Role of Women in Rice Cultivation and Economy

A thesis submitted in the partial fulfillment of the requirement for the Degree of Master in Social Science in Anthropology

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Dedicated to

Baba, Mama, Brothers and Sisters

Maria

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Final Approval of Thesis

This is to certify that we have read the thesis submitted by Mr. Khurram Shahzad. It is our judgment that this thesis is of sufficient standard to warrant its acceptance by the Quaid-i-Azam University, Islamabad for the award of the Degree of "M.Sc in Anthropology".

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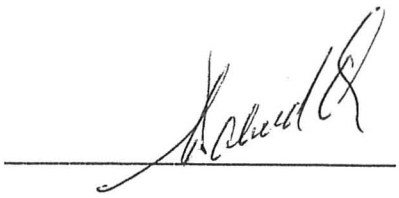

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1.1 Introduction

Agriculture is the mainstay of Pakistan's economy that contributes substantially to Pakistan's exports and rice is an important food cash crop. It is the second largest agricultural export item of the country and accounts for 6.1 percent of the total value added in agriculture and 1.3 percent of GDP.

Many societies, particularly those in developing countries usually emphasize only women's domestic and community role while political and economic roles are reserved for men, even where women's economic roles is obvious such as water and fuel wood collection, vegetable gardening, dairy and poultry activities, these economic contributions are minimized and dismissed as emanating from their biology. Thus women's productive work is less visible and less valuable as compare to that of men. Nonetheless, with increasing economic intensification and diversification as a result of emergence of new challenges, there is gradual movement away from the status quo. The forces of globalization and colonization accelerated the circulation of new ideas and cultures around the globe. As a result women are gradually brought into the center of the development. In the economic domain rural women are involved in the cultivation of crops like palm oil, coffee, wheat, and others for cash.

Throughout the world, rural women historically have played and continue to play an important role in rice production. Women's involvement in rice production varies from region to region, and even within region. Huvio (1998) observes that the percentage of labor supplied by

women in rice cultivation varies from 3% for floating rice cultivation (using animal traction) in Mali, to 80-100% in mangrove swamp rice cultivation in the Gambia and Liberia.

The focus of the study was the role of women in the cultivation of rice in village *Burj Aghra,* Mandi Bahaudin as the rice was grown in abundance and of fine quality there and was the key agricultural produce that was the key player not only for the economy of the village but for the nation. In Pakistan the role of women is confined to some specific jobs either within the houses or to some specific jobs outside the houses but the women of the *Burj Aghra* were not only performing their household duties but contributing towards the rice growing process in the fields.

1.2 Problem

Women of the rural areas are playing very significant role for contributing to their household economy, in addition to household chores, they used to domesticate animals, work in the fields during the whole process of rice production but their role as labor or contributor remained invisible and not recognized by the men society.

1.3 Statement of the problem

In the current world scenario, women are raising their voice for the recognition of their basic human rights and acknowledgment of their physical and mental contribution towards the family, while the rural women are of the view that donation to agriculture has been undermined by the male members of the society. Same was the condition with the women of *Burj Agra* who in spite of their laborious work in the rice fields, in addition to full time activity of household

were never appreciated or paid for their efforts in the growing of rice and its production that was the sole agricultural precuts and its income for their families.

1.4 Literature review

The literature review is sustaining element for the ethnographic studies helping the investigator to review his research findings to make his research more authentic and free or errors by learning various viewpoints of renowned scholars and researchers. By consulting the available literature cross checking of the data collected through different methods is the significance of the literature review that satisfy the researcher about his efforts made for his research goals.

Keeping in mind the importance of literature review, various books, journals, booklets, newspapers and reports were consulted by the researcher about the contribution of women in the production of different crops.

Agriculture is the mainstay of Pakistan's economy contributing for the substantially of Pakistan's exports, while the rice as a cash crop is the second largest agricultural export item of the country accounts for 6.1 percent of the total value added in agriculture and 1.3 percent of GDP. In Punjab, basmati and IRRI rice are cultivated, grown and consumed at the country level but exported to numerous countries. Basmati has a lower yield and a higher production cost than IRRI rice, but these are offset by higher prices. Using guaranteed price supports for both varieties, the government encourages farmers to produce exportable surpluses, particularly of Basmati, where Pakistan has a comparative advantage and is the dominant supplier of the

world's premier non- gluteus long grain aromatic rice to the international market (Davidson, 1996).[1]

Rice farming system investigated at the international rice research institute has analyzed the gender role to identify the technologies that improve productivity and increase farm income and reduce the pain and drudgery of farm life, especially the women in rice growing regions of Asia.

(CGIAR 1992)[2]

Women grow about half of the word's food, but own hardly any land, have difficulty in obtaining credit and are overlooked by agricultural advisors and projects. In Africa, three quarters of the agricultural work is done by women while in Asia, Latin America and the Middle East, women comprise half of the agricultural labor force.

(Huvio, 1998)[3]

The particular tasks done by men and women have certain common patterns. In general, men undertake the heavy physical labor of land preparation and jobs which are specific to distant locations. Such as livestock herding, while women carryout the repetitious, time consuming tasks like weeding and those which are located close to home, such as care of the kitchen garden. In most cultures the application of pesticides is considered a male task, as women are aware of the danger to their unborn children of exposure to chemicals.

[1] The authors respectively are Assistant Scientific Officer, Chief Scientific Officer and Scientific Officer, Social Sciences Institute (SSI), National Agricultural Research Centre (NARC), Islamabad.

[2] CGIAR GENDER PROGRAME 1992

[3] HUVIO,T.(1989). Women's role in rice farming

(Mbah F. A 2004)[4]

The United Nations International decade for Women, which was marked in 1985, has helped to stimulate official awareness of the increasing impoverishment of women and of the central role they play in the agricultural economies of third world countries.

Perry 1985 pointed out clearly that:

> *"While agricultural planners often stereotype women as consumers rather than producers, rural women actually account for more than half of the food produced in the Third world and also play leading role in the storage and processing of food. He reported that in Africa, women actually account for as much as 80 percent of the food production.*

(FAO; 1984)[5]

An analytical framework by Cloude (1985) distinguished between men and women's roles in crop production and related this to overall project efficiency and to equity between the sexes. It was concluded that the projects where Women's access to production resource is high have the highest efficiency (FAO (1997).[6]

Boud (1974) found that in South Eastern Botswana, households work took up half of the active day of women. One of the main obstacles in the effort to improve women's participation

[4]Mbah F.A(2004) female rice cultivators and land use pattern in Ndop.PGD dissertation, university of Buea, Cameroon .unpublished

[5] FAO (1984) women in agriculture: women in rice farming system; focus: Sub Saharan Africa by Jennie Dey
[6]Gender key to sustainability and food security .Illustrated plan of action for women in development. Rome

in food chain activities and rural development was identified as perennial ignorance of women's role as producers, reproducers and care providers (Moser 1993).[7]

[7]Moser, C. Gender planning and development. Theory, practice and training. New York. Rutledge

1.5 Objectives

Every ethnographic study has some of its objectives to facilitate the investigator to keep his/her direction straight towards the aching of research goals by using different methodologies to attain an authentic and reliable data according to the topic of research. Pre-determined objectives facilitate the researcher to follow the line of action without losing concentration on unwanted aspects rather to engage her towards the targets. The objectives for the study were determined well before entering into the locale of study that were:

1. To identify the factors that hinder the high level of participation of women in rice production;
1. To explore the contribution of women in the economy of rice production;
2. To investigate the difference of contribution of men and women in rice cultivation;

1.6 Hypothesis

A statement that explains or makes generalizations about a set of facts or principles, usually forming a basis for possible experiments to confirm its viability. The words *hypothesis, law,* and *theory* refer to different kinds of statements, or sets of statements, that scientists make about natural phenomena. A *hypothesis* is a proposition that attempts to explain a set of facts in a unified way. It generally forms the basis of experiments designed to establish its plausibility. Simplicity, elegance, and consistency with previously established hypotheses or laws are also major factors in determining the acceptance of a hypothesis. Though a hypothesis can never be proven true (in fact, hypotheses generally leave some facts unexplained), it can sometimes be verified beyond reasonable doubt in the context of a particular theoretical approach. A scientific

law is a hypothesis that is assumed to be universally true. A law has good predictive power, allowing a scientist (or engineer) to model a physical system and predict what will happen under various conditions. New hypotheses inconsistent with well-established laws are generally rejected, barring major changes to the approach. An example is the law of conservation of energy, which was firmly established but had to be qualified with the revolutionary advent of quantum mechanics and the uncertainty principle. A *theory* is a set of statements, including laws and hypotheses that explain a group of observations or phenomena in terms of those laws and hypotheses. A theory thus accounts for a wider variety of events than a law does. Broad acceptance of a theory comes when it has been tested repeatedly on new data and been used to make accurate predictions. Although a theory generally contains hypotheses that are still open to revision, sometimes it is hard to know where the hypothesis ends and the law or theory begins. Albert Einstein's theory of relativity, for example, consists of statements that were originally considered to be hypotheses (and daring at that). But all the hypotheses of relativity have now achieved the authority of scientific laws, and Einstein's theory has supplanted Newton's laws of motion. In some cases, such as the germ theory of infectious disease, a theory becomes so completely accepted, it stops being referred to as a theory. The hypothesis framed by the researcher by keeping in mind the topic of research and its research requirements was:

1. Women’s participation as economic producers can help in economic development and poverty alleviation;
2. If women would be given access to the public sphere their role in rice cultivation will increase;
3. Women’s role in rice production is confined to some specific jobs;

1.7 Justification for selecting the locale

The *Burj Aghra* was a rural area known for its agricultural produce rice exported to foreign countries in abundance for earning foreign exchange for the country. As the village was producing huge quantity of excellent quality of rice with the participation women labor force was selected by the researcher to explore different varieties of rice, its cultivation process, role of women in the cultivation and harvesting activities and their recognition by the men dominated society. The availability of unlimited data according to the requirements of the research topic was another aspect of selecting the area for the current research study. The village *Burj Agra* was the integral part of Mandi Bahauddin in the Punjab province and access to the area was very easy through roads network surrounding the area and numerous transportation facilities were also available for the frequent movement of the researcher, while the language spoken in the local of study was Punjab and being Punjabi it was easy for the researcher to communicate with the natives in their language.

