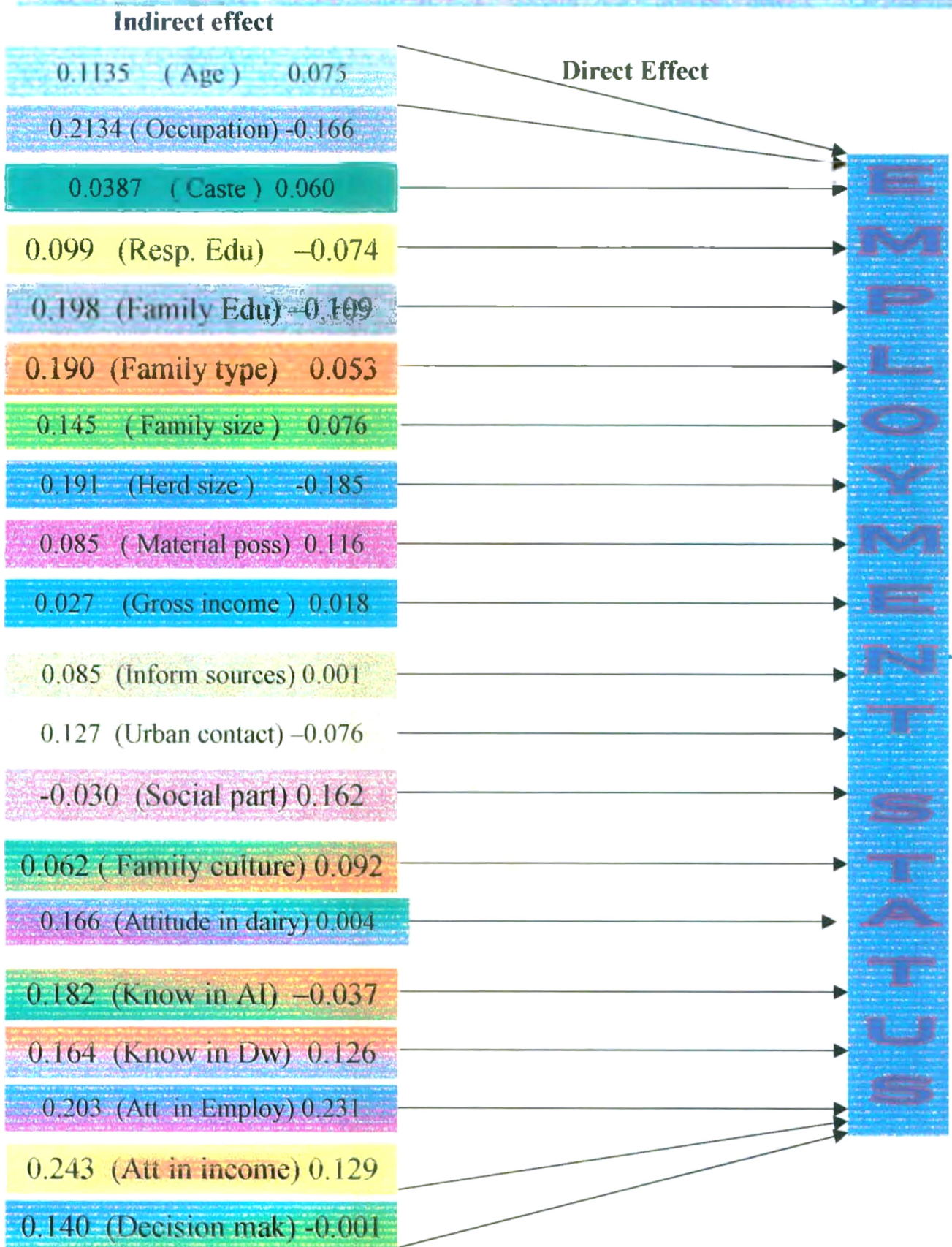
As regard total indirect effects, it is revealed from table 4.12 that in case of women livestock keepers adoption Index (0.2908), attitude towards income generation (0.2430) occupation (0.2143), attitude towards employment (0.2035), family education status (0.1989), are the first five factors which exerts the largest indirect effects, others like- Herd size (0.1915), family type (0.1907), knowledge in AI (0.1832), attitude in dairy

Table-4.12: Path coefficient Showing Direct & Indirect effects of selected independent variables on Employment status of respondents. .

(N=90)

Independent Variables	Direct Effect	Rank	Indirect Effect	Rank	Substantial Indirect Effect		
					1st	2nd	3rd
Socio- Economic:							
(X1). Age	0.075	X	0.1135	XV	0.038(X ₂₀)	0.036(X ₂₃)	0.027(X ₄)
(X2). Occupation	-0.166	XXII	0.2143	III	0.063(X ₁₂)	0.035(X ₁₀)	0.034(X ₂₀)
(X3). Caste	0.060	XI	0.0387	XXI	0.041(X ₂₃)	0.031(X ₁₉)	0.027(X ₁₂)
(X4). Resp. Educa.	-0.074	XIX	0.0997	XVI	0.059(X ₁₂)	0.027(X ₁₁)	0.021(X ₂₀)
(X5). Family Edu status	-0.109	XXI	0.1989	V	0.063(X ₁₂)	0.045(X ₁₁)	0.028(X ₁₆)
(X6). Family type	0.053	XII	0.1907	VII	0.047(X ₇)	0.046(X ₂₀)	0.032(X ₂₃)
(X7). Family size	0.076	IX	0.1456	XI	0.064(X ₂₀)	0.035(X ₂₃)	0.033(X ₆)
(X8). Land	0.029	XIII	0.0763	XIX	0.072(X ₁₂)	0.019(X ₁₉)	0.013(X ₂₃)
(X9). House type	0.014	XIV	0.1378	XIII	0.052(X ₁₁)	0.047(X ₁₆)	0.046(X ₂)
(X10). Herd size	-0.185	XXIII	0.1915	VI	0.044(X ₁₂)	0.031(X ₂)	0.026(X ₂₃)
(X11). Material Possession	0.116	VII	0.0856	XVII	0.055(X ₁₂)	0.048(X ₂₃)	0.036(X ₂₀)
(X12). Gross Income	0.181	III	0.027	XXII	0.043(X ₂₃)	0.042(X ₁₅)	0.035(X ₁₁)
Communication:							
(X13). Inform. Source	0.001	XVI	0.0853	XVIII	0.093(X ₁₂)	0.043(X ₁₅)	0.023(X ₁₁)
((X14). Urban contact	-0.076	XX	0.1273	XIV	0.044(X ₂₃)	0.039(X ₁₁)	0.038(X ₁₂)
(X15). Social Participation	0.162	IV	-0.0306	XXIII	0.047(X ₁₂)	0.019(X ₂₁)	0.012(X ₁₁)
(X16). Family culture	0.092	VIII	0.0624	XX	0.092(X ₁₆)	0.036(X ₁₅)	0.033(X ₁₁)
Socio- Psychological:							
(X17). Attitude in Dairy farm	0.004	XV	0.1664	IX	0.080(X ₂₃)	0.067(X ₂₀)	0.044(X ₁₂)
(X18). Know in AI	-0.037	XVIII	0.1823	VIII	0.063(X ₂₃)	0.047(X ₂₀)	0.038(X ₁₂)
(X19). Know in DW	0.126	VI	0.1646	X	0.102(X ₂₃)	0.051(X ₂₀)	0.041(X ₂₁)
(X20). Attitude in Employ	0.231	I	0.2035	IV	0.108(X ₂₃)	0.044(X ₂₁)	0.028(X ₁₉)
(X21). Attitude in Income generation	0.129	V	0.2430	II	0.087(X ₂₃)	0.078(X ₂₀)	0.023(X ₁₅)
(X22). Decision making	-0.001	XVII	0.1409	XII	0.053(X ₂₀)	0.057(X ₂₁)	0.034(X ₂₃)
(X23). Adoption Index	0.202	II	0.2908	I	0.124(X ₂₀)	0.063(X ₁₉)	0.056(X ₂₁)

Path Diagramme Showing Direct & Indirect effect of Independent variables with Employment status of Respondent



farming (0.1664), Knowledge in deworming (0.1646), Family size (0.1456), Decision making (0.1409), House type (0.1378), Urban contact (0.1273), age (0.1135), respondent education (0.0997), Material possession (0.0856), information sources (0.0853), Land (0.0763), family culture (0.0624), Caste (0.0387), Gross income (0.0270), Social participation (-0.0306) have indirect effect in descending order .

The residual effect has been found to be 0.7690 or in a way 76.90% of the total variabilities have been left unexplained.

Further processing of data revealed that out of 23 exogenous variables, 15 had their largest indirect effect through adoption index which are – age, caste, family type, family size, land, herd size, material possession, gross income, urban contact, attitude in dairy farming, knowledge in AI, knowledge in deworming, attitude towards employment, attitude towards income generation, and decision making pattern. Attitude towards employment steers twelve variables viz. occupation, age, respondent education, family type, family size, material possession, attitude in dairy farming, Knowledge in AI, Knowledge in deworming, attitude towards income generation, decision making and adoption. Caste, Land, attitude towards employment, adoption index exerts their largest indirect effect through Knowledge in deworming. Occupation, caste, respondent education, family education status, land, herd size, material possession, information sources, urban contact, social participation, attitude in dairy farming, knowledge in deworming exerts their largest indirect effect through gross income. Respondent education, family education status, house type, gross income, information sources, urban contact, social participation, and family culture exert their largest indirect effect through material possession. Gross income, information sources, family culture, and attitude towards income generation exert their largest indirect effect through social participation. Variables like- age exerts their largest indirect effect through respondent education and occupation through herd size. Similarly, family education status, house type, exerts their largest indirect effect through family culture. Family size exerts their largest indirect effect through Family type and herd size and house type through occupation. Family type exerts their largest indirect effect

through family size. Thus it is apparent that adoption index, attitude for employment, and gross income not only exerts largest indirect effect on employment status of women livestock farmer but also it influences indirectly in association with a large no. of variables which perform their role through this factors. So, adoption index of respondent, attitude towards employment and gross income have come out to be a key elements, which directly and indirectly helps to develop or promote entrepreneurship of women through dairy farming.

The results of path analysis for Bagdah block livestock owners have been presented in table-4.13. The path coefficient have also been shown in diagram-2

From table 4.13 it is revealed that knowledge about deworming has the largest direct effect (0.2576) on employment status in case of Bagdah block livestock owners followed in descending order by attitude towards employment (0.2553), social participation (0.2042), attitude towards income generation (0.1713), attitude in dairy farming (0.1605), house type (0.1316), adoption index (0.1302), Land (0.1032), age (0.0996), family size (0.0762), Material possession (0.0669), Occupation (0.0498), gross income (0.0335), Family culture (0.0750), Urban contact (0.0320), information sources (-0.0160), Decision making (-0.0820), Caste (-0.1040), Family education status (-0.1340), Respondent education (-0.1610), family type (-0.1860), Herd size (-0.2290), knowledge in AI(-0.2520).

As regards total indirect effects, it is revealed from the table 4.13 that in case of Bagdah block livestock owners, knowledge in AI (0.3968), Adoption behaviour (0.3958), Herd size (0.3398), Family type (0.3192) and material possession (0.2341) are the first five factors which exerts the largest indirect effects.

The residual effects have been found to be 0.6766 or in a way, 67.66% of the total variabilities have been unexplained.