1.8 Significance of the study

The significance of the research study was its locale of study, easily accessible rural setting undergone drastic socio-economic changes with the abundance production of best quality of rice with the mobilization of the woman labor force.

The village was a traditional rural inhabitation as found around the province but its significance was its contribution to the country's economy through the rice export to wealthier countries, moreover the village has some unique cultural customs and traditions that were practiced there in their true sense.

The implication of the study was its scope of research that involved frequent movement of the researcher to different agricultural zones to observe the farm labor activities and to know their perception about their status as labor force within the family and in the social setup. Moreover, in the past no such ethnographic study was carried out by any of the social organization to observe the impacts of agriculture on the socio-economic culture of the people and the village at large.

The research was conducted to explore different dimensions of changes in the social and economic conditions of the people that changed their life pattern, livelihood means, living conditions, social interaction with other regions, market strategies, communication methods and occupation pattern.

An in-depth study undertaken by the researcher in the village *Burj Agra* would be a vibrant addition to the existing anthropological literature that will provide a guideline for the students of anthropology, sociology and other relevant disciplines, while it will motivate the concerned institutions either run by the governmental or the non- governmental organizations to modify their development initiatives by involving the people of the area to introduce the application of mechanized farming for enhancing the rice production of the area. In the village the participation of women in the agricultural productivity was constantly expanding, while they were facing numerous restrictions such as recognitions of their roles, access to production share and denial of decision making. All the factors that have been explained were the targeted aspects of the research initiative for getting handful of data.

1.9 Methodology

The methods of research generally represent the overall process; however they should be viewed as an ever-changing process rather than a fixed set of steps. The social scientists and researchers used to collect the data to test the hypothesis through a variety of research methods.

The methodology has been defined by Creswell:

> *"Research is a process of steps used to collect and analyze information to increase our understanding of a topic or issue". It consists of three steps: Pose a question, collect data to answer the question, and present an answer to the question.*"

The research can be defined as the search for. Approaches to research depend on epistemologies, which vary considerably both within acknowledged or any systematic investigation, with an open mind, to establish novel facts, solve new or existing problems, prove new ideas, or develop new theories. The primary purposes of basic research (as opposed to applied research) are documentation, discovery, interpretation, or the research and development of methods and systems for the advancement of human knowledge between humanities and sciences.

The scholars usually do not search for the ultimate correct answer to a question, but instead explore the issues and details that surround it, while an example of research in the humanities is historical research, which is embodied in historical method. Historians use primary

sources and other evidences to systematically investigate a topic, and then to write histories in the form of accounts of the past.

According to Michael A. Agar:

> "*We need a powerful mode of argumentation, a mode that ensures we can represent our representations in a credible ways. In such worlds, a systematic argument enjoys a star-spangled legitimacy. We need a way to argue what we know based on the process by which we came to know it...not as the only possible representation... but as an essential lever to try and move the world".*
>
> (Michael A. Agar (1996:13)

Methodology is the systematic knowledge and logic in use, procedures and techniques to have enough knowledge about the research being conducted. The researcher adopted many research methodologies for collecting a variety of data relating to the research topic. The quality of the research and data collection entirely depends upon the types of tools and techniques used by the researcher. Keeping in mind the importance of different research methods, almost of them were utilized by the researcher for the accomplishment of research in the given timeframe:

1.9.1 Rapport building

The main purpose of rapport building was to create relations with the native people because without their help the research objects cannot be achieved until the friendly relations are built among the researcher and the people, therefore the rapport establishment was the first step after entering into the locale of study.

By considering its validity, the researcher started his efforts for establishing good relations with the people of the village but that was not the easy assignment because people were

conscious about the researcher and his research initiatives. The activity was continued with the help of some of the known persons that took at least fifteen days time by introducing the researcher as an academician and his research as pure academic activity no harmful motives for the people and the village.

The rapport building has been defined as:

> *"Rapport is the state shared by two or more individual whose behavior; thinking and values come into alignment, regardless of the "content' of their desired objectives or outcomes."*
>
> (http://rapport-building.com)[8]

1.9.2 Participant observation

The participant observation being a useful tool of research was adopted by the researcher for gathering quantitative data by participating in the people's cultural and religious rituals, adopting their dress pattern and language that made the researcher able to interact and observe the locals for getting authentic information that was required to fulfill the research requirements. The participant observation has been defined by W. Lawrence Neuman:

> *"A great deal of what researchers do in the field is to pay close attention, watch, and listen carefully. They use all the senses, noticing what is seen, heard, smelled, tasted, or touched the researcher became an instrument that absorbs all sources of information"*
>
> (Neuman; pp396)

[8] (http://rapport-building.com)

Through the technique of participant observation, the researcher immersed himself in the society and observed the activities and cultural obligations of the local people by staying in the locale of study for a reasonable time. The main purpose of participant observation was to monitor the day-to-day activities, their social and religious ceremonies, marriage and death rituals, celebrations of child birth etc.

According to Russell (1944: 136)[9]

> *"Participant observation, or ethnographic field work, is the foundation of cultural anthropology. It involves getting close to people and making them feel comfortable enough with your presence so that you can observe and record information about their lives."*

1.9.3 Key Informants

Key informants are the respectable and trustworthy person of the specific area who serves as bridge between the researcher and the respondents for enabling him to interact with them for the purpose of obtaining in-depth information required by him/her.

According to Bernard Russell:

> *"Good informants are those people to whom you can talk easily and who can understand the information you need"*
>
> (Russell 1994: 101)

[9] Bertrand Russel, power tactics (London,perlfresearch institute,1944),p.136

Having established rapport with the local people, the researcher looked for the reliable people enough able to understand the nature of his study and willingly agreed to support him to achieve research goals to be his key informants. The selection of the key informants was important for the researcher, as they should be chosen carefully with endurance and with the support of known persons of the community. Key informants also act as researcher's sponsors in the community to legitimize his or her presence in an unknown community.

For establishing good rapport and gaining their confidence, researcher has to share his research aims and objectives and introduce him clearly with them to take them into buoyancy in order to get their favor stimulate them to support his research initiatives and share valid and reliable valid data. Selection of the key informants was based upon their reliability, and their own acceptance in the community, finally the researcher selected few reliable persons of the village.

The characteristics of the key informants have been defined by Pelto & Pelto:

> *"A key informant interviewing is an integral part of ethnographic research. Good informants are people who you can talk too easily, who understand the information you need and who are glad to give it to you or get it for you."*
>
> (1986:14)[10]

1.9.4 In depth interviews & interview guide

Interview guide consists of a list of questions covering the research objectives that an interviewer interested to ask from the respondent.

[10]Pelto,

According to Goode and Hatt (1952)[11]:

> *"Interview guide uses a great proportion of unstructured or open ended questions so it allows a wide variety of responses."*

As the topic was multidimensional and having couples of factors which were responsible for child scavenging so an unstructured interview guide was prepared to get data, as it was easy to alter. The tool helped the researcher a lot to involve respondents in the process of interviews for grasping more information by asking extra relevant question beside the interview guide.

In depth interview as a way to get detailed information about respondents' point of views with reference to research topic, instead of generalizing was used in the study. During the conversation with people, a clear road map regarding objectives of research was kept in mind by the researcher. The interviews were started by introducing the topic and purpose of study later on a number of questions were asked to get relevant data from scavengers. A cross questioning technique also helped to verify 50 respondents of sample, views about their life style including the professional life and life at home for the fulfillment of objectives of research.

The researcher also used the tool of probing during the process of interviews by asking open-ended questions that made the whole process easy and profitable. During the field work, there researcher conducted many interviews with different age group by utilizing the structured and unstructured interviewing owing to its flexibility and ease.

> *"An in-depth interview is a conversation with an individual conducted by trained staff that usually collects specific information about one person."*

[11] Goode, W.J and Hatt, P.K. . (1952). *Methods in Social Research.* Sydney: Mcgraw-Hill, Kogakusha, Ltd.

(www.caps.com)

1.9.5 Case studies

The case study method as a systematic inquiry of the issue was used to get detailed information about the perceptions of respondents relating to problems faced by the farmers for cultivating rice crop and the involvement of women labor force in the cultivation activities. About case study, Yin (1984)[12] was of the view:

> *"In brief the case study allows an investigation to retain holistic and meaningful characteristics of real life events".*

Through the case study method, a detailed history of the rice growing, its different stages, use of mechanized methods, pesticides, indigenous methods of farming and role of women in the whole process and their acceptability as a compulsory contributor towards the growing economy of the village.

Different cases were conducted for getting detailed information about the respondent's profile, their activities, livelihood means, and overall their experience being an inhabitant of the village. A brief description of case study given by Mitchell (1968; p.38)[13] is reproduced below:

> *"A Case Study is detailed examination of an event the operation of some identified general theoretical."*

[12] Yin, Robert K. (1984). *Case Study Research: Design and Methods* (Vol. volume 5). Sage Publications.

[13] Mitchell, Interpretation (Oxford, oxford publishers 1968),38

1.9.6 Sampling

Sampling is the small representation of the whole universe and key technique for data collection because the observance of whole the population is not possible for an investigator in a specified time; therefore a small sample size is usually taken by the investigators being the representative of the whole population.

Being a useful technique, it was utilized by the researcher during his research work for receiving a heavy amount of data about the research topic. The application of technique not only saved the time of the researcher but allowed her to obtain as much information as was required for the completion of the research study. The sample size was selected from among the population by using random sampling.

According to Bernard:

> *"A selection hopefully representative, of the total population or universe that one desire to study"*
>
> (Bailey: 1978)

Sampling is very important method in field research, as it determines the validity and reliability of data and it is impossible to study all the target population of a locale, so researchers always taken a representative sample for the research purposes.

As Bernard defined:

" Study based on a representative sample, however, is often better that one based on the whole population that is sample data many have greater internal validity than data from the whole population." (Bernard 1988)[14]

The sample size selected by the researcher was consisted of both male and females of different age groups, ethnic relationship, area background etc. Though other methods of selection were available, but the researchers used random and purposive sampling techniques for the selection of the sample size from among the community.

The description of the sample is given below:

"Sampling is that part of statistical practice concerned with the selection of an unbiased or random subset of individual observations within a population of individuals intended to yield some knowledge about the population".

(en.wikipedia.org/wiki/Sampling)[15]

1.9.7 Socio economic survey

In order to know about the composition and social standing of the locale initially, a socio economic survey was carried out by the researcher in the village *Burj Aghra* by using the census forms well prepared before the survey consisting of different questions relating to the family size, education, means of livelihood, education, marital status etc. The forms were got filled by

[14] Bernard, H.R. (1988). *Research Methods in Cultural Anthropology.* Delhi: Sage Publications India.

[15](en.wikipedia.org/wiki/Sampling)

the respondents by sitting with them at their door steps in order to get the forms correctly filled. Through the method of socio-economic survey, lot of information was gathered about almost every aspect of the village life.

1.9.8 Interview guide and schedule

The interview guide and schedule was another anthropological method used by the researcher for collecting data both from formal and informal interviews by applying the questioning technique of interview guide that was consisted of a list of basic points to be covered by the interviewer during the interviews with the open and closed ended questions.

An interview guide has been described by Howard:

> *"An interview in which question to be asked, their sequence and detailed information to be gathered are all predetermined, used where maximum consistency across interviews and interviewees is needed."*[16]

1.9.9 Group discussion

The focus group discussion technique was applied by the researcher to know the contradictions among the views of the respondents to clarify the ambiguity of researcher's thoughts. The participants were requested to take part in the discussions with new ideas and experiences supported by the logical arguments.

[16] Howard, M.1994." Social Sciences Research Methods": Prentice-Hall and Inc.

1.9.10 Daily diary and field notes

Writing of diary is the simple and effective way of recording the observations, outcome of discussions with the respondents and each and every happening that taken place during the field work. The method was used by the researcher during the research work in the village *Burj Aghra* and important events even minor information relating to the research topic were recorded in the daily diary that facilitated the researcher to cross check the data collected through different methods to keep the study without errors.

Field notes are helpful to record the events taken place during the research on immediate basis to remember the activities of the field work on daily basis.

The researcher used the methodology during his entire research work in the village *Burj Aghra* to note down the important data even minor information gathered during the formal and informal discussions, interviews, case studies and general interaction with the respondents and the common villagers. Both of the documents, daily diary and the field notes were consulted at the time of compiling the data to strike off the errors to make the information clean and free of ambiguity.

1.9.11 Photography

Photography being the modern technique of researcher was practiced by the researcher during the field work for capturing the events of importance, individuals that were interviewed, focus group discussion participants and historical buildings of the village. The speaking data was gathered to make the study more authentic and reliable.

Chapter No. 2

2.1 Area profile

Mandi Bahauddin was the capital of Mandi Bahauddin District in the Punjab province of Pakistan. The town was 220 meters above the sea level situated in the upper Punjab, between the rivers Jhelum (north 12 km) and Chenab (south 39 km). The city enjoyed all four seasons, although the climate was very hot in summer and cold in winter. During the months of June and July, the temperature mounted up to 45 degree Celsius. The winter months were however, relatively pleasant and the temperature was recorded below 5 degree Celsius. The average rainfall in the district was 700 mm. Main localities (Muhallahs) of the city were Muhallah Kot Ahmad Shah, Munshi Muhallah, School Muhallah, Gurah Muhallah, Mughalpura, Malikabad, Sufipura, Shafqat abad, Wapda Town and Ward No. 5 or Panch Ward. It contained a population of 427000 individuals.

2.2 Administration

Mandi Bahauddin, the capital of the district was also the Tehsil headquarter and had 27 Union Administrations / Union Councils. The politicians of the district played a dynamic role in the national and provincial politics. The district's territory consisted of 5 Provincial Assembly (PP) and 2 National Assembly (NA) constituencies. A veteran politician, Mr. Nazar Muhammad Gondal, a lawyer and agriculturist by profession and formerly the District Nazim, had been entrusted with the portfolio of the Ministry of Food and Agriculture by the present PPPP government in the first half of its 5-year tenure. People of the district were at large, skeptical towards the role of local politicians, as they were of the view that the politicians and the state

machinery did not play their role they had to play in order to solve the problems of Mandi Bahauddin.

The district boasts the highest number of Civil Judges in the Punjab Province moreover, sharp awakening in learning during the last two decades has produced a big number of bureaucrats serving in different government offices nationwide.

2.3 Early history

In 1506 C.E. Chief Bahauddin, Sufi Sahib, established a settlement namely Pindi Bahauddin in the north-eastern corner of the region known as "Gondal Bar", after his immigration from Pindi Shah Jahanian to the area. The settlement soon became a center of intense commercial activity, hence named afterwards by the merchants as "Mandi Bahauddin", the Market of Bahauddin. The Urdu language word "Mandi" implies "marketplace". The proto-city was later on fortified with 9 main doorways to guard against foreign invasions; the wall around the ancient inhabitation was intact as it was constructed in 1946. However, the recorded history of the city dates back to the era before Christ, connecting the region with the historic figure of Alexander. Some 8 km northwest of the city was Mandi Bahauddin town, near it in the plain of the village Khiwa on the southern bank of Jhelum River, the battle Battle of Hydaspes (Jhelum) River was fought between Raja Porus (Sanskrit *Paurava*) and Alexander. The historic battle of thes River, which Indian sources referred as the “Battle of Jhelum”, taken place in 326 BCE. The kingdom of Raja Porus was situated in the northern Punjab of modern Pakistan. This battle proved the last major fight of Alexander's career, for the Macedonians, after being put up a fierce resistance by Porus' soldiery and having heard of a massive 4,000 elephant force mustered by eastern kingdoms, refused to march further east to Ganges Plains.

2.3.1 Muslim era

In 997 CE, Sultan Mahmud Ghaznavi, took over the Ghaznavid dynasty empire established by his father, Sultan Sebuktegin, In 1005 he conquered the *Shahis* in Kabul in 1005, and followed it by the conquests of Punjab region. The Delhi Sultanate and later Mughal Empire ruled the region. The Punjab region became predominantly Muslim due to missionary Sufi saints whose *dargahs* were the landscape of Punjab region.

Another historic battle of Mandi Bahauddin was fought in 1739-40 near the modern traffic site of "SattSira". Although no concrete historical record was available about the Battle but the oral traditions as a legendary tale of valor and bravery. Reportedly, the Alliance of the villages (Sohawa Dillo Ana, Sohawa Bolani and Sohawa Jamlani) gave fierce resistance to one of the main contingents of Persian Army led by Nader Shah. Nader Shah was not personally with the contingent which was stationed near SattSira. The Sohawa Alliance, under the generalship of legendary figure Dillo khan gondal, managed to defeat and divert the pressure of Nader Shah's formidable force, which soon afterwards sacked Delhi. On that redemption, some anonymous local *Marasis* poets of the day spoke up:

> *"The combat between Dillo and the victor of Delhi (took place), the one from the lineage of Lion (Dillo) came out victorious".*

2.3.2 British era

Mandi Bahauddin came under the British Rule in the nineteenth century. The city was only 34 km southwest of Jillian wala, the site of the famous Battle of Jillian wala Battle of Jillian wala/the second Sikh War, fought between the British East India Company and the Khalsa Sikh

Army. The British commander in the battle was General Sir Hugh Gough, who was later on replaced by General Charles James Napier. The city fell to the British in 1849 as the Sikhs were defeated in the decisive combat and the whole Sikh kingdom consisted of modern Punjab and Khyber Pakhtoon-kha provinces, was annexed to the British East India Company the same year.

The population that grew considerably in the early 20th century near the old village site was consisted of Sikh, Hindu and Muslim businessmen and landowners who came to settle there. The town was named Mandi Bahauddin after the establishment of a grain market in the area (Mandi means 'market' in Urdu). During the British rule, in 1916, the Pindi Bahauddin Railway station was built to connect the town with other major cities via Lala Musa Railway Junction. It was a time when the British were building railway tracks across the subcontinent and introducing modern and essential public-use equipment in their best interest. The Railway System was introduced and laid down to defend their Empire from the North. Partly due to the reason quoted above and partly due to its geographical position, it was called North-Western Railway (NWR).

Chak Bandi was founded by Sir Malcum Heley and approximately 51 *Chaks* were settled and notified. Among the *51 Chaks*, the land was awarded to the people who were loyal to the British Empire and had worked for the British interests. *Chak* 51 became the centre of the newly established town. The map of the *Chak* was made by John Alam. A famous grain market was set up in the center of the *Chak*. Soon afterwards, *Chak* No. 51 was called Mandi Bahauddin and it was notified in 1920. In 1924 Pindi Bahauddin Railway station was also notified with the above mentioned name. In 1937 when Mandi Bahauddin was a town, it was given the status of a town committee. In 1941, the town was given the status of a Municipal Committee. In the master plan for the reconstruction of the town, in 1923, all of its streets and roads were laid straight and wide.

In 1946, nine gates and a fortification wall surrounding the whole town, belated due to riots were over.