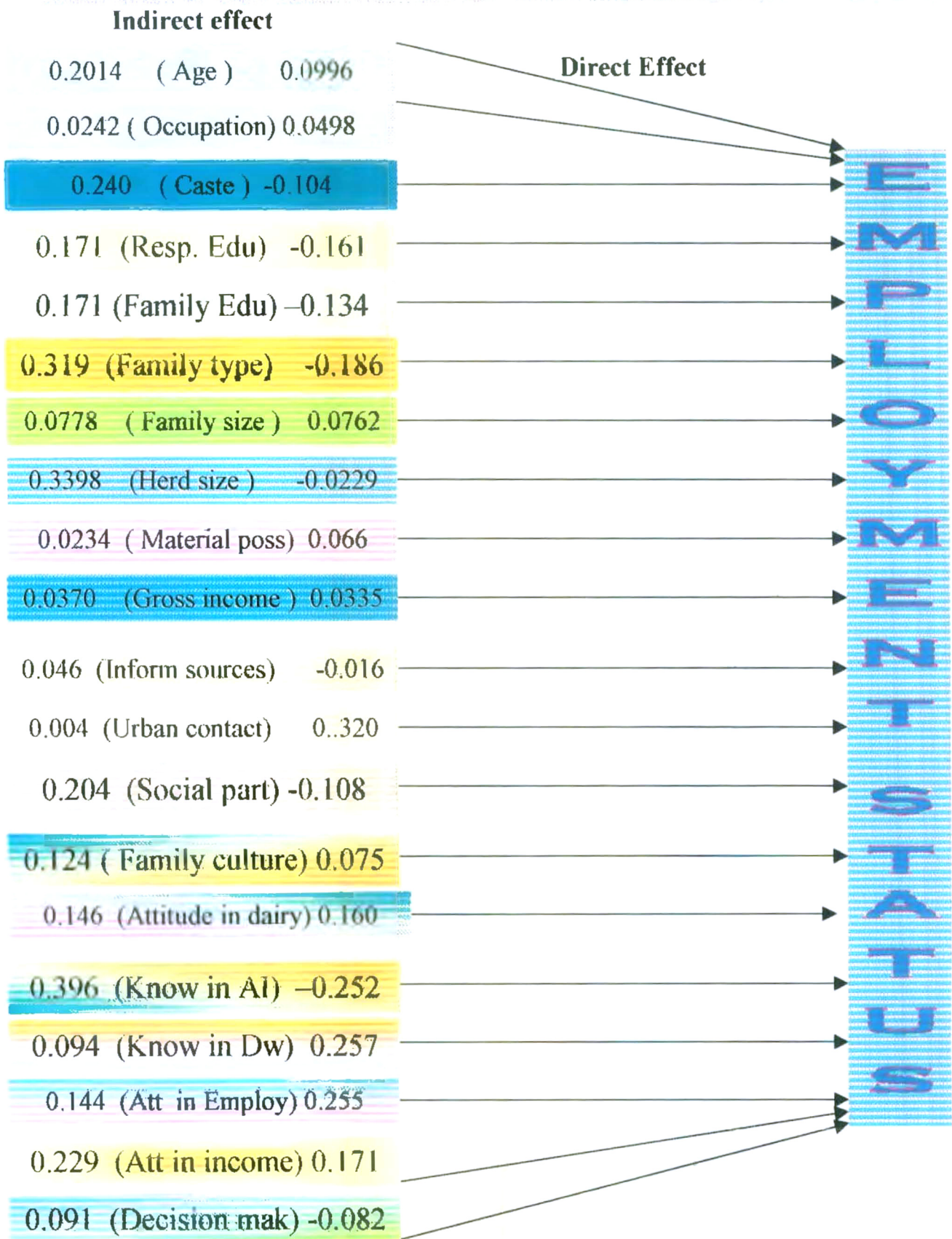
Further processing of data revealed that out of 23 exogenous variables, 9 had their largest indirect effect through knowledge in deworming which are age, caste, land, herd size, urban contact, attitude in dairy farming, knowledge in AI, attitude for employment, attitude for income generation and adoption of dairy farmers. Gross income steers 9

Table-4.13: Path coefficient Showing Direct & Indirect effects of selected independent variables on Employment status of respondents in Bagdah Block

(N=60)

Independent Variables	Direct Effect	Rank	Indirect Effect	Rank	Substantial Indirect Effect		
					1st	2nd	3rd
Socio- Economic:							
(X ₁). Age	0.0996	IX	0.2014	VII	0.0637(X ₁₉)	0.0541(X ₄)	0.0403(X ₂₃)
(X ₂). Occupation	0.0498	XIII	0.0242	XVII	0.0286(X ₂₁)	0.0178(X ₂₃)	0.0141(X ₁₁)
(X ₃). Caste	-0.1040	XVIII	0.240	XXI	0.0563(X ₁₉)	0.0443(X ₂₃)	0.0397(X ₂₁)
(X ₄). Resp. Educa.	-0.1610	XX	0.1717	VIII	0.1159(X ₁₂)	0.0644(X ₆)	0.0441(X ₉)
(X ₅). Family Edu status	-0.1340	XIX	0.1715	IX	0.0988(X ₁₂)	0.0519(X ₉)	0.0385(X ₂₀)
(X ₆). Family type	-0.1860	XXI	0.3192	IV	0.0554(X ₄)	0.0429(X ₇)	0.0411(X ₂₀)
(X ₇). Family size	0.0762	X	0.0778	XV	0.0765(X ₂₀)	0.0409(X ₁₈)	0.0339(X ₄)
(X ₈). Land	0.1032	VIII	0.0238	XVIII	0.0463(X ₁₉)	0.0224(X ₁₅)	0.0192(X ₂₁)
(X ₉). House type	0.1316	VI	0.1174	XII	0.0764(X ₁₂)	0.0369(X ₁₆)	0.0254(X ₁₇)
(X ₁₀). Herd size	-0.2290	XXII	0.3398	III	0.1256(X ₁₂)	0.0987(X ₁₅)	0.0283(X ₁₉)
(X ₁₁). Material Possession	0.0669	XII	0.2341	V	0.0918(X ₁₂)	0.0594(X ₉)	0.0374(X ₂₃)
(X ₁₂). Gross Income	0.3350	XIV	0.0370	XX	0.0512(X ₁₅)	0.0406(X ₈)	0.0299(X ₉)
Communication:							
(X ₁₃). Inform. Source	-0.016	XVI	0.0466	XVI	0.1581(X ₁₂)	0.0306(X ₈)	0.0246(X ₆)
((X ₁₄). Urban contact	0.0320	XV	0.0040	XXII	0.0712(X ₁₉)	0.0392(X ₁₂)	0.0222(X ₈)
(X ₁₅). Social Participation	0.2042	III	-0.108	XXIII	0.0841(X ₁₂)	0.0205(X ₆)	0.0113(X ₈)
(X ₁₆). Family culture	0.0750	XI	0.124	XIX	0.0774(X ₁₂)	0.0645(X ₉)	0.0463(X ₁₅)
Socio- Psychological:							
(X ₁₇). Attitude in Dairy farm	0.1605	V	0.1465	X	0.0714(X ₂₃)	0.0637(X ₁₉)	0.0525(X ₂₀)
(X ₁₈). Know in AI	-0.252	XXIII	0.3968	I	0.1195(X ₁₉)	0.0528(X ₁₇)	0.0418(X ₂₀)
(X ₁₉). Know in DW	0.2576	I	0.0944	XIII	0.0716(X ₂₃)	0.0658(X ₂₁)	0.0398(X ₂₀)
(X ₂₀). Attitude in Employ	0.2553	II	0.1447	XI	0.0606(X ₂₃)	0.0592(X ₂₁)	0.0401(X ₁₉)
(X ₂₁). Attitude in Income generation	0.1713	IV	0.2297	VI	0.0989(X ₁₉)	0.0882(X ₂₀)	0.0556(X ₂₃)
(X ₂₂). Decision making	-0.082	XVII	0.0914	XIV	0.0341(X ₁₈)	0.0267(X ₁₀)	0.0255(X ₅)
(X ₂₃). Adoption Index	0.1302	VII	0.3958	II	0.1416(X ₁₉)	0.1188(X ₂₀)	0.0878(X ₁₇)

Path Diagramme Showing Direct & Indirect effect of Independent variables with Employment status of Bagdah Block Respondent



variables viz. respondent education, family education status, house type, herd size, material possession, information sources, urban contact, social participation, family culture. On the other hand 8 variables viz.- age, occupation, caste, material possession, attitude in dairy farming, knowledge in deworming, attitude for employment and income generation exerts their largest indirect effect through adoption of dairy farmer. Similarly, family education status, family type, family size, attitude in dairy farming, knowledge in deworming, knowledge in AI, attitude for income generation and adoption index exerts their largest indirect effect through attitude for employment status. Land, herd size, gross income, family culture, exerts their largest indirect effect through social participation and respondent education, family education status, material possession, gross income, family culture exerts their largest indirect effect house type. Respondent education, information sources utilization, social participation, exerts their largest indirect effect through family type, whereas family type exerts their largest indirect effect through family size and decision making exerts their indirect effect through family education status. Gross income, information sources, urban contact, social participation, exerts their largest indirect effect through land. Occupation exerts their largest indirect effect through material possession. House type, knowledge in AI and adoption index exerts their largest indirect effect through attitude in dairy farming. Simultaneously family size and decision making exerts their largest indirect effect through knowledge in AI. Age and family size exerts their largest indirect effect through respondent education. Decision-making exerts largest indirect effect through herd size, occupation, caste, land, knowledge in deworming. Attitude towards employment exerts their largest indirect effect through attitude towards income generation. Finally house type exerts largest indirect effect through family culture. The findings suggest that knowledge in deworming, attitude towards employment status, adoption behaviour, and gross income not only exerts their largest direct effect on employment status of women dairy farmer of Bagdah block but also it influences indirectly through large no. of variables which perform their role through this factors. So, above all factors come out to be a key element, which

directly and indirectly helps for entrepreneurship development in case of Bagdah block livestock owners.

The results of path analysis for Gaighata block dairy farmers have been presented in table 4.14. The path coefficients have also been shown in diagram-3.

A perusal of table-4.14 indicated that attitude towards employment (0.5412) has the largest direct effect on employment status in case of Gaighata block sample respondents followed in descending order by information sources (0.4586), family type (0.3391), family size (0.3226), decision making (0.2979), knowledge in deworming (0.2163), social participation (0.1596), knowledge in AI (0.1455), family culture (0.1209), Family education status (0.0885), caste (0.0675), land (0.0533), material possession (0.0101), respondent education (-0.0700), urban contact (-0.127), occupation (-0.138), adoption in dairy farming (-0.291), age (-0.292), attitude towards income generation (-0.357), attitude in dairy farming (-0.373), gross income (-0.385), house type (-0.0810), herd size (-0.1260).

As regards total indirect effects, it is evident from table 4.14 that in case of Gaighata block livestock owners attitude for income generation (0.6836), adoption in dairy farming (0.6683), attitude in dairy farming (0.3557), gross income (0.2835) and family type (0.2619) are the first five factors which exerts their largest indirect effect.

The residual effects have been found to be 0.4191 or in a way 41.91% of the total variabilities have been left unexplained.

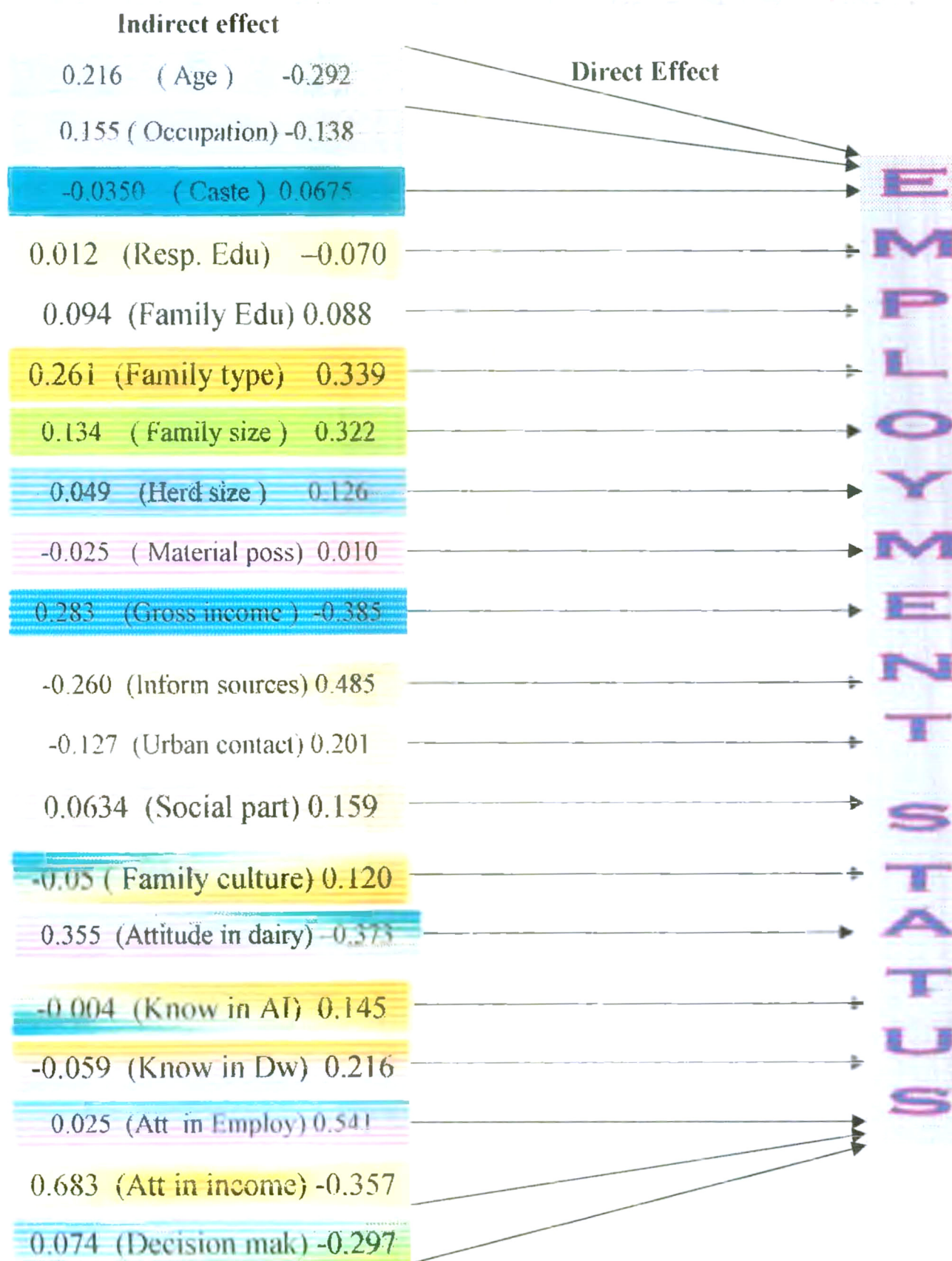
Further a cursory look in the table revealed that out of 23 exogenous variables 13 had their largest indirect effect through attitude for employment which are- family education status, family type, family size, land, information sources, urban contact, social participation, family culture, attitude in dairy farming, knowledge in AI and deworming, attitude towards income generation and decision making. Similarly, herd size steers 8 variables like- age, occupation, family education status, family type, family size, family culture, attitude in dairy farming, decision making. On the other hand, respondent education, house type, herd size, material possession, urban contact, social participation, and attitude

Table-4.14: Path coefficient Showing Direct & Indirect effects of selected independent variables on Employment status of respondents in Gaighata Block.

(N=30)

Independent Variables	Direct Effect	Rank	Indirect Effect	Rank	Substantial Indirect Effect		
					1st	2nd	3rd
Socio- Economic:							
(X ₁). Age	-0.292	XVIII	0.2166	VI	0.1726(X ₁₀)	0.0509(X ₁₄)	0.0474(X ₂₃)
(X ₂). Occupation	-0.138	XVI	0.1559	VII	0.1718(X ₁₀)	0.1063(X ₁₃)	0.0585(X ₁₉)
(X ₃). Caste	0.0675	XI	-0.0350	XXI	0.0598(X ₂₁)	0.0431(X ₂₃)	0.0415(X ₁₉)
(X ₄). Resp. Educa.	-0.070	XIV	0.1202	IX	0.1571(X ₁₃)	0.1307(X ₂₂)	0.1187(X ₁)
(X ₅). Family Edu status	0.0885	X	0.0945	X	0.1114(X ₂₂)	0.0958(X ₂₀)	0.0595(X ₁₀)
(X ₆). Family type	0.3391	III	0.2619	V	0.2582(X ₇)	0.1369(X ₂₀)	0.0602(X ₁₀)
(X ₇). Family size	0.3226	IV	0.1344	VIII	0.2719(X ₆)	0.0779(X ₂₀)	0.0754(X ₁₀)
(X ₈). Land	0.0533	XII	0.0007	XVI I	0.0937(X ₇)	0.0793(X ₆)	0.0784(X ₂₀)
(X ₉). House type	-0.0810	XXII	0.0399	XIII	0.1034(X ₁₇)	0.0811(X ₂₂)	0.0876(X ₁)
(X ₁₀). Herd size	0.1260	XXIII	0.049	XVI	0.0930(X ₁)	0.0661(X ₁₅)	0.625(X ₁₇)
(X ₁₁). Material Possession	0.0101	XIII	-0.0250	XIX	0.0812(X ₁)	0.0815(X ₇)	0.0505(X ₆)
(X ₁₂). Gross Income	-0.385	XXI	0.2835	IV	0.0572(X ₁₅)	0.0493(X ₂₂)	0.0467(X ₁₈)
Communication:							
(X ₁₃). Inform. Source	0.4856	II	-0.260	XX	0.1228(X ₂₀)	0.0867(X ₁₅)	0.0701(X ₂₂)
(X ₁₄). Urban contact	-0.127	XV	0.201	XV	0.1737(X ₂₀)	0.1176(X ₁)	0.0502(X ₂₂)
(X ₁₅). Social Participation	0.1596	VII	0.0634	XII	0.2496(X ₁₃)	0.1401(X ₂₀)	0.0739(X ₁)
(X ₁₆). Family culture	0.1209	IX	-0.050	XXI I	0.1001(X ₁₂)	0.0674(X ₂₂)	0.0551(X ₁₀)
Socio- Psychological:							
(X ₁₇). Attitude in Dairy farm	-0.373	XIX	0.3557	III	0.1415(X ₁₃)	0.1218(X ₁₀)	0.0936(X ₂₀)
(X ₁₈). Know in AI	0.1455	VIII	-0.004	XVIII	0.1928(X ₁₂)	0.1304(X ₂₀)	0.0587(X ₁₅)
(X ₁₉). Know in DW	0.2163	VI	-0.059	XXIII	0.1479(X ₁₃)	0.1217(X ₂₀)	0.0701(X ₂₂)
(X ₂₀). Attitude in Employ	0.5412	I	0.0258	XIV	0.1354(X ₂₂)	0.0858(X ₆)	0.0486(X ₁₉)
(X ₂₁). Attitude in Income generation	-0.357	XVIII	0.6836	I	0.1953(X ₂₀)	0.1886(X ₂₂)	0.0899(X ₁)
(X ₂₂). Decision making	0.2979	V	0.0741	XI	0.2467(X ₂₀)	0.1262(X ₁₀)	0.1081(X ₁₃)
(X ₂₃). Adoption Index	-0.291	XVI	0.6683	II	0.1731(X ₁₃)	0.1135(X ₂₂)	0.0795(X ₁₉)

Path Diagramme Showing Direct & Indirect effect of Independent variables with Employment Status of Gaighata block Respondent



towards income generation, exerts their largest indirect effect through age. Occupation, caste, attitude towards employment, and adoption of dairy farmer exerts largest indirect effect through knowledge in deworming, whereas occupation, respondent education, social participation, attitude in dairy farming, knowledge in deworming, decision making, and adoption behaviour exerts their largest indirect effect through information sources. Similarly, age, caste had largest indirect effect through adoption of dairy farmer but respondent education, family education status, house type, gross income, information sources, urban contact, family culture, knowledge in deworming, attitude towards employment and income generation and adoption of dairy farmer exert largest indirect effect through decision making. Age exerts largest indirect effect through urban contact side-by-side herd size, gross income, information sources, knowledge in AI, exerts their largest indirect effect through social participation. Caste exerts their largest indirect effect through attitude for income generation whereas family size, land, material possession, attitude towards employment exerts largest indirect effect through family type. Family types, land, material possession, have their largest indirect effect through family size. House type and herd size have largest indirect effect through attitude in dairy farming whereas knowledge in AI exerts largest indirect effect through gross income. Finally, gross incomes have largest indirect effect through knowledge in AI.

The findings suggest that attitude towards employment, information sources and decision making have not only largest direct effect on employment status of livestock farmer of Gaighata block but also these factors exert their largest indirect effect through it and come out to be a key element for up gradation of entrepreneurial status of women dairy farmer of Gaighata block.

A summary table of first five important factors on the basis of Path coefficient in relation to the two blocks (Bagdah & Gaighata) under study are provided below for the advantage of the readers for making a comparative assessments about the importance of the factors influencing the Employment status in two different situations. (Table-4.14.a).

Table-4.14 (a): A Summary table of first five important factors on the basis of Path coefficient on Employment status of respondents in Bagdah & Gaighata Block.

Independent variables	Direct Effect	Rank	Factors	Indirect Effect	Rank
Bagdah Block:					
(X ₁₉). Knowledge in Deworming	0.2576	I	(X ₁₈). Know in AI	0.3968	I
(X ₂₀). Attitude towards Employment	0.2553	II	(X ₂₃). Adoption Index	0.3958	II
(X ₁₅). Social Participation	0.2042	III	(X ₁₀). Herd size	0.3398	III
(X ₂₁). Attitude towards Income generation	0.1713	IV	(X ₆). Family type	0.3192	IV
(X ₁₇). Attitude in Dairy farming	0.1605	V	(X ₁₁). Material Possession	0.2341	V
Gaighata Block:					
(X ₂₀). Attitude towards Employment	0.5412	I	(X ₂₁). Attitude towards Income generation	0.6836	I
(X ₁₃). Information Source	0.4856	II	(X ₂₃). Adoption Index	0.6683	II
(X ₆). Family type	0.3391	III	(X ₁₇). Attitude in Dairy farming	0.3557	III
(X ₇). Family size	0.3226	IV	(X ₁₂). Gross Income	0.2835	IV
(X ₂₂). Decision making	0.2979	V	(X ₆). Family type	0.2619	V

Mean \pm SE and results of CD test and 't' test of different Socio-economic, Socio-psychological and communication characteristics in respect of different categories of women livestock owners:

Mean \pm SE and results of CD test and 't' test of different Socio-economic, Socio-psychological and communication characteristics in landless, marginal, small and medium-large categories of landholders for overall respondents with Bagdah and Gaighata block are given in table no. 4.15, 4.16 and table 4.17.

In case of overall respondents of two blocks (table-4.15) highly significant ($P < 0.01$) difference among the different categories of landholders were observed in respect of occupation, material possession, gross income, and urban contact whereas, significant differences ($P < 0.05$) were observed in case of information sources utilization, attitude in dairy farming and knowledge in AI (Thakur, 1975; Gupta & Sohal, 1977; Saini, 1980 Maharaja et.al. 1985, Kunzru et.al 1987, Sivnarayana et.al. 1995))

Occupation of small and medium-large landholders were significantly higher than that of landless land holders and the marginal owners were found to be placed in between these groups, but small and medium-large landholders possess similar values.

Material possession of small and medium-large landholders was significantly higher mean values than that of the landless and marginal landholders.

In respect of gross income the small and medium-large land holders recorded significantly higher mean values than that of landless and marginal category landholders.

The status of urban contact in the landless and marginal category landholders were significantly lowers among the four categories, whereas the small and medium-large owners were superior to the small landholders in respect of these characteristics.

Regarding information sources the mean values of small and medium-large landholders were significantly higher than the landless and marginal landholders.

Table-4.15: Mean \pm SE with CD test of different characteristics of Landless, Marginal, small and Medium-Large livestock owners.