2.3.3 After independence

The predominantly Muslim population supported Muslim League and Pakistan Movement. After the independence of Pakistan in 1947, the minority Hindus and Sikhs migrated to India while Muslim refugees from India settled down in Mandi Bahauddin district. In 1960, the city was given the status of Sub-Division in district Gujrat.

In 1963, the Rasul Barrage and Rasul-Qadirabad Link Canal project under the Indus Basin Irrigation Project was started. The project was managed by WAPDA, and a large colony for government employees and foreign contractors was constructed 2 kilometers north of Mandi Bahauddin city. The project was completed in 1968 by Engineer Riazur Rahman Shariff as the Project Director that brought the city into limelight and helped the city grow commercially.

In 1993, Mian Manzoor Ahmed Wattoo, the then Chief Minister of Punjab, announced and notified the city as the District H.Q of the new district of Mandi Bahauddin. The Tehsil headquarters towns of Phalia and Malak wal were 22.5 and 28.5 kilometers from Mandi Bahauddin, respectively.

2.3.4 Culture

In spite of being relatively conservative in nature, Mandi Bahauddin city remained culturally rich for both old and modern tendencies. In 2006 it got its first FM Broadcast Radio Station FM-98 *Hamara Mandi Bahuddin* which culturally changed the social scnario of the village, people became aware of the modernization and its impacts on the socio-cultural behavior that encouraged the cultural mixes into one district. The radio broadcasts music and infotainment

for each segment of the social mix. The city enjoyed its purely agrarian and mercantile culture before the partition of India in 1947. The local Jat culture, an offshoot of Punjabi culture, however, received a heavy influence of central Indian culture with the migrants reaching Mandi Bahauddin from different parts of India after the Partition. Punjabi language was the only widely spoken and understood language of the city, whereas a goodly number of individuals understand and speak Urdu and English.

Mandi Bahauddin was home to three diverse religious communities before the partition, Muslims, Hindus and Sikhs. The simultaneous existence of all three religions promoted the air of coexistence and religious tolerance and the city continued to grow in relative peace. Hindu and Sikh temples and old buildings evacuated by the Hindus and Sikhs could be seen in the length and breadth of the city.

A vibrant Diaspora of half a million represents Mandi Bahauddin all over the globe, particularly in USA, France, Germany, Italy, Spain, Greece and Gulf States. The city undergone unprecedented modernization from the year 2000 to 2010, which was, in turn, a result of outstanding business growth witnessed by the city during the decade. Plaza states rapidly emerged with superstores and multinationals owing to a heavy influx of money from other countries. Remittances sent by expatriates have been the lifeline of the city over the years and the city life still owes its prosperity and profundity to these remittances. As a natural result of prosperity, the city doubled its size within the same decade giving a supreme boost to real estate industry.

The city had many civil servants and judges serving throughout the country. This improvement has greatly changed the local culture shifting from a purely agrarian to a business and bourgeois society.

2.3.5 Industry

Shahtaj Sugar Mills was located about 2 km west of the city stretched on an area of more than 20 acres (0.081 km^2) and has its sub-offices in Lahore and Karachi. Shahtaj Sugar Mills was one of the largest sugar plants in the country. The other major private sector factories in the city was Colony Sugar Mills (Formerly Phalia Sugar Mills), situated southeast of Phalia city. Mandi Bahauddin has a textile mills named Acro Textile Mills which was situated near Kuthyala Sheikhan, other industries of the district were Kino Polishing Industry, Flour Grinding & Storing Mills, and Rice Mills etc.

2.3.6 During British era

During the British rule in 1916 Pindi Bahauddin Railway station was made functional, while the government was establishing and introducing modern and essential public use implements for the public interest. Above mentioned Railway System was introduced and laid down to defend their Empire from the North called North Western Railway (NWR). After the first World War, the British gave and introduced new settlements in the sub-continent and the region was named “Gondal Bar” some of its land lying barren, for making it cultivable, a significant nature of irrigation plan was surveyed and the Lower Jhelum Canal was made functional and the water was released in 1902 in its main canal.

Chak Bandi of the area was made by Sir Malcum Heley and approximately 51 *Chaks* were settled and notified. Among 51 *Chaks* , the land was awarded to the people who worked for British Empire. The town grew up in early 20th century near the ancient village [Chak No. 51], where Sikh, Hindu and Muslim businessmen and land owners came to settle. The town was named Mandi Bahauddin after establishment of grain market in the area. Chak 51 originated as the center of the newly established town. The map of the *Chak* was drawn by John Alam. A famous grain market was setup in the Chak and was named and notified in 1920 as Mandi-Bahauddin, while in 1924, the Pindi-Bahauddin Railway station was notified. In 1937 when Mandi-Bahauddin was a town, it was given the status of a town committee. In 1941 it was given the status of a Municipal Committee. According to the Master plan, the reconstructing of the town initiated in 1923 and all the streets and roads were laid straight and wide. In 1946 nine gates and the wall surrounding the town was completed to protect the city from riots after the independence.

After the partition, when the Sikhs and the Hindus migrated to India, bulk of Muslim population migrated and settled there. In 1960 the city was given the status of Sub-Division and in 1963, the Rasul Barrage and Rasul-Qadirabad link canal project under Indus Basin irrigation project was started. The Project was managed by WAPDA, while a large colony for government employees and foreign contractors was constructed a few kilometers from Mandi Bahauddin. This projected was completed in 1968 by Engineer Riazur Rahman Shariff as the Project Director that brought numerous cultural changed to the city and helped the city to grow commercially. In 1993, the city was notified by Mian Manzoor Ahmed Vato, the then chief Minister of Punjab as District headquarters.

The district formed central portion of the *Chaj Doab* lying between Jhelum and Chenab rivers. Jatts consisting of sub-castes Gondal, Warraich, Tarar, Ranjha and Sahi dominate Mandi Bahauddin, consisting of three tehsils Mandi Bahauddin, Phalia and Malikwal. However, Gujjars and Mohajirs were also prominent in the local politics. Agriculture was the major profession in the district. Formerly a tehsil of Gujrat district, Mandi Bahauddin district consisted of two national and five provincial assembly seats.

The total area of city was 2,673 sq. kilometers, total number of male voters in was 370,528 and female voters were 278,521. The annual population growth rate of the district was 1.87 per cent and the urban ratio was 15.2 per cent. Around 99.1 per cent of the total population of the city was Muslims, while 0.6 per cent was Christians and 0.2 per cent Ahmadis. The main languages of the district were Punjabi spoken by 97 per cent; Urdu by 2.5 per cent; Pashto by 0.5 per cent; and Saraiki by 0.5 per cent people. Main occupations of the district were agriculture adopted by 40.7 per cent people; elementary occupations 40 per cent; service workers 6.5 per cent, crafts and related trade 4.2 per cent; professionals 3.1 per cent and machine operators 2.4 per cent.

2.3.7 Current situation

Originally Mandi Bahauddin was a village called Chak number 51 that expanded after the completion of *Rasul* Hydroelectric Power Station on Upper Jhelum Canal in 1901 and became an overcrowded market town famous for its agricultural markets (Grain Market, Vegetable Market and Livestock Market), while it's local industry was very well known of making colorful bed legs.

The name Mandi Bahauddin originated for two sources, Mandi (market) was prefixed

because it was a flourishing grain market and Bahauddin was borrowed from nearby old village Pindi Bahauddin, which has now became the part of the town. After the partition, thousands of refugees from India rehabilitated on the evacuee property of Sikh and Hindu landlords. Lately, after the construction of Rasul Barrage, people from the belt along southern edge of Salt Range up to Pind Dadan Khan and other areas across the River Jhelum came settling in the town. Due to migrations and increase in business activities, the town expanded in all directions. As a result, more than half of its population was lived outside the Municipal limits without any civic amenities. More unplanned localities and *kachi abadies* were emerging very rapidly, while the tendency of moving from rural to urban centers was on the increase.

People from adjoining villages used to come to exchange their agricultural products like grain, chickens and *Ghee* with match boxes and other commodities and to witness the 'bright lights' in the dusty town. Donkey carts to heavy vehicles were attached indiscriminately seen on any road. The town roads have bumps, wobbles and unauthorized speed breakers, while the roads and footpaths were over crowded with the encroachments and fast traffic, most of the cross-junctions like Hospital Chowk, Gurha Chowk, Sut Sire Chowk, College Chowk and two railway crossings were observed busy without the traffic signals.

The sugar mills were constructed 'farm to mill' road that could be used as a bypass for the traffic without entering into the city but it was not utilized because there were no arrangements to divert the heavy traffic on to the 20 feet wide metallic road. Mixture of slow and fast moving traffic, lack of footpaths, parking facilities, presence of bus and wagon terminals and many *tonga* stands aggravated the situation in the agricultural market town. The city was away

from Grand Trunk road but was well linked with Pind Dadan Khan, Jhelum, Kharian, Lalamusa, Gujrat, Gujranwala and Sargodha with railways and road network.

The small town having gridiron pattern (all roads and streets meeting at right angle) has developed haphazardly into an overcrowded city, *Rehries* and temporary shops have intruded all the main bazaars. The *Rehri wallas* have a strong union. They reverted any effort by municipal authorities or district administration to remove the encroachments, resultantly the vehicles even the pedestrians could not pass through bazaars. Dual carriage way was introduced from Sadar *Darwaza* gateway built in 1930 to Municipal committee office but the bifurcation was occupied by the encroachers.

The passages leading to outside the village were also overcrowded by the shops encroachers and by the linear developments along the roads. Number of shopping centers was built in the residential areas. Beside sugar mills, local shaped industrial concerns were spread around the town. Bed legs and colorful furniture were the famous products of the town. Commercial and industrial activities in the residential areas have put a great pressure on the demand of already deficient houses.