(N=90)

Characteristics	Landless	Marginal	Small	Medium-Large
Socio- Economic:				
(X1). Age	1.38 \pm 0.12	1.32 \pm 0.059	1.25 \pm 0.160	1.67 \pm 0.33
(X2). Occupation	**3.25 ^a \pm 0.47	4.43 ^{ab} \pm 0.15	5.00 ^b \pm 0.00	5.00 ^b \pm 0.00
(X3). Caste	3.06 \pm 0.48	3.40 \pm 0.16	4.00 \pm 0.00	4.00 \pm 0.00
(X4). Resp. Educa.	3.44 \pm 0.51	3.70 \pm 0.22	4.50 \pm 0.42	4.00 \pm 0.00
(X5). Family Edu status	3.68 \pm 0.31	3.79 \pm 0.11	4.06 \pm 0.19	4.31 \pm 0.50
(X6). Family type	1.00 ^a \pm 0.00	1.10 ^{ab} \pm 0.037	1.25 ^b \pm 0.16	1.33 ^b \pm 0.033
(X7). Family size	1.00 \pm 0.00	1.22 \pm 0.052	1.25 \pm 0.16	1.00 \pm 0.00
(X9). House type	2.88 \pm 0.22	3.30 \pm 0.11	3.13 \pm 0.30	3.00 \pm 0.00
(X10). Herd size	1.06 \pm 0.062	1.06 \pm 0.038	1.25 \pm 0.16	1.00 \pm 0.00
(X11). Material Possession	**2.63 ^a \pm 0.27	3.33 ^{ab} \pm .084	3.63 ^b \pm 0.180	3.67 ^b \pm 0.33
(X12). Gross Income	**1.69 ^a \pm 0.12	2.02 ^{ab} \pm .069	2.50 ^{bc} \pm .069	2.67 ^c \pm 0.33
Communication:				
(X13). Inform. Source	*8.88 ^a \pm 0.81	9.02 ^a \pm 0.37	10.75 ^{ab} \pm 0.84	13.33 ^b \pm 2.60
((X14). Urban contact	**3.75 ^a \pm 0.50	3.89 ^a \pm 0.19	6.25 ^b \pm 0.94	4.67 ^{ab} \pm 0.88
(X15). Social Participation	1.06 \pm 0.062	1.08 \pm 0.034	1.25 \pm 0.16	1.00 \pm 0.00
(X16). Family culture	1.44 \pm 0.13	1.27 \pm 0.056	1.38 \pm 0.18	1.00 \pm 0.00
Socio- Psychological:				
(X17). Attitude in Dairy farm	*18.94 ^a \pm 0.80	20.95 ^{ab} \pm .27	21.63 ^b \pm 0.68	21.00 ^{ab} \pm 1.15
(X18). Know in AI	*7.25 \pm 0.23	6.48 \pm 0.15	6.88 \pm 0.52	7.67 \pm 0.33
(X19). Know in DW	4.56 ^{ab} \pm 0.24	4.29 ^a \pm 0.24	5.00 ^{ab} \pm 0.19	5.33 ^b \pm 0.33
(X20). Attitude in Employ	17.31 \pm 0.48	18.08 \pm 0.24	17.50 \pm 0.73	17.00 \pm 1.00
(X21). Attitude in Income generation	24.44 \pm 0.56	24.16 \pm 0.35	25.00 \pm 0.65	25.00 \pm 1.00
(X22). Decision making	3.75 \pm 0.21	3.81 \pm 0.098	4.13 \pm 0.30	4.00 \pm 0.082
(X23). Adoption Index	3.219 \pm 0.188	3.419 \pm 0.169	3.921 \pm 0.220	2.94 \pm 0.333
(X24). Employ Status	3.25 \pm 0.17	3.38 \pm 0.16	3.75 \pm 0.37	3.67 \pm 0.67

NOTE: Mean value having different superscripts differ significantly. Figures in Parenthesis are no of Observation. * P < 0.05 ** P < 0.01.

Considering the attitude in dairy farming the small and medium-large landholders were significantly higher than that of landless and marginal one, whereas in case of knowledge in AI the small and marginal landholders significantly superior than landless and medium-large landholders. So, here it is evident that small and medium-large landholders recorded higher mean values in almost all these characteristics (except knowledge in AI) and the lowest mean values were observed in landless owners.

In Bagdah block (table-4.16) the characteristics showing significant ($P<0.05$) variation among different categories of landholders were herd size, gross income, and knowledge in deworming and highly significant ($P<0.01$) variation was in case of urban contact.

In Bagdah block ($N=60$) in respect of herd size the marginal and small holders recorded significantly higher mean values than the landless and medium-large but both landless and medium-large having overlapping values.

Gross income of small and medium-large landholders was significantly higher than that of landless and marginal landholders.

The status of urban contact in landless and small landholders were significantly higher than that of marginal and medium-large landholders.

Knowledge in deworming of landless and medium-large landholders were significantly higher than that of marginal and small landholders whereas, the landless and medium-large having overlapping value.

In Gaigha block (table-4.17) there have not a single dairy farmer of small and medium-large category within the sample respondent and therefore in this block between landless and marginal category Mean \pm SE with 't' test have done to judge the critical difference between these two groups. In this block ($N=30$) highly significant difference ($P<0.01$) among the landless and marginal landholders were observed in respect of material possession and knowledge in AI whereas for other variables viz. Age, caste, occupation, respondent education, family educational status, family type, family size, house type, herd size, gross income information sources, urban contact, social participation, family culture, attitude in dairy, knowledge in deworming, attitude towards employment and income

Table-4.16: Mean \pm SE with CD test of different characteristics of Landless, Marginal, small and Medium-Large livestock owners in Bagdah Block.

Characteristics	Landless	Marginal	Small	Medium-Large
Socio- Economic:				
(X1). Age	1.00 ^a \pm 0.00	1.33 ^{ab} \pm .069	1.25 ^{ab} \pm 0.16	1.67 ^b \pm 0.33
(X2). Occupation	4.67 \pm 1.33	4.80 \pm 0.11	5.00 \pm 0.00	5.00 \pm 0.00
(X3). Caste	2.33 ^a \pm 1.33	3.63 ^{ab} \pm 0.17	4.00 ^b \pm 0.00	4.00 ^b \pm 0.00
(X4). Resp. Educa.	4.33 \pm 0.67	3.83 \pm 0.26	4.50 \pm 0.42	4.00 \pm 0.00
(X5). Family Edu status	3.67 \pm 0.27	3.95 \pm 0.11	4.06 \pm 0.19	4.31 \pm 0.50
(X6). Family type	1.00 \pm 0.00	1.09 \pm 0.042	1.25 \pm 0.16	1.33 \pm 0.33
(X7). Family size	1.00 \pm 0.00	1.24 \pm 0.063	1.25 \pm 0.16	1.00 \pm 0.00
(X9). House type	2.67 \pm 0.33	3.33 \pm 0.12	3.13 \pm 0.30	3.00 \pm 0.00
(X10). Herd size	*1.00 \pm 0.00	1.02 \pm 0.022	1.25 \pm 0.16	1.00 \pm 0.00
(X11). Material Possession	3.00 \pm 1.00	3.30 \pm 0.11	3.63 \pm 0.18	3.67 \pm 0.33
(X12). Gross Income	*1.67 ^a \pm 0.33	2.13 ^{ab} \pm .067	2.50 ^b \pm .19	2.67 ^b \pm 0.33
Communication:				
(X13). Inform. Source	10.00 ^{ab} \pm .58	9.28 ^a \pm 0.39	10.75 ^{ab} \pm .84	13.33 ^b \pm 2.60
((X14). Urban contact	**5.33 ^{ab} \pm .33	4.09 ^a \pm 0.20	6.25 ^b \pm 0.94	4.67 ^{ab} \pm 0.88
(X15). Social Participation	1.00 \pm 0.00	1.07 \pm 0.036	1.25 \pm 0.16	1.00 \pm 0.00
(X16). Family culture	1.33 \pm 0.33	1.26 \pm 0.065	1.38 \pm 0.18	1.00 \pm 0.00
Socio- Psychological:				
(X17). Attitude in Dairy farm	20.67 \pm 0.88	21.65 \pm 0.28	21.63 \pm 0.68	21.00 \pm 1.15
(X18). Know in AI	8.00 \pm 0.58	6.61 \pm 0.18	6.88 \pm 0.52	7.67 \pm 0.33
(X19). Know in DW	*5.33 \pm 0.33	4.39 \pm 0.14	5.00 \pm 0.19	5.33 \pm 0.33
(X20). Attitude in Employ	19.33 \pm 0.48	18.33 \pm 0.27	17.50 \pm 0.73	17.00 \pm 1.00
(X21). Attitude in Income generation	24.33 \pm 1.86	24.13 \pm 0.38	25.00 \pm 0.65	25.00 \pm 1.00
(X22). Decision making	3.67 \pm 0.33	3.98 \pm 0.091	4.13 \pm 0.30	4.00 \pm 0.00
(X23). Adoption Index	3.137 \pm 0.705	3.489 \pm 0.213	3.921 \pm 0.22	2.947 \pm 0.33
(X24). Employ Status	3.00 \pm 0.58	3.37 \pm 0.19	3.75 \pm 0.37	3.67 \pm 0.67

NOTE: Mean value having different superscripts differ significantly. Figures in Parenthesis are no of Observation. * P < 0.05 ** P < 0.01.

Table- 4.17: Mean \pm SE with t- test of different characteristics of Landless and Marginal livestock owners in Gaighata Block.

Variables	Landless	Marginal	't' -Value	df	Sig (2 tailed)
	Mean \pm SE	Mean \pm SE			
Socio- Economic:					
(X1). Age	1.46 \pm 0.14	1.29 \pm 0.11	0.925	28	0.363
(X2). Occupation	2.92 \pm 0.47	3.41 \pm 0.37	-0.821	28	0.418
(X3). Caste	3.23 \pm 0.52	2.76 \pm 0.30	0.816	28	0.422
(X4). Resp. Educa.	3.23 \pm 0.60	3.35 \pm 0.45	-0.167	28	0.868
(X5). Family Edu status	3.63 \pm 0.37	3.36 \pm 0.23	0.662	28	0.513
(X6). Family type	1.00 \pm 0.00	1.12 \pm 0.081	-1.272	28	0.214
(X7). Family size	1.00 \pm 0.00	1.18 \pm 0.095	-1.612	28	0.118
(X9). House type	2.92 \pm 0.26	3.24 \pm 0.24	-0.880	28	0.387
(X10). Herd size	1.08 \pm 0.077	1.18 \pm 0.13	-0.616	28	0.543
(X11). Material Possession	2.54 \pm 0.27	3.41 \pm 0.12	-3.201	28	0.003**
(X12). Gross Income	1.69 \pm 0.13	1.71 \pm 0.17	-0.061	28	0.952
Communication:					
(X13). Inform. Source	8.62 \pm 0.98	8.29 \pm .58	0.248	28	0.806
((X14). Urban contact	3.38 \pm 0.57	3.35 \pm 0.45	0.044	28	0.965
(X15). Social Participation	1.08 \pm 0.077	1.12 \pm 0.081	-0.357	28	0.724
(X16). Family culture	1.46 \pm 0.14	1.29 \pm 0.11	0.925	28	0.363
Socio- Psychological:					
(X17). Attitude in Dairy	18.54 \pm 0.94	19.06 \pm 0.41	-0.554	28	0.584
(X18). Know in AI	7.08 \pm 0.24	6.12 \pm 0.24	2.773	28	0.010**
(X19). Know in DW	4.38 \pm 0.27	4.00 \pm 0.23	1.103	28	0.279
(X20). Attitude in Employ	16.85 \pm 0.50	17.41 \pm 0.51	-0.775	28	0.445
(X21). Attitude in Income generation	24.46 \pm 0.58	24.24 \pm 0.83	0.210	28	0.835
(X22). Decision making	3.77 \pm 0.26	3.35 \pm 0.24	1.168	28	0.253
(X23). Adoption Index	3.238 \pm 0.187	3.229 \pm 0.248	0.025	28	0.980
(X24). Employ Status	3.31 \pm 0.17	3.41 \pm 0.29	-0.228	28	0.775

NOTE: Figures in Parenthesis are no of Observation. * P < 0.05 ** P < 0.01.

generation, decision making, adoption index and employment status there have no significant mean difference between these two categories of landholders.

In respect of material possession the marginal landholders recorded higher mean values than the landless ones.

The knowledge levels in AI in the landless farmers were significantly higher ($P < 0.01$) than marginal ones.

For overall respondents in small land holders the mean values of some factors like occupation, caste, respondent education, family type, house type, herd size, urban contact, attitude in dairy farming, social participation, attitude towards income generation, and employment, decision making and adoption index are higher than other land holders and mean values of medium-large land holders viz. age, family type, family education status, material possession, gross income, information sources, knowledge in AI and deworming are higher than other land holders. But lowest mean values were observed in almost all characters of landless farmers (Except-age, family culture, knowledge in deworming and AI, attitude towards employment). These facts suggest that the dairy farming was more accentual among the small farmers and it was more likely that the small farmers depend on dairy farming for their livelihood whereas other categories of landholders took up livestock farming as subsidiary means of earning.

In Bagdah block the small land holders recorded higher mean values than other categories in occupation, caste, respondent education, family size, herd size, urban contact, social participation, family culture, knowledge in AI, attitude towards income generation, decision making, adoption in dairy farming, and employment status, whereas the medium-large land holders recorded higher mean values in age, family type, family education status, material possession, gross income, information sources and knowledge in deworming. But in landless and marginal landowners the trend was not consistent in all these characteristics.

This indicates that dairy farming in Bagdah block is more acceptable for small landholders and promotes as main sources of income due to higher mean values of relevant variables.

In Gaighata block the marginal land holders recorded higher mean values in case of occupation, respondents education, family type, family size, house type, herd size, material possession, gross income, information sources, social participation, attitude in dairy farming, and employment status, whereas landless farmer recorded higher mean value in case of age, caste, family education status, urban contact, family culture, knowledge in AI and deworming, attitude towards income generation, decision making and adoption index of dairy farmer. This fact suggests that the landless farmers were more dependent on dairy farming than marginal as knowledge level, decision-making and adoption of dairy technology was higher among this category. But in case of marginal livestock owners the herd size, gross income, information sources, attitude towards employment and overall employment status have higher mean value, which indicate that dependency of dairy farmers on livestock for their livelihood and not as a subsidiary means of earning.

Reason for Unemployment outside the Home by Dairy farmers: A Perusal of table 4.18 depicted that Difficulty to manage home and job together was the major reason for unemployment, which was observed by 93.50% respondents followed by Family members do not permit (90.91%), No free time (77.92%), Place of work at a distance (67.53%), Cultural constraints (55.84%), Children feel neglected (24.68%), No economic necessity (22.08%), Have small children (19.48%), Any other (12.99%), and Not the only member to support family (10.3.9%), Harassment by livestock owners was also reported as a reason for unemployment by 5.19% respondents.

Reason for Employment outside the Home by Dairy farmers: The findings of the table 4.19 focused that Economic necessity was the major cause for employment outside the home by women dairy farmers which was explained by 84.62% sample respondents followed by Have interest (84.02%), As a relief from boredom (76.92%), Maintaining individuality (69.23%), Family member want it (69.22%), Desire to have an independent income (30.76%), Job is readily available (15.38%) and Only source to support the family. Any other was also reported as a reason for employment by 7.69% respondents.

TABLE- 4.18: Ranking & Distribution of Respondents according to their Reason for Un-employment in percentage.

Sl. No	Items	Frequency (N=90)	Percentage (%)	Ranking
1	Cultural constraints	43	55.84	V
2	Place of work is at a distance	52	67.53	IV
3	Harassment by livestock owner	4	5.19	XI
4.	No free time	60	77.92	III
5	No economic necessity	17	22.08	VII
6.	Difficulty to manage home & job together	72	93.50	I
7.	Children feel neglected	19	24.68	VI
8.	Have small child/children	15	19.48	VIII
9.	Not the only member to support the family	8	10.39	X
10	Family member do not permit	70	90.91	II
11	Any other (Please specify)	10	12.99	IX

TABLE-4.19: Ranking & Distribution of respondents according to their Reason for Employment in Percentage.

Sl. No	Items	Frequency (N=90)	Percentage (%)	Ranking
1	Economic necessity	11	84.62	I
2	Ample free time	4	30.77	VII
3	To pass time	4	30.77	VIII
4.	Job is readily available	2	15.38	IX
5	Desire to have an independent income	8	61.54	VI
6.	Have interest	11	84.02	II
7.	As a relief from boredom	10	76.92	III
8.	Maintaining individuality	9	69.23	IV
9.	Only source to support the family	2	15.38	X
10	Family member want it	9	69.23	V
11	Any other (Please specify)	1	7.69	XI

Constraints in Dairy Farming: A cursory look at table 4.20 reveals that high cost of dairy feed was the major constraints which was reported by 96.67% respondents, followed by Lack of credit facility (76.67%), High cost of veterinary medicine (74.44%), Non availability of dairy feed (51.11%), Unremunerative price of milk (47.78%), Knowledge gap about AI (24.44%), Lack of adequate AI facility (20.00%), Lack of marketing facility (15.56%) and Non availability of veterinary service (15.55%), Lack of transportation facility was also reported as a constraints by 13.33% respondents.

From the correlation studies, the following inferences may be drawn in respect to the independent variables:

Age:

Age had significant association with the employment status of sample livestock owners in Bagdah block and for overall respondents, but not in Gaighata block.

John (1974), Hundal (1976) reported that age did not affect the production of dairy farmers. Kapse (1976) found a positive correlation between age and with production level of dairy animals. Lalitha (2000) observed that farmwomen who help their family had medium age group.

Occupation:

Occupation had no significant association with the overall employment status in both Bagdah and Gaighata block and for overall respondents.

Asha (1983) concluded that modernization had taken away the traditional occupation from women and made more unemployed women.

Caste:

Caste had no significant association with the employment status of respondent taken in this study in both the block and in overall respondents.

Malathi (1979) reported that women's participation in agricultural operation varies on the basis of caste. Kanawar & Guleria (1988) found that female worker per farm/hectar was highest in SC group. Kumar (1999) found that farmers belong to SC/ST and OBC category need to be encouraged for becoming member of VDC.

TABLE 4.20: Percentage distribution & Ranking of constraints in Dairy farming perceived by the Respondents.

SL. NO	ITEMS	FREQUENCY (N=90)	PERCENTAGE (%)	RANKING
1	High cost of dairy feed	87	96.67	I
2	Non availability of dairy feed	46	51.11	IV
3	Unremunerative price of milk	43	47.78	V
4.	Lack of transportation facility	12	13.33	X
5	Lack of marketing facility	14	15.56	VIII
6.	Lack of adequate AI facility	18	20.00	VII
7.	Lack of credit facility	69	76.67	II
8.	High cost of vety medicines	67	74.44	III
9.	Non availability of vety services	14	15.55	IX
10	Knowledge gap about AI	22	24.44	VI

Respondent education:

Respondent education had no significant association with the employment status of women dairy farmer taken in this study in both Bagdah and Gaighat block.

Kapse (1976) found no significant relationship between educational level of cattle owners and production of dairy animals.

Family education status:

Family education status had no significant association with the employment status of women dairy farmer taken in this study in both the block.

Malathi (1979) reported that relationship between family education status and women participation in agricultural operation in varied.

Family type:

Family type had significant association with the employment status of livestock owners in Gaighata block and in overall respondents but not in Bagdah block.

Das et.al. (2002) and Mahipal (1983) found a significant association between family type and women employment through dairy farm .

Family size:

Family size had significant association with the employment status of women dairy farmer for overall respondents and in Gaighat block but not in Bagdah block.

Kapse (1976) found a positive correlation between family size and production of dairy animals.

Land:

Land had no significant association with the employment status of women dairy farmer taken in this study in both the block.

Rao (1976) found a negative correlation between rural women's participation in agricultural task and land holding. Das (2001) opined the same regarding the influence of factors toward milk production.

Herd Size:

Herd size had no significant association with the employment status of respondent in both the block.

Kapse (1976) found a significant relationship between herd size and production of dairy animals.

Material possession:

Material possession: had significant association with the employment status of respondent in Bagdah block but not in Gaighata block.

Bose (1964) found that material possession has some association with the acceptance of agricultural technology.

Gross Income:

Gross Income had significant association with the employment status of respondent in Bagdah block and in overall respondents.

Rao (1981), Desai & Patel (1974) and Saini et.al. (1981) reported significant relation of gross income and dairy farming.

Information sources:

Information sources had no significant relationship with the employment status of livestock owners in both the block.

Sharma (1979), Bhuiyan (1988), reported non-significant relation between the patterns of informal sources utilization for raising cross breed cattle.

Social participation:

Social participation had no significant relationship with the employment status of dairy farmer in both the block.

Bhuiyan (1988) concluded that participation of extension related activities appeared to be nil among rural women. Mishra (2003) reported that social participation is less in farmers.

Family culture:

Family culture had no significant association with the employment status of dairy farmers in both the block.

Attitude in Dairy Farming:

Attitude in Dairy Farming had significant association with the employment status of sample livestock owners in Bagdah block but no significant association in Gaighata block and for overall respondent.

Singh (1975), Gupta (1976), Singh (1978) found a positive and significant relationship of attitude in dairy farming and farm practices.

Hazarika (1983), Sharma (1994) had same opinion regarding attitude in dairy farming and milk marketing.

Knowledge in Deworming & AI:

Knowledge in AI had no significant association with employment status of dairy farmer in both the block but knowledge in deworming had significant association with employment status in Bagdah block and in overall respondents.

Gill & Singh (1977), Rath (1977) opined that knowledge inbreeding was low in Dairy farmers. Sohal & Tyagi (1978), Mahipal (1976) studied the knowledge in health care, which was low but significantly related with dairy farming.

Attitude towards Employment:

This had significant association with the employment status taken in this studying both the block.

Desai & Patel (1974), Birader(1986), Agarwal (1987) found a positive and significant association between employment status and attitude towards employment. Batish & Oberoi (1998) also opined that farming activities were performed by women in a significant manner. Sudharani (2000) revealed that women employment through dairy farming was very much significant.

Attitude towards Income Generation:

Attitude for income generation had significant relationship with the employment status of dairy farmers in Bagdah block and overall respondent but not in Gaighata block.

Singh & Patel (1983), Verma & Pant (1978) concluded that income generation through dairy farming was significantly related with employment status of respondents. Hirekanagonader et.al. (1988) Suggested the significant relation towards income generation and employment status of dairy farmers.

Decision Making:

This had significant association with employment status taken in this study in Gaighata block, but no significant association in Bagdah block and overall respondents.

Ghosh (1987), Saraswati et.al (1987) Seema (1980) found a significant association with employment status and decision making.

Adoption of dairy farmers:

Adoption in dairy farming had significant relationship with the employment status of respondents taken in this study in both Bagdah and Gaighata block.

Kunzru et.al. (1989b), Raju (1992) reported a significant association with dairy farming and adoption of dairy farmer. Bakshi (1970), Mahipal (1983) also found a significant association between adoption in dairy farming and employment through dairy farming.

CHAPTER- V

SUMMARY AND CONCLUSION

Summary & Conclusion

This chapter deals with the summary of the findings, conclusions, implications and recommendations of the study.

5.1. SUMMARY:

Agriculture and animal husbandry are the two main occupational support systems on which the entire social and economic structure of the village life anchors in India. Apart from land and irrigation livestock is the largest resources in our rural economy, which has the highest potential for becoming the most effective instruments to fight under-employment, unemployment and semi employment in rural areas, especially for rural women. Occupationally, they not only provide seasonal and part time employment but also full time employment for a large proportion of rural and semi urban population. Dairying activities, as an extension of domestic activities, are considered and recognized as a highly potential alternative to provide employment opportunities and additional income generation through augmenting the livestock production. There is considerable evidence to show that livestock raising and management related activities still continue predominantly to be rural women's responsibility and domain. But her work in this sector is normally time consuming, inefficient and of low productivity. Therefore, a number of improved technologies have been evolved by the scientist, which if adopted, will not only generate employment and income but also would be time, cost and energy efficient. They, apart from being employment generating, also provide ready and regular cash returns to rural households to meet their day-to-day requirements. More over, provision for marketing of milk through network of dairy cooperatives by milk unions has also encouraged dairy farming in rural areas. Non-availability of realistic information on women and technological development provides a compulsive logic for generating empirical data on the extent to which adoption of these available and improved dairy farm technologies in dairy cooperative system have contributed towards generating employment and income for rural

households. The present study is based on these perspectives framed with following objectives:

OBJECTIVE OF THE STUDY:

A. General Objective:

The general objective of the study is to find out the entrepreneurial status of women through dairy farming in relation to some Socio-economic, Socio-psychological, & Communication characteristics.

B. Specific Objectives:

1. To study the Socio-economic, Socio-psychological & communication profiles of the respondents in relation to dairy farming.
2. To enumerate various dairy farming profiles of rural women i.e. Housing, Feeding, Breeding, Health care, Production, Management & marketing practices.
3. To find out the employment status and Income generation of farmwomen through dairy farming & their role in entrepreneurship development.
4. To find out the extent of influence of women entrepreneurship development through dairy farming.
5. To study the Knowledge, Attitude, adoption and decision-making pattern of respondents towards dairy farming & their relationship with entrepreneurship development through dairy farming.

The study was conducted in North 24 Parganas district of West Bengal. The data were collected through personal interview scheduled administered on randomly selected 90 rural women from purposively selected 2 blocks (30 from Gaighata and 60 from Bagdah block) covered under Ichamoti Cooperative milk producers union limited (ICMPUL). 10 women farmer, 5 from each block was selected who are not under the ICMPUL.

Dependent variables- **Employment status** of rural women was measured by the developing schedule.

The twenty-three independent variables selected for the study were grouped as follows:

Socio-Economic:

Age, occupation, caste, education of the livestock owners, family educational status, family type, family size, land holding, house type, livestock holding, material possession, herd size, Gross Income.

Communication:

Urban contact, information sources utilization, social participation, and family culture.

Socio-Psychological:

Attitude towards dairy farming, knowledge in AI, knowledge in deworming, adoption index in dairy farming, attitude towards employment status, attitude towards income generation, and decision making pattern.

All the variables were measured by using available scales except employment status of rural women for which schedule developed by the researchers for the study.