Grain Market was located in the centre of the town. Goods' Forwarding Agencies and lack of amenities have made the lives of the merchants and the common people of the Market. Large number of loader trucks were witnessed always standing in 4.3 acres of market area, which adversely affected the business. The surrounding area of town's landmark and highest building, majestic *Jamia* Mosque built at the corner of Grain Market was also noisy and bustling with commercial activities of 'Lohar' bazaar.

The condition of the Vegetable Market was more worst, while in the past it was a peaceful and less crowded market consisted of few shops. People could go to the market and buy some of the freshest fruit, vegetables and some of the choicest of spices, nuts, meat and chicken. But the peaceful activities were not possible because of heavy traffic, crowd of the people, presence of garbage dumps and encroachment by the shopkeepers and informal small traders that were usually observed occupying the roadsides of the *Sabzi Mandi*.

Wall chalking is another problem of the town. Political, religious, commercial slogans and different advertisements could be seen all over the town. Political slogans of different political leaders were seen pasted on the walls of the town.

Besides going to nearby *Rasul* Barrage for eating fish Kabab, there were no recreational or cultural facilities and no healthy activities in Mandi Bahauddin in spite of having the status of district headquarters awarded in 1993. The young men were seen playing cards on the roadsides or playing snooker, while a large number of the youngsters were seen selling and buying video players, TV and DVD players. The video shops were providing all the equipment on rental basis. There were two old cinema houses with 803 seating capacity. Degree colleges (one for boys and one for girls) were doing good jobs but not utilizing the funds for the betterment of the institutions and the students.

The Lalamusa-Sargodha-Khanewal railway was a profitable rout but only one Peshawar-Karachi train, Chenab Express was functional on the route. It could be useful to introduce at least one more Peshawar-Karachi express train for passengers, agricultural products and few of the minerals from Salt Range. The track was linked with Khewara Salt mines as well. Moreover, the

track was strategically important in case of any threat to Peshawar-Lahore-Karachi main railway track. In that case, Lalamusa-Sargodha-Khanewal rail route could take all the rail traffic. The "Mandi Bahauddin Development Plan 1986-2012″ has not even came to the tables of the people responsible for is execution but a possible nice start for the town should be declared at least for two bazaars (Sadar Bazaar and Committee Bazaar) totally pedestrian, vehicular traffic and animal transport.

2.3.8 Water supply

For the better health of people of Bahaudin- 11 water filtration plants have been installed in urban & rural areas and the TMA has improved the supply of clean water by replacing old pipes and carried out necessary repair of turbine. Day to day monitoring was being carried out to continue the supply of clean water.

2.3.9 Fire-fighting

To cope with the requirement of the tehsil, two new fire vehicles have been purchased at the cost of Rs.32.00 lacs because the old fire vehicle already possessed by TMA could not fulfilled the need of whole tehsil.

2.3.10 Sanitation

According to solid waste management plan, approved by the DCO M.B. Din to keep the city neat & clean, the urban area of the city has been divided into five zones in union councils and further divided into 15 beats. The sanitation staff has been deputed to each zone (uc) separately under the supervision of tehsil officers and chief officers of TMA. The Nazims of the urban union councils and supervisory staff of TMA were monitoring the functioning of

sanitation staff on daily basis. A new truck along with 15 containers and two tractors along with front head loader have been purchased by TMA for quick disposal of garbage and solid waste out of the city. A piece of land measuring 9 acres has been acquired for the dumping of solid waste. Further 9 acres have been identified, acquisition was under process and a notification under section 4 of land acquisition act, 1894, has been sent for the publication in the gazette.

2.3.11 Parks

Two parks, one for general public and one for ladies & children were maintained by the TMA; a new scheme for the establishment of Canal Park was under process.

2.3.12 General bus stand

All the private wagon stands have been closed and all the transport was managed by TMA. Due to that action, the income of TMA was increased to almost 100%.

2.3.13 Street lights

The street lights have been improved in the city and were maintained by TMA regularly. Work on new scheme for the installation of street lights from Sat Sira to district complex via district Jinnah Public School was underway.

2.3.14 Repair of roads

Main roads have been repaired and the work on links roads was in progress, while the removal of encroachment that was the major problem of the city. A campaign for the removal of encroachment was started under the supervision of tehsil officer (regulations).

2.3.15 Beautification of city

The beautification campaign of the city was also underway on self-help bases. General public of the village was being associated in the campaign.

2.3.16 Description of the district

District Mandi-Bahauddin was bounded on the north west by the River Jhelum, on the South-East by the river Chenab which separated it from Districts Gujranwalal and Gujrat and on the South west by District Sergogha. It is spread over an area of 2673 square Kilometers and comprised of three Tehsils;

- Mandi-Bahauddin
- Phalia
- Malakwal

2.3.15 Climate and soil condition

The district had moderate climate, which was hot in summer and cold in winter. During peak summer the day temperature shoots to 45 c. in the summer hot spells below but the winter months were very pleasant and the minimum temperature fall below 2 c. the average rain fall in the district was 50 Cm.

2.3.16 Total population of the district

According to Punjab Development Statistics 2008, total population of the Mandi-Bahauddin district was 1344 thousand persons out of which 688 thousands were males and 656 thousands were females. Density of population in the district was 502 persons per square kilometer.

2.3.17 Availability of manpower

As far as the availability of skilled labor was concerned, there were 06 technical/commercial/vocational institutes imparting training in various trades e.g. mechanical, electrical, auto-engineering, welding, wood working and commerce. Vocational institutions for women impart training in hand/machine embroidery, stitching and knitting etc. The output of the trained manpower was 3383 each year.

2.3.18 Traditional crafts

There was no mentionable traditional craft in the district.

2.3.19 Agriculture

Sugarcane, Wheat and Rice (cleaned) were the main crops grown in the district. Besides Jawar, Bajra, Tobacco, Mash, Moong-Masoor, Gram, Maize, Oil seed such as Rape/Mustard were also grown in minor quantities in the district.

2.3.20 Main fruits

Citrus and Guave were the main fruits grown in the district. Production of fruits during the period 2005-06 and 2007-08 is given as under:

	Fruit	Production (M. Tons)		
Sr. #		2005-06	2006-07	2007-08
1	Citrus	165533	96103	170004
2	Guava	17030	4234	3887

Source: Directorate of Agriculture, Crop Reporting Service, Punjab

Besides, Mango, Jaman, Dates and Banana were also grown in minor quantity in the district.

2.3.21 Main vegetables

Turnip, Potatoes, Cauliflower and Peas were the main vegetables, while Bottle Gourd, Brinjal, Carrot, Chillies, Lady-finger, Onion, Tomato and Garlic were also grown in the district in minor quantities.

2.3.22 Forests

An area of 5020.95 Hectares was under forests, which was about 1.87% of the total area of the district. There was also linear plantation of 746 Km alongside the roads/rails/canals in the district. Trees grown in the area were Kau, Phalai, Kikar and Shisham.

2.3.23 Production of Timber and fire-wood

The production of Timber and Fire-wood in the district during the period 2005-06 to 2007-08 is given in the following table:

Sr. #	**Year**	Production (Cubic Meters)	
		Timber	**Fire-Wood**
1	2005-06	1596	1787
2	2006-07	6088	4167
3	2007-08	1541	1328

Source: Forestry, Wildlife and Fisheries Department

2.3.24 Language

The major language of communication in the locale was Punjabi, while Urdu language was also spoken and understood by most of the people, those who could not speak Punjabi language used to speak a bilingual language having *Jhangvi* dialect.

2.3.25 Food

The food habits were dependent on the economic status of family, but the staple food of the common people was *Roti* made of wheat, Bajra, Jawar and Maize. The people of the village were used to take two meals a day were habitual of taking milk and Lassi. The most usded drinks were *Lassi* and tea. The *Lassi* was taking in the early morning and in the evening or as per their requirement, but the people were used to take tea many times in a day, especially in the breakfast.

Generally meat and chicken was taken once or twice a week, while the use of vegetables, *Daal* and *Karhi* were used throughout the week. At arrival of any guest, special dishes were prepared and offered. Agriculture was the important profession of the locale, vegetables were grown mostly in the kitchen gardens.

2.3.26 Social organization

The residents of the village hospitable, loving and retaining the mutual good relations and cooperation with each other. Being the agrarian society, most of the land was cultivated, while the old system of *Numberdari* was observed in the village. Awan and Kheri were the landlords while others were called *Kami*. The *Numberdar* was resolving the disputes and conflicts among the local people, while *Kamis* worked for the landlords in their fields and used to get wheat, fodder, rice sugar, milk and ghee etc, from the landowner but they were also doing petty jobs at the households of the farming elite.

During the sowing and harvesting seasons, the small landowners worked together, the activity was locally called *Vingar*. The *Wadera* of the village was more powerful and influential person usually a big landlord. There was *Beradri* system observed in the village. The concept of *Vingar* was declining day to day to the introduction of mechanization in the agriculture sector that has decreased the utility of more manpower as only one person could perform the activity with the help of tractor and thresher.

2.3.27 Family

The social organization was the important element in the village, and as a result the family structure was inevitable as the basic social and economic unit. There was observed a dominant joint family system among majority of the inhabitants but the system was losing its worth due to modernization and education especially with the introduction of mechanized machinery that enhanced the land productivity and as a result the income of the farmers was increased that changed the social setup of the village. Resultantly, the educated youth preferred the nuclear family system to retain their privacy and grooming of their children according to

their wishes without any interference of others, while it was demanded by the groom's parents in case of cousin marriages.

2.3.28 Kinship

The kinship being the basis of mutual relations among the families was very much observed in the village, all the economic activities, conflicts and mutual understanding revolved around the kinship. All type of social relationship was the blessing of kinship for the entire population of the area that was becoming stronger with the passage of time.

The inhabitants of the village belonged to five main castes, Sialswho were in majority, Umranasial, Kurianasial were the sub castes of Sial. The other major castes were Bohal, Budhra, Bhatti, Arian, Rana, Cheema and Gujjar, Dhirkhan, kumhar and gazer. The later three castes were used to provide their services to the landlord and other members of the village being service providers.

2.3.29 Marriage pattern

The dominant marriage pattern of the village was endogamy, while watta stta' (exchange marriages) was also in practice to some extent, the variation in the social status was affecting the marriage pattern, some of the families used to give land to their daughters in the form of dowry at the occasion of their marriages because giving of dowry was the traditional norm of the rural areas according to the ones economical status.

2.3.30 Economy

The economy of the selected village was based on agriculture, almost all the families were engaged in agriculture to some extent because of non-availability of jobs opportunity due to

having no industrial unit within the boundaries of the village. A large number of people cultivate the land, they cultivate, Wheat, Dha'an (Rice), Grain, Cotton, Jawar, Maiz and Sugarcane etc.

2.3.31 Occupations

Agriculture is the main occupation in the village, approximately 70% of the people were the agricultural workers, while some the villagers were engaged in government and private jobs of lower ranks jobs such as drivers, chowkidars and naib Qasids, while some were working in the factories and some in the commercial markets in Mandi Bahuddin city moreover, daily was laboring was the common earning method among the uneducated and unskilled population. It was also observed during the field work that some of the village families were running their business in the village and in other neighboring areas.

2.3.32 Agriculture

Agriculture was the occupation of more than 70% of the village, the agricultural land were irrigated either through the tube-well, while the other source of irrigation was the canal water, the canal zone was more productive than the tube-well zone because of water availability according to seasonal needs. The cultivated areas were producing cash crops as well as the fodders for animals and grains for human food. Sugarcane (gana), Rice was the main cash crops.

The famers of the village were practicing agriculture according to *Bakrami calendar* that used to identify the proper seasons for different crops. Following were the months for specific crops according to the calendar:

January : Maghar

February : poh

March	:	maah
April	:	phagan
May	:	cheat
June	:	bishakh
July	:	jeath
August	:	haarh
September	:	sawan
October	:	bhadoon
November	:	aswaj
December	:	katein

According to the local farmers:

"*SawanPhelaPutarSayalky da*" (Sawan is the first month of winter).

"Badoon Tary Rang Niraly Din no Dhoop, rat no palay".

(Badoon has variety of suitable timings)

2.3.33 Crops

There are two types of cropping seasons followed by the farmers of the village, one was *Kharif* arrived in the summer season, while other *Rabi* started in winter. In *Kharif* season wheat, sarson, moh, till and Kharif crops were grown, while in *Rabi,* rice, masoor, sugarcane, bajra and cotton were cultivated.

2.3.34 Livestock

The people in the locale used to keep the livestock for their own use. Livestock was collectively named by the local people as *Maal* and *Dhore*. They usually domesticated Buffalos, Goats, Cows, Oxen, Donkeys and Dogs. The Cows, Buffalos and Goats were domesticated for getting milk, butter, *desi ghee; meat* for domestic use, the extra quantity was sold in the markets or additional earnings, while the dung was used as fuel and manure for the kitchen gardens. Other animals like Oxen were used for agricultural purposes, while Donkeys for transportation use and Dogs for the protection of the households.

Among the domesticated animals Goats, Sheep, Cows and Buffalos were sold in the city market on the eve of *Bakra Eid*, while the milk was sold at the Nestle Milk Collection Centre which is situated in city. Goats and sheep's were also slaughtered on religious events like *Bakara Eid* and *Aqeeqa.*

2.3.35 Shops

In order to meet daily requirements of people of village, there was a small known as *Adda* situated in the middle of the village besides the bus stand consisted of three *Karyana* shops, a tent shop, a shoes store and two fruit and vegetables shops. The items of daily consumption like flour, sugar, soaps, ghee, and oil for cooking were readily available there, while for other shopping, the villagers used to go to the main market.

2.3.36 Religion

The population of the village was Muslim divided in two different groups, Sunni and Shia, majority was of the Sunnis Muslims, while Shia Muslims were in minority. The Sunni sect

was further divided into two sects *Brelvi* and *Deobandi*. The details have been given in the following table:

Table 3: Distribution of people according to sect

Sr. No	No. of people	Religious sects	percentage
1	50	Brelvi	55.5%
2	30	Deobandi	33.3%
3	10	Shia	11.1%
Total	90		100%

Source: socio-economic census form.

Thus there were three sects of Muslims in the village. The *Brelvi* sect was in majority, while the *Deobandi* was in minority. The people belonged to *Brelvi* were used to visit the shrines for offerings and *Manat.* There were separate mosques for Sunni sect and *Shia* sect where they used to gather for prayers. In the local term, mosques were called *Maseet*.

2.3.37 Mosque

Mosque was known as *Maseet,* a place of worship for Muslims where they offered prayers five times a day, while special prayers were *Juma* and *Eid* prayers. There was a *Jamia* (main) *Maseet* Abbubakr Sadique on the west side of the village that was also a religious institution where people get their religious doctrines and education. People sent their children for religious education. There were three *Maseets* and an *Imam Barghah* at the outer corner of the village. Every Masjid and Imam Barghaa has a loud speaker used for *Azaan* (prayers calling) and Friday as well as *Eids Khutbas* (speeches) were loudly practiced through the loud speakers to be

heard for the people sitting outside the building premises due to inadequate space inside. The loud speakers were also used for special announcements like deaths and misplacement of goods or children.

2.3.38 Graveyard

There was a main graveyard in the village Pir Adhiwal Wala Qabristan used by Sunni Muslims, while there was another graveyard for *Sheia* Muslims Tibby Wala Qabaristan. The graves were mostly muddy but of wealthy families were cemented. There was a separated specious open ground used for funeral prayers.

2.3.39 Birth Ceremonies:

At the birth of a child, rejoicing taken place in the family, the elder male member of the family or Imam of mosque was called to call *Banng* (Azaan) in the ears of the newborn, however, birth a son was preferred rather than daughters because the family land, that was further divided when a daughter was married and inherited property was given to her as her right share whereas the political stratagem of the family depends on men. The comments on the birth of boy given by the people were:

"Satt Satt moubarkanhon"

"Many mamy happy returns"

"Shala Lamian hayatian ala hos"

"May God give him long life?"

A traditional ritual to save the baby boy from *Nazar* was celebrated in the village by hanging the branches of *Shirin* tree (Albizzia jajaba) at the door of the house that implies the knocking of the door before entering the house by both women and men, while the first food given to the child called *Ghutti.* The comments given by the respondents on the occasion were:

"Shala bakhat changa hos"

(May he have a lucky future life?)

2.3.40 Marriage rituals

Marriage was an important affair for the people of the village, on such event many of the rituals were performed according to the prevalent cultural norms: The most important activities of the marriage were:

- Mehndi
- Nikah
- Barat
- Walima

2.3.40.1 Nikah

The *Nikah* was the most important ceremony performed at the time of marriage, usually in the mosques where all the family members gather from both sides, three witnesses and one advocate were identified to get the consents of the bride, while the groom gave its consent before the *Nikah Khuwan* usually a religious leader at the time of Nikah and after the completion of the ceremony, sweets were distributed among the people.

People go to the home of bride in the form of Janj (gathering) and singing different songs. After Nikah they take Doli (a small bed in which bride is sitting) and came back to the groom home. The last important ritual was *Walima* that was celebrated according to *Sunnah*. All the family members from both sides were invited to attend; they were served with food especially prepared for the occasion consisted of chicken curry, *Pulao* and other delicious dishes including sweet zarda or *halwa*.

2.3.40.2 Death ceremonies

Death was also an important event for the villagers, soon after the death, the announcement was made through the mosque loud speakers or by sending *Kammis* to inform the relatives, friends and other villagers, all of them gathered at the grieved household. The *Kumhar* (grave maker) was informed to prepare the grave, while some of the near relatives used to bring roses, scents and coffin (clothes for deceased). All the activities performed were the responsibility of the concerned persons without taking any payment from the grieved family. After the *Gusal,* the body was taken to the graveyard in a procession, where after *Namaz-e-Janaza,* the body was buried. After the burial, three main sermons were held; the first was the *Khatam-e-Qul,* celebrated on the third day, second was celebrated on 40th day called *Chehlm* and third on completion of a year known as *Salana Khatam*. During all the rituals, religious persons and all the relatives, friends and neighbors participated to recited the Holy Quran and *Dua* for the dead soul collectively and after that they were served with food mostly cocked Chawal (rice) with mutton or chicken curry.

2.3.40.3 Dera's or Khoo

Almost all the landowners who cultivated their land had a separated building called *dera* mostly called *Khoo* used by the farming family for social get to gathers' or for the guests. Thus farmers spend their most of the time at *Khoo* entertaining their guests, meeting their relatives and friends and resolving each other's problems, while the family affairs were also discussed there along with the enjoyment of *Huka* (tobacco smoking pipe).

The *dera* was usually consisted of two to three spacious in addition to the conference room for the storage of grain and fodder, while sometimes, the cattle were also kept there. Every *dera* had a *Kurli* (manger) a *toka* (fodder cutter) and a water pump. During the harvesting season, the working *Kammis* stayed there after their laborious work in the fields of the landlord owning the *dera* with his name.

2.3.40.4 Electricity

The village was electrified with the efforts of the MNA of the area, almost every household had electric connection facilitating them to use electrical appliances within the households such as iron, washing machines, refrigerators, fans etc., due to the frequent fluctuation, the people used stabilizers, while they do not had any remedy for electricity breakdown that was not unusual for them.

2.3.40.5 Health facilities

There was a hospital in the village known as rural health center of village; in addition to that, the People have different kinds of health facilities available in the village but most of the population was inclined towards spiritual treatments for the ailment of disease like *Dum* and

Taweez because of their strong belief. For that purposed they used to visit the *Pirs, spiritual healers* and shrines.