Data thus generated were analyzed by different statistical methods including students 't' test, analysis of variance, correlation analysis, Mean \pm SE, CD test and path analysis. In addition, frequency distribution and percentage were also calculated for better interpretation of the results.

The important findings of the study are as follows:

1. Greater number of livestock owners belongs to the marginal (70%) category and majority of respondents (66.67%) were the age group of 20-40 years. All the sample respondents (100%) are Hindus by religion. Majority (88.89%) of the respondents are married. Larger no. (73.33%) of women dairy farmers depend on agriculture and A.H. Majority (66.67%) of the respondents belong to middle income group between Rs. 2001-5000/- per month. Among the respondents majority (93.33%) have livestock holding size of 5 cattle unit (Small farmer). It can also be observed that cultivation (65.56%) was the main occupation of the

farmer. It is again revealed that majority of the respondents on overall basis belong to agricultural caste (58.89%), It is clear that 34.40% respondents have high school education.

The findings shows that majority (90%) of the respondents belongs to nuclear family It can again be seen that majority of the farmers (82.22%) have small family size (Upto 5 members). A detailed look indicate that majority (70%) of the dairy farmer have land upto one hectare (Marginal). It is also reported that almost 73.33% of respondents have electricity in their house. Majority of respondents (46.66%) have Pucca house. Among the respondents 70% have rural family culture. Majority of the respondents (91.11%) belong to member of one organization. It can also be observed from the table that majority of livestock owners (67.78%) have not taken any extension training related to dairy farming. Although on an overall basis similar no (36.67%) of respondents read newspaper in less than once in a week and never. Majority of respondents (44.40%) have chair in their family. The findings also reported that majority of the respondents (55.56%) have taken decision jointly.

2. A perusal of dairy farming profiles of respondents reported that majority of the women dairy farmer (61.12%) have been rearing cattle for more than 5 years. Among the respondents 63.33% obtained round the year production. In the present study conventional dairy barn system was the predominant (92.2%) farming system among the respondents. During housing majority of respondents (97.78%) housed their cattle in single row system. Regarding farm communication and electricity almost all (96.67%) and (77.78%) farmers have good communication system and electricity in her farm. Among the respondents majority (92.22%) reared their cattle in conventional system. A detailed look reveals that majority of respondents (55.56%) in conventional system and 4.44% in loose housing system fed their cattle twice a day. All the farmers used water from tube well (100%) for drinking in both the system. It is further seen that almost all farmers (93.33%) seemed that feed cost is key factor in dairy farming. It is evident that majority of respondents (41.11% & 32.22%) purchased

their cattle from 'private farm' and 'private farm' and 'local market'. It is also interesting to mention here that all respondent (100%) have used AI for breeding and opined that AI facility is locally available. Majority (56.67%) of the respondents once used AI for successful pregnancy. On the other hand majority of the respondents (87.78%) opined that mortality in AI was minimum. The data also shows that majority of the livestock owners (90%) have done AI in cattle within the age group of 18-24 months. Further, almost all the respondents (95.56%) reported that there have no prejudices in their locality regarding AI concept. In the study area majority of the respondents (71.11%) obtained average milk/day from their cattle within 1-10 Kg. A cursory look also indicated that majority of the farmers (57.78%) obtained production from their cow at the age of 18-24 months. The data again indicated that almost all the respondent (96.67%) sold their milk to milk cooperative at a price of Rs. 8-10/- per Kg. Among the sample respondents 54.44% farmers have positive opinion regarding remunerative price of milk. It is again observed that majority of women farmer (57.78%) kept 1-1.5 Kg. milk/day for their consumption. It is again reported that almost all the farmers (95.56%) sold their milk upto 30 days/month. Among the overall sample, only small no (7.78%) of farmers sold milk products from milk. It is interesting to note that majority (56.67%) of the respondents have utilized their cow dung in terms of Cow dung cake and fertilizer. It is also pointed out that majority of the women dairy farmers (88.89%) sold their cow dung cake, who made cow-dung cake from cow-dung. Their have almost equal no. (5.56%) of respondents who earned money i.e. Rs. 50-250/- and Rs. 251-50/- per month from cow dung cake. A cursory look explains that majority of respondents (60%) treated their cattle by qualified Veterinary doctor. Almost all the respondents (94.44%) vaccinated their cattle against infectious diseases. FMD was the predominant disease encountered by majority of respondents (48.89%), as the cause of mortality reported by majority of respondents (94.40%) was outbreak of disease. It can further be seen that majority of farmer (60%) have provided dewormer and vitamin supplement as periodic preventive dose for better production in cattle.

Most of the respondents (81.11%) sold their milk to local milk cooperative. The data again indicated that majority (73.33%) of the farmer utilized their earned money in livelihood and reinvestment. Finally the table focused that almost all the respondents (98.89%) obtained their payment in every ten days interval, which is very much indicative of their cooperative dependency as this is the payment mode of milk cooperative.

3. The facts suggest that joint family of dairy farmer having more than 5 member have better and significant employment status than the nuclear family having upto 5 members in the family.

4. There was significant relationship ($P < 0.05$) between employment status and Knowledge in Deworming in case of overall respondents.

5. The mean values of low-income group (Below Rs. 2000/-) respondents significantly differ than high income group (Above Rs. 5001/-) dairy farmers considering their employment status.

6. Mean values of Kutcha house resident significantly varies than Pucca house resident and mixed house resident.

7. In case of some characteristics like occupation, land, gross income, attitude in dairy farming and decision making the mean values of the Bagdah block sample women dairy farmers were found to be significantly highest ($P < 0.01$) than those of Gaighata block sample livestock owners.

8. Mean scores obtained by the member Cooperative of Bagdah block in respect of variables namely-occupation, Material possession, Social participation, attitude in dairy farming, Knowledge in AI, Decision making and adoption behaviour found to be significantly ($P < 0.01$) higher than their Non-member counterparts.

9. The mean scores obtained by the member cooperative of Gaighata block in respect of variables namely- Respondent education, Social participation, Knowledge in AI, Knowledge in deworming, and adoption behaviour were found to be significantly higher ($P < 0.01$) than their Non- cooperative member counterparts.

10. The Employment status of sample respondents had to depend mostly on knowledge in deworming, attitude towards employment,

attitude towards income generation, adoption index of dairy farmer, gross income and family type mainly.

11. The Bagdah block sample livestock owners had to depend mostly on gross income, Knowledge in Deworming, attitude towards employment, attitude towards income generation and adoption of dairy farmers regarding their employment status.

12. The selected Gaighata block sample dairy farmers had obvious better family type, family size, better attitude towards employment, better adoption of dairy farmers and efficient decision making power regarding their employment status.

13. Employment status of livestock owners had to depend mostly on gross income, material possession, attitude towards dairy farming, knowledge in deworming, attitude towards employment, attitude in income generation and adoption of dairy farmers.

14. Attitude towards employment (0.231) has the largest direct effect on employment status of sample respondents followed in descending order by adoption index (0.202), gross income (0.181), social participation (0.162), attitude towards income generation (0.129), Knowledge in deworming (0.126) and others.

15. In case of women livestock keepers adoption Index (0.2908), occupation (0.2143), attitude towards employment (0.2035), family education status (0.1989), are the first five factors which exerts the largest indirect effects.

16. Adoption index of respondent, attitude towards employment and gross income have come out to be a key elements, which directly and indirectly helps to develop or promote entrepreneurship of women through dairy farming.

17. It is revealed that knowledge about deworming has the largest direct effect (0.2576) on employment status in case of Bagdah block livestock owners

18. In case of Bagdah block livestock owners, knowledge in AI (0.3968), Adoption behaviour (0.3958), Herd size (0.3398), Family type (0.3192) and material possession (0.2341) are the first five factors which exerts the largest indirect effects.

19. The findings suggest that knowledge in deworming, attitude towards employment status, adoption behaviour, and gross income not only exerts their largest direct effect on employment status of women dairy farmer of Bagdah block but also it influences indirectly through large no. of variables which perform their role through this factors. So, above all factors come out to be a key element, which directly and indirectly helps for entrepreneurship development in case of Bagdah block livestock owners.

20. Attitude towards employment (0.5412) has the largest direct effect on employment status in case of Gaighata block sample respondents.

21. In case of Gaighata block livestock owners attitude towards income generation (0.6836), adoption in dairy farming (0.6683), attitude in dairy farming (0.3557), gross income (0.2835) and family type (0.2619) are the first five factors which exerts their largest indirect effect.

22. Attitude towards employment, information sources and decision making have not only largest direct effect on employment status of livestock farmer of Gaighata block but also these factors exert their largest indirect effect through it and come out to be a key element for up gradation of entrepreneurial status of women dairy farmer of Gaighata block.

23. The dairy farming was more accentual among the small farmers and it was more likely that the small farmers depend on dairy farming for their livelihood whereas other categories of landholders took up livestock farming as subsidiary means of earning.

24. Dairy farming in Bagdah block is more acceptable for small landholders and promotes as main sources of income due to higher mean values of relevant variables.

25. The landless farmers were more dependent on dairy farming than marginal as knowledge level, decision-making and adoption of dairy technology was higher among this category. But in case of marginal livestock owners the herd size, gross income, information sources, attitude towards employment and overall employment status have higher mean value, which indicate that dependency of dairy farmers on livestock for their livelihood and not as a subsidiary means of earning.

26. Difficulty to manage home and job together was the major reason for unemployment among the livestock owners.

27. Economic necessity was encountered as the major cause for employment outside the home by women dairy farmers.

28. High cost of dairy feed was recorded as the principal constraints in dairy farming in the study area.

29. Age had significant association with the employment status of sample livestock owners in Bagdah block and for overall respondents, but not in Gaighata block. Family type had significant association with the employment status of livestock owners in Gaighata block and in overall respondents but not in Bagdah block. Family size had significant association with the employment status of women dairy farmer for overall respondents and in Gaighat block but not in Bagdah block. Material possession had significant association with the employment status of respondent in Bagdah block but not in Gaighata block. Gross Income had significant association with the employment status of respondent in Bagdah block and in overall respondents. Attitude in Dairy Farming had significant association with the employment status of sample livestock owners in Bagdah block but no significant association in Gaighata block and for overall respondent. Attitude towards Employment had significant association with the employment status taken in this studying both the block. Attitude towards income generation had significant relationship with the employment status of dairy farmers in Bagdah block and overall respondent but not in Gaighata block. Decision Making had significant association with employment status taken in this study in Gaighata block, but no significant association in Bagdah block and overall respondents. Adoption in dairy farming had significant relationship with the employment status of respondents taken in this study in both Bagdah and Gaighata block. Knowledge in deworming had significant association with employment status in Bagdah block and in overall respondents.

30. Occupation had no significant association with the overall employment status in both Bagdah and Gaighata block and for overall

respondents. Caste had no significant association with the employment status of respondent taken in this study in both the block and in overall respondents. Education of respondent had no significant association with the employment status of women dairy farmer taken in this study in both Bagdah and Gaighat block. Family education status had no significant association with the employment status of women dairy farmer taken in this study in both the block. Land had no significant association with the employment status of women dairy farmer taken in this study in both the block. Herd size had no significant association with the employment status of respondent in both the block. Information sources had no significant relationship with the employment status of livestock owners in both the block. Social participation had no significant relationship with the employment status of dairy farmer in both the block. Family culture had no significant association with the employment status of dairy farmers in both the block. Knowledge in AI had no significant association with employment status of dairy farmer in both the block.

Conclusion

1. Greater number of livestock owners belongs to the marginal category and majority of respondents were the age group of 20-40 years. All the sample respondents are Hindus by religion. Majority of the respondents are married. Larger no of women dairy farmers depends on agriculture and A.H. Majority of the respondents belongs to middle income group between Rs. 2001-5000/- per month. Among the respondents majority have a livestock holding size of 5 cattle unit (Small farmer). It can also observe that cultivation was the main occupation of the farmer. It is again revealed that majority of the respondents on overall basis belongs to agricultural caste. It is clear that 34.40% respondents have high school education.

The findings shows that majority of the respondents belongs to nuclear family. It can again be seen that majority of the farmers have small family size (Upto 5 members). A detailed look indicate that majority of the dairy farmer have land upto one hectare (Marginal). It is also reported that majority of respondents have electricity arrangement in their house. Majority of respondents have Pucca house. Among the respondents 70% have rural family culture. Majority of the respondents belongs to member of one organization. It can also be observed from the table that majority of livestock owners have not taken any extension training related to dairy farming. Although on an overall basis similar no of respondents read newspaper in less than once in a week and never. Majority of respondents have chair in their family. The findings also reported that majority of the respondents have taken decision jointly.