2.3.40.6 Transport & Post office

The village was well connected with the rest of the country because there were roads and plenty of transport running between the village and many of the surrounding areas, while their access to mega urban cities was also very frequent. The people of the village used to trawel through coaches, buses, personal cars and motorcycles, while the railway facility was also availed by some of the long distance travelers from the neighboring city.

As far as the postage facility, a sub-post office of the village was helping the people to avail any kind of post facility. The delivery and picking the post was very frequent on daily basis by the staff of the sub-post office. The staff of the post office was enjoying the modern tools in dealing with their day to day problems.

Chapter No. 3

3.1 Introduction

Women's participation in labor is of critical importance in determining living standard, dependency burden and saving pattern in households. Women constitute about half of the total population in Pakistan. But in Pakistan mostly women's work takes place in non-economic activities in the home or the informal sector. In the recent past, women contribution in modern sector activities has been increased. Factors determining the employment of women are extremely complex. At the individual level women's decision to work is subject to such factors as the availability of jobs, education level and skills. At the aggregate level female labor force participation is largely determined by the factors that are indicative of economic, social and demographic circumstances of the locality under consideration. Women are induced to participate as labor by the push and pull factors. The push factors mainly represent financial pressure. Women from the poorest families are pushed into the labor activities due to severe economic necessity. Particularly, in a society divided by income groups, women belonging to lower income classes are more likely to participate in the economic activities. A high family income might greatly reduce the necessity of augmenting income by involving women. The pull factors are such attributes that create demand for labor and include the level of education, training and experience.

The international development community has recognized that agriculture as an engine of growth and poverty reduction in countries where it is the main occupation of the poor. But the agricultural sector in many developing countries is underperforming, in part because women, who represent a crucial resource in agriculture and the rural economy through their roles as

farmers, laborers and entrepreneurs, almost every-where face more severe constraints than men in access to productive resources. Efforts by national governments and the international community to achieve their goals for agricultural development, economic growth and food security will be strengthened and accelerated if they build on the contributions that women make and take steps to alleviate these constraints.

Women make essential contributions to the agricultural and rural economies in all developing countries. Their roles vary considerably between and within regions and are changing rapidly in many parts of the world, where economic and social forces are transforming the agricultural sector. Rural women often manage complex households and pursue multiple livelihood strategies. Their activities typically include producing agricultural crops, tending animals, processing and preparing food, working for wages in agricultural or other rural enterprises, collecting fuel and water, engaging in trade and marketing, caring for family members and maintaining their homes. Many of these activities are not defined as "economically active employment" in national accounts but they are essential to the well-being of rural households.

3.2 Women part

Women have made important contributions to the agricultural and rural economies of all regions of the world. However, the exact of contribution both in terms of magnitude and of its nature is often difficult to assess and shows a high degree of variation across countries and regions. It looks at demographic trends in rural areas with regard to the gender composition of rural populations.

3.3 Women as labor force

Two types of data can contribute to measuring the contribution of women in the agricultural labor force. Statistics on the share of women contribution in the economy and the agriculture analyzed the time spent by men and women in different activities.

3.4 Economic activity

Data on the economically active population in agriculture are available for many countries, and provided the most comprehensive measure of the participation of women in agriculture. In this measure, an individual is reported as being in the agricultural labor force if he or she reports that agriculture is his or her main economic activity. However, these data may underestimate female participation in agriculture for reasons discussed below, and caution is advised in interpreting changes over time because improvements in data collection may be responsible for some of the observed changes.

3.5 The Impact of new technology on women farmers

The technological innovations have decreased women's workload, resultantly the income of the women wage earners has also that has directly lowered the family nutritional status. More recent researches have analyzed that how the inclusion of gender in technology help to bring about improved output, economic growth, and household welfare. Many of the empirical studies are on rice and small production systems in Asia and especially in Pakistan.

3.6. Labor use and employment

The empirical evidence on the effects of technological change on labor use and employment is mixed, it depends on other things too, like the crop and the use of technology, the

household's access to land, women's socio-economic standing, and intra-household dynamics. For examining the effects of high-yielding rice varieties, it is important to distinguish between seed-fertilizer technology packages and mechanical field harvest, and post-harvest operations that often accompany the new technology. It decreased the labor use and raised the demand for women's labor relatively more than for that of men to concentrate on their households. The increased income from rice enabled women in landowner's households to withdraw from field work. Where mechanical operations were adopted along with the rice, women's work intensity decreased, both in rice and non-rice production. Mechanization also displaced landless female labor from wage employment. Unlike men, women displaced as workers or farmers were not offered training for alternative employment. Decreased in the demand for women's labor as a result of mechanized rice cultivation is not always associated with improved wages and incomes, although there is the possibility that observed reductions in women's wages could have been greater without the introduction of rice crop. A more relevant measure is how women's real wages changed relatively to men's wages. The small amount of available evidence on this issue is mixed. The new-technology had a positive income effect for females and slightly reduced the gap between men's and women's wages. On the other hand, in the selected locale with the introduction of irrigated rice as a cash crop, women became wage workers on their husband's rice farms; and, while they earned their opportunity wage, this amounted to less than one-fourth of the net increase in household income generated by their labor. Because women did not have access to labor-saving tools and had less time than men to devote to agriculture; due to competing demands from household work, their labor productivity was consistently lower than men's by an average of roughly less than 70 percent.

Numerous studies have shown that mechanization has displaced women and reduced their income and employment. Scott and Carr (1985) estimated that the displacement of landless labor due to rice mechanization in Pakistan reduced the incomes of the poorest 5 percent of women by 55 percent annually. This represented a loss of 15 percent of family income. In other countries of Asia like Indonesia, mechanical rice processing eliminated about 1.25 million woman days of labor in Java alone the equivalent of $50 million in annual earnings.

3.7 Nutrition and welfare

There is growing evidence on the nutritional impact of agricultural innovations mediated by changes in women's work roles. Some respondents have assumed, but without empirical evidence, that family nutritional levels have been threatened by women's diversion to cash crop production. Women's incomes fell and women's role in the rice production declined, rice became a communal crop and more rice was retained for domestic consumption than for market sale, while there are variations across settings, women's direct control over income from the new cash crops was much less than men's and was often disproportional to their labor input. However, household food expenditures, as well as other expenditures with high welfare content, increased in absolute terms as incomes controlled by men rose; and this increase had a positive, although not large, effect on child nutritional status.

The increases in women's wage rates accompanying technological change in agriculture could have a negative effect on nutritional levels, because the cost of women's time spent on home production (and child rearing) increases. In particular, the concern has been that increased market work might cause women to curtail breastfeeding, as well as other health care activities that are critical to preventing child malnutrition. However, a recent review of the empirical

evidence on the relationship of women's market work to infant feeding practices and child nutrition reveals that there is no clear association between women's work status and breastfeeding patterns or child nutritional status.

3.8 Need of micro enterprise projects

There is the need to launch microenterprise projects, because they reinforced a private sector orientation that was much in vogue in development assistance and in part because they targeted a sector that increases in importance in the face of economic crises and modern sector unemployment.

Microenterprise projects deliver short term flexible loans with few collateral requirements to entrepreneurs who operate very small scale businesses rural and urban informal markets. A distinctive feature of these projects, which in part accounts for their relative success, is that they are directed to women and men who are already integrated into market production and need only to strengthen their productivity and earnings rather than join the market economy. For instance, microenterprise projects provide working capital to rice huskers, and other who pursue home-based enterprises of the sort that rural women commonly operate.

3.9 The role of rural women in agriculture

At the time of independence in 1947, Pakistan's population was 32.5 million, in 2006, the figured jumped to 156.77 million. Despite several efforts to control the population, the growth rate continued to climb at an alarming rate of 2.6% per annum.

Based on Economic Survey of Pakistan, 2006-07, 65% of the population lives in rural areas and is directly or indirectly linked with agriculture and its related fields. Agriculture and

agro based industry is the back bone of the Pakistan economy. The Federal Labor Force Survey of Pakistan mentions in its 2005/2006 report that the employment rate for women is 20.14 per cent. In rural and urban areas, women's participation is 23.63 and 12.53 per cent respectively. A comparison of this figure with the female population refers to a segment of population which is under represented by 26.36 per cent in its own as women are 47.5 per cent of the total population.

When compared with other semi-industrialized Muslim countries e.g. Turkey and Malaysia, one finds that the representation of women in economic activities in Pakistan is substantially lower. However, it is encouraging to note that more than 45 per cent of the adult women population has made its way into the national economic scene, but the women's involvement in non-agricultural sector is only 6.7 per cent.

Besides the agriculture sector, large numbers of women entrepreneurs are found in Pakistan's traditional business sector, running small business such as boutiques, parlors, bakeries while some of them are also involved in manufacturing and consultancies services. The largest number of skilled women labor force is employed in garments and handicrafts sector. In general, urban women are better placed than those working in rural areas.

Women are either unaware of modern marketing tactics that would fetch better returns for the same product or remain restrained to the local markets due to a number of other problems. Furthermore, most women entrepreneurs are small business owners, operating businesses from homes and they have low level of education and technical skills. In addition, all financial aspects are controlled by male family members. Economic necessity, however is now forcing more and more women to engage in some form of employment and income generation activities.

Like many other developing countries, in Pakistan, the role of women in the national development has begun to attract attention in recent years. In Pakistan, women's social and economic development is not only an issue about equalizing women with men but rather an issue of Pakistan's socio-economic development. Equality and equity between men and women is an academic issue but more important is the ground reality which says that nearly half of the population is lagging behind in all walks of life because opportunities of access to education, health-care, and choice of profession for women are almost negligible. And the discrimination on the basis of sex has proved counterproductive.

Despite the rhetoric claims of successive governments since mid-eighties that there has been improvement in education and health sectors, the real picture is much different. In order to develop social standards of women and to enhance their participation in all economic activities, there is need to equip them with quality education in the areas of latest technology, business and finance, manufacturing, information technology, service sector and of course, agriculture and industry.