2. A perusal of dairy farming profiles of respondents reported that majority of the women dairy farmer have been rearing cattle for more than 5 years. Among the respondents 63.33% obtained round the year production. In the present study conventional dairy barn system was the predominant farming system among the respondents. During housing majority of respondents housed their cattle in single row

system. Regarding farm communication and electricity almost all farmers have good communication system and electricity in her farm. Among the respondents majority reared their cattle in conventional system. A detailed look reveals that majority of respondents in conventional system and very small in loose housing system fed their cattle twice a day. All the farmers used water from tube well for drinking in both the system. It is further seen that almost all farmers seemed that feed cost is key factor in dairy farming. It is evident that majority of respondents purchased their cattle from private farm and private farm and local market. It is also interesting to mention here that all respondent have used AI for breeding and opined that AI facility is locally available. Majority of the respondents once used AI for successful pregnancy. On the other hand majority of the respondents opined that mortality in AI was minimum. The data also shows that majority of the livestock owners have done AI in cattle within the age group of 18-24 months. Further, almost all the respondents reported that there have no prejudices in their locality regarding AI concept. In the study area majority of the respondents obtained average milk/day from their cattle within 1-10 Kg. A cursory look also indicated that majority of the farmers obtained production from their cow at the age of 18-24 months. The data again indicated that almost all the respondent sold their milk to milk cooperative at a price of Rs. 8-10/- per Kg. Among the sample respondents more than 50% farmers have positive opinion regarding remunerative price of milk. It can again observed that majority of women farmer kept 1-1.5 Kg. milk/day for their consumption. It is again reported that almost all the farmers sold their milk upto 30 days/month. Among the overall sample, only small no. of farmers sold milk products from milk. It is interesting to note that majority of the respondents have utilized their cow dung in terms of Cow dung cake and fertilizer. It is also pointed out in the table that majority of the women dairy farmers sold their cow dung cake, who made cow-dung cake from cow-dung. Their have almost equal no. of respondents who earned money i.e. Rs. 50-250/- and Rs. 251-50/- per month from cow dung cake. A cursory look explains that majority of

respondents treated their cattle by qualified veterinary doctor. Almost all the respondents vaccinated their cattle against infectious diseases. FMD was the predominant disease encountered by majority of respondents, whereas, the cause of mortality reported by majority of respondents was outbreak of disease. It can further be seen that majority of farmer have been provide dewormer and vitamin supplement as periodic preventive dose for better production in cattle. Most of the respondents sold their milk to local milk cooperative. The data again indicated that majority of the farmer utilized their earned money in livelihood and reinvestment. Finally the table focused that almost all the respondents obtained their payment in every ten days interval, which is very much indicative of their cooperative dependency as this is the payment mode of milk cooperative.

3.The facts suggests that joint family of dairy farmer having more than 5 member have better and significant employment status than the nuclear family having upto 5 members in the family.

4.There was significant relationship ($P < 0.05$) between employment status and Knowledge in Deworming in case of overall respondents.

5.The mean values of low-income group (Below Rs. 2000/-) respondents significantly differ than high income group (Above Rs. 5001/-) dairy farmers considering their employment status.

6. Mean values of Kutcha house resident significantly varies than Pucca house resident and mixed house resident.

7. In case of some characteristics like occupation, land, gross income, attitude in dairy farming and decision making the mean values of the Bagdah block sample women dairy farmers were found to be significantly higher ($P < 0.01$) than those of Gaighata block sample livestock owners.

8. Mean scores obtained by the member Cooperative of Bagdah block in respect of variables namely-occupation, Material possession, Social participation, attitude in dairy farming, Knowledge in AI, Decision making and adoption behaviour found to be significantly ($P < 0.01$) higher than their Non-member counterparts.

9. The mean scores obtained by the member cooperative of Gaighata block in respect of variables namely- Respondent education, Social participation, Knowledge in AI, Knowledge in deworming, and adoption behaviour were found to be significantly higher ($P < 0.01$) than their Non-cooperative member counterparts.

10. The Employment status of sample respondents had to depend mostly on knowledge in deworming, attitude towards employment, attitude towards income generation, adoption index of dairy farmer, gross income and family type mainly.

11. The Bagdah block sample livestock owners had to depend mostly on gross income, Knowledge in Deworming, attitude towards employment, attitude towards income generation and adoption of dairy farmers regarding their employment status.

12. The selected Gaighata block sample dairy farmers had obvious better family type, family size, better attitude towards employment, better adoption of dairy farmers and efficient decision making power regarding their employment status.

13. Employment status of livestock owners had to depend mostly on gross income, material possession, attitude towards dairy farming, knowledge in deworming, attitude towards employment, attitude towards income generation and adoption of dairy farmers.

14. Attitude towards employment (0.231) has the largest direct effect on employment status of sample respondents followed in descending order by adoption index (0.202), gross income (0.181), social participation (0.162), attitude towards income generation (0.129), Knowledge in deworming (0.126) and others.

15. In case of women livestock keepers adoption Index (0.2908), occupation (0.2143), attitude towards employment (0.2035), family education status (0.1989), are the first five factors which exerts the largest indirect effects.

16. Adoption index of respondent, attitude towards employment and gross income have come out to be a key elements, which directly and indirectly helps to develop or promote entrepreneurship of women through dairy farming.

17. It is revealed that knowledge about deworming has the largest direct effect (0.2576) on employment status in case of Bagdah block livestock owners

18. In case of Bagdah block livestock owners, knowledge in AI (0.3968), Adoption behaviour (0.3958), Herd size (0.3398), Family type (0.3192) and material possession (0.2341) are the first five factors which exerts the largest indirect effects.

19. The findings suggest that knowledge in deworming, attitude towards employment status, adoption behaviour, and gross income not only exerts their largest direct effect on employment status of women dairy farmer of Bagdah block but also it influences indirectly through large no. of variables which perform their role through this factors. So, above all factors come out to be a key element, which directly and indirectly helps for entrepreneurship development in case of Bagdah block livestock owners.

20. Attitude towards employment (0.5412) has the largest direct effect on employment status in case of Gaighata block sample respondents.

21. In case of Gaighata block livestock owners attitude towards income generation (0.6836), adoption in dairy farming (0.6683), attitude in dairy farming (0.3557), gross income (0.2835) and family type (0.2619) are the first five factors which exerts their largest indirect effect.

22. Attitude towards employment, information sources and decision making have not only largest direct effect on employment status of livestock farmer of Gaighata block but also these factors exert their largest indirect effect through it and come out to be a key element for up gradation of entrepreneurial status of women dairy farmer of Gaighata block.

23. The dairy farming was more accentual among the small farmers and it was more likely that the small farmers depend on dairy farming for their livelihood whereas other categories of landholders took up livestock farming as subsidiary means of earning.

24. Dairy farming in Bagdah block is more acceptable for small landholders and promotes as main sources of income due to higher mean values of relevant variables.

25. The landless farmers were more dependent on dairy farming than marginal as knowledge level, decision-making and adoption of dairy technology was higher among this category. But in case of marginal livestock owners the herd size, gross income, information sources, attitude towards employment and overall employment status have higher mean value, which indicate that dependency of dairy farmers on livestock for their livelihood and not as a subsidiary means of earning.

26. Difficulty to manage home and job together was the major reason for unemployment among the livestock owners.

27. Economic necessity was encountered as the major cause for employment outside the home by women dairy farmers.

28. High cost of dairy feed was recorded as the principal constraints in dairy farming in the study area.

29. Age had significant association with the employment status of sample livestock owners in Bagdah block and for overall respondents, but not in Gaighata block. Family type had significant association with the employment status of livestock owners in Gaighata block and in overall respondents but not in Bagdah block. Family size had significant association with the employment status of women dairy farmer for overall respondents and in Gaighat block but not in Bagdah block. Material possession had significant association with the employment status of respondent in Bagdah block but not in Gaighata block. Gross Income had significant association with the employment status of respondent in Bagdah block and in overall respondents. Attitude in Dairy Farming had significant association with the employment status of sample livestock owners in Bagdah block but no significant association in Gaighata block and for overall respondent. Attitude towards Employment had significant association with the employment status taken in this studying both the block. Attitude towards income generation had significant relationship with the employment status of dairy farmers in Bagdah block and overall respondent but not in Gaighata block. Decision Making had significant association with employment status taken in this study in Gaighata block, but no significant association in Bagdah block and overall

respondents. Adoption in dairy farming had significant relationship with the employment status of respondents taken in this study in both Bagdah and Gaighata block. Knowledge in deworming had significant association with employment status in Bagdah block and in overall respondents.

30. Occupation had no significant association with the overall employment status in both Bagdah and Gaighata block and for overall respondents. Caste had no significant association with the employment status of respondent taken in this study in both the block and in overall respondents. Education of respondent had no significant association with the employment status of women dairy farmer taken in this study in both Bagdah and Gaighat block. Family education status had no significant association with the employment status of women dairy farmer taken in this study in both the block. Land had no significant association with the employment status of women dairy farmer taken in this study in both the block. Herd size had no significant association with the employment status of respondent in both the block. Information sources had no significant relationship with the employment status of livestock owners in both the block. Social participation had no significant relationship with the employment status of dairy farmer in both the block. Family culture had no significant association with the employment status of dairy farmers in both the block. Knowledge in AI had no significant association with employment status of dairy farmer in both the block.

Future scope of Study

1. In depth and comprehensive study under different Socio-Economic and agro-climatic conditions, in relation to sustainable production and employment generation of the farmwomen may be studied.
2. Specific studies on training needs of farm women in relation to entrepreneurship development under different socio-economic condition in the country may be undertaken.
3. Studies on entrepreneurship development for women on other livestock farming with economic sustainability may be undertaken.
4. Definite role and impact of performance of farmwomen in relation to increased production potential of livestock and status of entrepreneurship may be studied.

CHAPTER- VI

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APPENDIX

West Bengal University of Animal & Fishery Sciences
Department of Veterinary & A.H. Extension Education
68, K.B. Sarani, Belgachia, Kolkata-700037
2004

INTERVIEW SCHEDULE

A. IDENTIFICATION:

1. Sl.No.: **Date:** -
2. **Village:**
3. **Gram Panchayat:**
4. **Name of Block:**
5. **District:**

B. GENERAL INFORMATION:

1. **Respondent's Name:**
2. **Husband's Name/ Father's Name:**
3. **Category:** i) Landless ii) Marginal iii) Small iv) Medium- large.
4. **Age:** i) 20-40 years ii) 41-60 years iii) 61years & above
5. **Religion:** i) Hinduism ii) Muslim iii) Christian iv) Others
6. **Marital Status:** i) Married ii) Unmarried iii) Widow iv) Divorced
7. **Livestock Holding:** i) Cattle.....ii) Buffalo..... iii) Goat
- iv) Sheep.....v) Poultry..... vi) Duck.....
- vii) Pig.....viii) Others.....

8. Source of Income of Family:

<u>SL. NO.</u>	<u>NAME OF JOB</u>	<u>RS./MONTH (AVERAGE)</u>
a.	Agriculture
b.	Animal Husbandry	
c.	Service	
d.	Business	
e.	Others (Specify)	

9. Gross family Income/Month:

- i) Below Rs.2000/- ii) 2001-5000/- iii) 5001 & above.

10. Herd Type:

<u>Sl. No.</u>	<u>Type of Livestock</u>	<u>Total No.</u>		
		<u>Deshi</u>	<u>Exotic/Cross</u>	<u>Total</u>
a.	Cattle: Calf/Heifer/Preg/Lact/Dry:
b.	Buffalo			
c.	Goat/ sheep			
d.	Poultry			
e.	Pig			

11. Herd Size: i) Small Farmer (Upto-5)ii) Medium (5-10)iii) Large (<10).

C. SOCIO- ECONOMIC:

1. Occupation: i) Labour-(1)ii) Caste Occupation -(2) iii) Business -(3)
iv) Independent -(4) v) cultivation (5) vi) Service -(6)

2.Caste: i) SC - (1) ii) Lower caste -(2) iii) Artisan caste-(3)
iv) Agril.-(4) v) Prestige Caste -(5) vi) Dominant caste (6)

3.Edu. of the: i) Illiterate -(0) ii) Can read only -(1)

Respondent: iii) Can read & write -(2) iv) Primary -(3)
v) Middle -(4) vi) High School -(5) vii) Graduate-(6)

4. Family Type : i) Nuclear family-(1) ii) Joint family -(2)

5. Family Size : i) Upto-5 : (1) ii) More than -5: (2)

i) No. of members in family:

ii)) No. of members in family upto 4 years age :.....

iii) Effective family Size :.....

6.Family Educational Status: i) Illiterate (0) ii) Can read only (1)

iii) Can read & write (2) iv) Primary (3)

v) Middle (4) vi) High School (5)

vii) Graduate (6)

7.Land : i) No Land -(0) ii) Upto one Hectare -(1)

iii) Upto two Hectare -(2) iv) Above 2 Hectare (3)

8. Types of House: i) No House-0 ii) Hut-1 iii) Kutcha House-2

iv) Mixed House-3v) Pucca House-4 vi) Mansion-5

9.Electric supply: Yes/ No

10.Material Possession: i) Bullock Cart-1 ii) Cycle-1 iii) Radio -1

iv) Chairs-1 v) Improve Agril. Implem. -2.

11.Family Culture : I) Rural ii) Peri-Urban iii) Urban

12. Urban Contact: Please, let me know how often you visit the nearest
Town / City ?

PARTICULARS

FREQUENCY OF VISIT

	Most often	Often	Sometimes	Rarely	Never
	(4)	(3)	(2)	(1)	(0)

i) Individually:

ii) With family members:

iii) With Others:

f) Is feed cost is key factor to formulate an organized dairy farm? Y/N

BREEDING SYSTEM:

a) From where do you procure your Cattle ?

i) Local market ii) Organized Govt. farm iii) Private farm iv) Others

b) Do you use AI for breeding of your cattle ? Yes/No

c) Is AI facility locally available in the breeding period ? Yes/No

d) How many AI is required to conceive your cattle ?

i) One ii) Two iii) Three iv) More than 3

e) What is the mortality rate of AI borne calf in your Cattle ?

i) Maximum ii) Minimum iii) As Usual

f) Is there any prejudice regarding AI in your area ? Yes/No

If yes , please tell me.....

g) What is the age of first AI in your Cattle?

i) 12-15 Months ii) 15-18 Months iii) 18-24 Months

PRODUCTION SYSTEM:

a) How much (average) milk do you get from one cow/day ?.....

b) At what age they start to produce milk ?

c) What is the cost of milk /Kg in your production ?

i) Rs.8-10/- ii) Rs.10-12/- iii) Rs. 12-14/- iv) Rs. 14-16/-

d) Do you get remunerative price for your milk ? Yes/No

e) How much milk (Kg) is consumed at home / day ?

f) How many days do you sell your milk in market /month ?

g) Have you sold any milk product to market ? Yes/No

h) What are you done with cow dung?

i) Cow dung cake ii) Manure iii) Fertilizer

i) Do you sold any cow dung cake from your cow dung ? Yes/No

j) How much money you earned through the selling of cow dung cake?

HEALTH MANAGEMENT:

a) Where do you treat your sick animal?

SL. NO	TREATED BY	FREQUENCY OF VISIT (MONTH)
i)	Local Expert/ Kabiraj	One / Two / Three/ When required
ii)	Self treatment
iii)	Veterinary Doctor
iv)	Say Homoeopath

b) Do you get your cow vaccinated against disease ? Yes/No

If yes, please tell me the name of vaccine and age of animal being vaccinated?

Sl. No. NAME OF VACCINE AGE OF ANIMAL SOURCE

i)

ii)

iii)

c) Predominant disease enumerated in your in your herd ?

i) FMD (Aeso) ii) Anthrax (Tarka) iii) HS (Galafola) iv)BQ (Bozboze)

d) What are the causes of mortality ?

i) Out-break of disease ii) Vaccination outbreak iii) Chilling

e) Do you give any periodic preventive dose of drug in your herd? Y/N

If Yes, which drug: i) Dewormer ii) Vitamin supple. iii) Water molasses

MARKETING PRACTICES:

a) Where do you sell your milk ?

i) Local market ii) Direct to consumer

ii) iii) Cooperative v) Middle man v) Any other

b) What you have done by the money earned from Dairy farming?

i) Livelihood ii) Livelihood & Reinvestment iii) Reinvestment

c) About Payment: I) Daily ii) Weekly iii) Fortnightly iv) Monthly

E. EMPLOYMENT STATUS:

a) Do you work outside the home? Yes (1)/ No (0)

b) If yes, where? In the village (1) / outside the village (2)

c) At what age did you start working outside home in dairy farming ?

1) Below 20 years. ii) 21- 30 years. iii) 31 years & above.

d) Please, let me know your present employment pattern in dairy farming activities:

i) Not at all employed outside the home -0 ii) Employed outside home either on own farm or as hired labour -1 iii) Employed at home as unpaid labour -0 iv) Not employed at home -1

e). How many hours per day do you work on dairy farming activities both at home as well as outside?

Sl No	TIME OF THE DAY	PLACE OF WORK	
		At home	Outside
		From To	From To
i	Fore noon (4 AM- 12 noon)		
ii	Afternoon (12 noon-4 PM)		
iii	Evening (4 PM- 8 PM)		

i) 1-4 hrs - 1 ii) 4 to 8 hrs -2 iii) 8 to 12 hrs -3

f) Please, let me know the reason for your outside home employment/unemployment in dairy farming activities.

Sl No	REASON FOR EMPLOYMENT	Sl. No.	REASON FOR UNEMPLOYMENT
i	Economic necessity	i	Cultural constraints
ii	Ample free time	ii	Place of work is at a distance
iii	To pass time	iii	Harassment by livestock owner
iv	Job is readily available	iv	No free time
v	Desire to have an independent income	v	No economic necessity
vi	Have interest	vi	Difficulty to manage home & job together
vii	As a relief from boredom	vii	Children feel neglected
viii	Maintaining individuality	viii	Have small child/children
ix	Only source to support the family	ix	Not the only member to support the family
x	Family member want it	x	Family member do not permit
xi	Any other (Please specify)	xi	Any other (Please specify)

F. ADOPTION INDEX OF DAIRY FARMING:

Sl. No.	Name of Practices	Adopted /Not	From which year
a)	Artificial Insemination		
b)	Prophylactic Vacc. against disease		
c)	Deworming of animals		
d)	Cultivation of green fodder.....		
e)	Feeding of green fodder		
f)	Feeding of concentrate		
g)	Feeding of urea- molasses.....		

G. DECISION MAKING PATTERN IN DAIRY FARMING :

Please, tell me the name of family members, who take decision regarding Dairy farming?

i) No Response ii) Independent decision by husband only iii) Collective decision by all family members iv) Joint decision by wife & husband. v) Independent decision by wife only.

H. DISTRIBUTION OF RESPONDENTS ACCORDING TO THEIR DECISION MAKING PATTERN IN DAIRY FARMING:

SL. NO.	ACTIVITIES	DECISION MAKING				
		1	2	3	4	5

- Housing of Dairy animal :
- Feeding of dairy animal :
- Breeding of dairy animal :
- Health management :
- Marketing of product :
- Consumption of product :

1. No response 2. Male only 3. Collective 4. Joint dec. 5. Female only

I. ATTITUDE OF RESPONDENTS TOWARDS DAIRY FARMING:

SL. NO	STATEMENTS	AGREE	UNDECIDED	DISAGREE
1.	In dairy farming AI is a good practice.	3	2	1
2.	Milch animal in dry period can be neglected in the matter of their feeding.	1	2	3
3.	Through scientific feeding in dairy animals milk yield can be increased.	3	2	1
4.	Vaccination against HS & RP in milch animal is not regularly needed.	1	2	3
5.	Drenching of cross breed animal for internal parasites every year is good practice.	3	2	1
6.	In Dairy Farming is good to keep animals loose in an enclosure.	3	2	1
7.	Milch animals do not need green fodder to their feed.	1	2	3
8.	In Dairy farming cross-bred cows are not better than Buffaloes.	1	2	3

J. KNOWLEDGE LEVEL ABOUT ARTIFICIAL INSEMINATION:

SL NO.	STATEMENTS	ANSWERS
1.	In which heat cycle a heifer should be inseminated for first time?	Second (1) Any other (0)
2.	How many times a cow should be artificially inseminated in one heat cycle for optimum result	Twice (1) Any other (0)
3.	What is the appropriate time for detection of heat in a cow?	Morning (1) Any other (0)
4.	After how many days does the cow repeat its heat cycle	20-25 days (1) Any other (0)
What are the reasons for a cow not coming in heat even after attaining puberty?		
5.	Nutritional Deficiency	Yes (1) No (0)
6.	Heavy parasitic load	Yes (1) No (0)
7.	Due to reproductive disorders	Yes (1) No (0)
Why do you follow AI in your cow? Correct/ Incorrect		
8.	Deshi bullas are not good	1 0
9.	Animal becomes pregnant without fail	0 1
10	At what age does a crossbred heifer generally comes in heat for the first time?	18-24 months.(1) Any other (0)
11.	How many days after parturition should a crossbred cow be inseminated	45-60 days (1) Any other (0)
12.	What should be the body Weight of a CB heifer at puberty for getting optimum benefits of AI	200-250kg (1) Any other (0)

K.ATTITUDE STATEMENT FOR EMPLOYMENT OF RURAL WOMEN:

Sl No.	Statement	Agree	Undecided	Disagree
1.	More educated a rural women is more employment opportunity will be available to her	3	2	1
2	Family members should have an open mind about the rural women working out side the home	3	2	1
3	Livestock rearing generates employment primarily for family labours	3	2	1
4	For taking up out side home employment it is not necessary to know the nature of work	1	2	3
5	Adopting recommended animal science technology will hardly open up new avenues of employment for me	1	2	3
6	It is difficult to mange both the family as well as the out side employment	1	2	3
7	Even if I have adequate information about the available jobs I will not be able to choose the one which suits my personality	1	2	3
8	I wish that employment opportunities were available to me round the year rather than only during peak agricultural season	3	2	1

L. ATTITUDE STATEMENTS FOR INCOME GENERATION OF RURAL WOMEN:

Sl No.	Statement	Agree	Undecided	Disagree
1.	Earning additional income helps into social transformation of family	3	2	1
2.	Even if I earn additional income, I will not be able to improve my vocational skill	1	2	3
3.	Generation of additional income will not have any effect on the economic status of my family	1	2	3
4.	Generating additional income through dairy animals does not increase the nutritional status of the rural people	1	2	3
5.	Livestock owners can not generate higher income per unit of their dairy animals even after adopting available technology	1	2	3
6.	Higher income and more savings provide a feeling of security in life.	3	2	1
7.	Livestock rearing in spite of being labour intensive cannot generate additional income for the rural people.	1	2	3
8.	Additional income does not lead to higher savings for a rainy day	1	2	3
9.	If I have enough money of my own I will be able to adopt cost intensive dairy farm technologies also.	3	2	1
10.	Additional income in the family will lead to better education of my children	3	2	1
11.	Availability of additional money will be a welcome help in the purchase of more high producing dairy animals	3	2	1
12.	I can increase my land holding by spending the generated additional income on it.	3	2	1

M. KNOWLEDGE LEVEL ABOUT DEWORMING:

SL NO.	STATEMENT	CORRECT	INCORRECT
1.	Why deworming should be followed? a) To reduce the parasitic load of the animal b) Medicines are available at free of cost c) Doctor says	1	0 0
2.	How do you administer coccidiostat to young calves?	Orally (1) Any other (0)	
3.	When do you administer a) Fourth to fifth day after birth b) 15 th day after birth c) 1 month after birth	Correct 1	Incorrect 0 0
	What is the schedule of deworming in cattle? No		Yes
4.	Monthly interval for 1 st three months of age	1	0
5.	Quarterly interval upto 1 year of age	1	0
6.	Every 6 months interval before and after winter season	1	0
7.	In adult, 1 year interval.	1	0
8.	How can the internal parasites be controlled?	Deworming regularly (1) Any other (0)	

N. CONSTRAINTS PERCEIVED BY THE FARM WOMEN IN DAIRY FARMING:

Sl No	CONSTRAINTS PERCEIVED	Yes/ No	Rank
1.	High cost of dairy feed		
2.	Non availability of dairy feed		
3.	Unremunerative price of milk		
4.	Lack of transportation facility		
5.	Lack of marketing facility		
6.	Lack of adequate AI facility		
7.	Lack of credit facility		
8.	High cost of vety medicines		
9.	Non availability of vety services		
10	Knowledge gap about AI		