3.10 Participation of rural women in agriculture and household activities

Both men and women play an important role in feeding the world, according to an estimate, women produce more than 50% of the total world food. Women's contribution in agricultural labor force in developed countries is 36.7% while, it is about 43.6% in developing countries (FAO, 1999). In Asian countries, women account for approximately 50.0% of food production overall in the region, with considerable variation from country to country. In the Philippines their participation in agricultural labor force is only 4.0%, while 35.0% in Malaysia, 54.0% in Indonesia and over 60.0% in Thailand. In Southeast Asia, women play a major role in

rice production, particularly in sowing, transplanting, harvesting and processing. In addition to agricultural activities women often devote more time and resources under their control towards improving household concerns related to food security as compared to men and their involvement was significant in term of decision making authority.

In rural areas of Pakistan, women play a major role in agricultural production, livestock raising and cottage industries and remain busy from dawn to dusk to supply food to men in fields, fetch water, collect fuel wood, and manage livestock. They are equally efficient in seed bed preparation, tilling, sowing, fertilizer application, fodder cutting, weeding, intercultural operations, transplanting, husking, threshing, drying, storing cereals and fodder, selling agricultural commodities and harvesting of all the crops, fruits and vegetables. Women often devote more time to carry out these tasks than men do and their participation is notably higher in food storage and processing. They carry out these tasks in addition to their normal household activities.

For the crops, women's participation is particularly high in cotton, rice and vegetables. Rice and cotton cultivation in Sindh and Punjab jointly account for more than one-third of women's annual agricultural activities. In agricultural activities women spent more than their one third time in rice and cotton growing areas.

Women's participation in production of major field crops has been estimated to be approximately 30.0% in rice, 25.0% in cotton, 23.0% in sugarcane, 18.0% in wheat and 26.0% in vegetables (Ahmed &Hussain, 2004).

In Pakistan, caring for livestock takes up 35.0% of a village women's time, and it is hard to walk around a village without seeing hens, goats, cows, and buffaloes etc. (Taylor, 1985). In addition to their participation in agricultural activities, they also involve in self-reliance decision

making in both economic and social spheres within the household. Women also perform various household tasks, such as, cooking, washing, house cleaning, fetching water, collecting fire woods and care of children and elderly members of the family. Women, living in nuclear families participate more intensively in household activities. In rural areas women fully involve during the whole day in domestic labor activities like looking after the children, cleaning the house, cooking, washing and the many other activities. Although their participation in agricultural and household activities are very high but the educational facilities and enrollment of female in primary education is hopeless because their enrollment has stayed roughly the same for the country as a whole, at about 30% (Lloyd *et al.,* 2002). Other than education women's full participation in economic and household activities impeded by cultural and legal constraints, which limits women's participation by women's relative lack of time and mobility due to their workloads and multiple roles. They are deprived off not only in the field of agriculture, but also in all other fields like education, nutrition and health. For this purpose the present research study was designed to investigate that to what extent women participate in agricultural and household activities.

3.11 Women in agriculture and allied fields

Rural woman is intensively involved in agriculture and its allied fields. She performs numerous labor intensive jobs such as weeding, hoeing, grass cutting, picking, cotton stick collections, separation of seeds from fiber. Women are also expected to collect wood from fields. This wood is being used as a major fuel source for cooking. Because of the increasing population pressure, over grazing and desertification, women face difficulties in searching of fire wood. Clean drinking water is another major problem in rural Pakistan. Like collection of wood,

fetching water from remote areas is also the duty of women. Because a rural woman is responsible for farm activities, keeping of livestock and its other associated activities like milking, milk processing, and preparation of ghee are also carried out by the women.

3.12 Livestock

Livestock is the primary subsistent activity used to meet household food needs as well as supplement farm income. The majority of farmers own some livestock. The pattern of livestock strength is mainly influenced by various factors such as farm size, cropping pattern, availability of range-lands including fodder and pasture. It is common practice in the rural areas of Pakistan to give an animal as part of a women's dowry. The number of small ruminants (sheep and goat) is 3 per farm. Studies have revealed rural women earn extra income from the sale of animals. Mostly women are engaged in cleaning of animal, sheds, watering and milking the animals. Furthermore, rural women are also responsible for collection, preparing dung cakes an activity that also brings additional income to poor families. Evidently, rural women are involved in almost all livestock related activities. Except grazing, all other livestock management activities are predominantly performed by females. Males, however, share the responsibility of taking care of sick animals. It is evident that the women are playing a dominant role in the livestock production and management activities.

Poultry farming is one of the major sources of rural economy. The rate of women in poultry farming at household level is the central in poultry industry. Even though rural women are not using modern management techniques, such as vaccination and improved feed, but their poultry enterprise is impressive. Every year, income from poultry farming has been rising. In

order to generate more and more income, rural women often sell all eggs and poultry meat and left nothing for personal use.

3.13 Health of rural women

Due to poverty and lack of required level of proteins, most of the women had a very poor health. Most of women suffer from malnutrition. The research also examines the socio-economic characteristics of the rural household. It is revealed that the average family size in rural area is 9.87 and is composed of two males, two females, five children, and two elderly. Almost 48% of a family is not in a working age. There is wide gap between males and females in educational level. The difference in gender involvement in off-farm working is highly significant as the average involvement of adult males in off farm. Whereas, only one female is involved in off-farm activities, which are low as compared to male. Better education level of males might have provided them access to off farm job opportunities. Female labor forces are engaged in agriculture and its allied fields and play very tough role like milking, feed and watch of the livestock. Their brittle bodies transplant rice crop in the burning month of May/ July. Likewise, cotton grower's spray with poisonous pesticides to the crop; as women pick cotton from sunrise to sun set, it develops allergies, their skin festers. They are always besieged by ailments and medico abnormalities and usually die untreated. Neither government take steps to safe them. The study also noted that majority of the rural women are uneducated, unskilled and tradition-bounded, therefore their productive capacities are also low, and counted as unskilled labor. Though rural women also help to produce the staple crops like rice, wheat, and maize, but her

contribution is secondary in staple crop production, however, in legumes and vegetables, her role is instrumental.

The daily routine work begins from house cleaning, fetching drinking water, dish washing, laundry, preparing food for family, care of children, tailoring and sewing clothes. She manages these activities very smartly. Even though rural women supply half of the Pakistan's food production, yet her own food security is always at risk. Women farmers are frequently ignored in development strategies and policies. In most of the developing countries, including Pakistan, both men and women farmers do not have access to adequate resources, but women's are even more constrained because of cultural, traditional and sociological factors. Accurate information about men's and women's relative access to, and control over resources is crucial in the development of food security strategies.

3.14 Traditional agricultural production

Women have played a significant role in traditional agricultural production technology in Pakistani societies, because women's contribution was so central in both the agricultural division of labor and its reproduction, traditional structures of resource allocation have provided them access to the basic factors of production in agriculture. Despite the fact that they remained socially subordinate to men, they participated in resource control, decision making, and production. However in programs for improvement of agricultural technologies, women are seldom recipients of the benefits, although they no doubt are capable of using them. In the cases cited in the literature where women either could not obtain the new technology or were adversely affected by it, underlying social, cultural, and economic conditions were primarily responsible. This was usually compounded by insensitivity in program design and implementation.

Development programs can produce drastic changes within households by altering the perceived value of women's contribution and the traditional structures of authority and resource allocation. Three major sets of interrelated concerns characterize the literature on this subject.

First, development programs can change the distribution of resource control by allowing those already favored in traditional and evolving structures to benefit disproportionally from growth. In the past this has largely been addressed as a problem between households. However, it is becoming increasingly evident that similar changes may also affect distribution of resources within households.

Second, if changes lead to the marginalization of women in production decision making, they may result in both welfare and efficiency losses.

Third, the higher labor intensity usually accompanying technological change for small farmers is increasing labor demands on already overburdened rural women. Perhaps the most pervasive factor in these changes is the ease with which women's roles can be overlooked; this frequently occurs. The usual theoretical or analytical models and agricultural statistics tend to be gender neutral; at best they are of limited value in analyzing women's role. Another problem is the usually unstated assumptions of farm management that a single manager farmer supervises the labor and use of other resources on all household fields by 'his' paid workers and 'unpaid family workers.' Examination of the consequences of this myth and a better analytical framework are needed. The primary and most obvious consequence of adopting an inadequate farm management model is the loss of efficiency from having a wide array of institutions including legal ones develop and deliver input packages and services for improving farm productivity. These packages and services do not reach all farm decision makers and hence do not address all the relevant constraints.

Illustrations are readily found in adaptive research, development of technology packages, and in extension services and education. Equity losses for women also stem from failure to reach women; these losses result from the reduction in women's contribution to management of family farms and the consequently greater potential for women's economic and social marginalization.

3.15 Organization of household production

Organization of household production is the result of socio-cultural norms and practices, the prevailing agro ecological conditions, and the needs of the dominant agricultural production systems. Both economic and socio-cultural factors are important in the organization of household activities and in the patterns of authority, responsibilities, rights, and obligations. They are therefore also central in defining the productive roles of individuals. It may also be argued that shifts in both opportunities and demands imposed externally lead to shifts in the organization of household production through changes in relative levels of resource access and decision making opportunities for individuals.

The economic means and interdependence of members of the household is a central factor in the organization of household production. Apart from any psychosocial benefits, household membership gives access to the critical economic resources such as land, labor, and capital assets. However, since the mechanisms providing this access are usually significantly different for men and women, so is their respective need for independent income sources (self-provisioning).

One needs to go beyond the economic component of relations between household members to understand gender roles and relations. One observation consistent across various

systems is the distribution of responsibility for the tradable and non-tradable in household production. For women, this means reproductive and directly survival-related activities, such as fetching fuel and water and the processing and preparation of food. With few exceptions, additional productive activities, agricultural or otherwise, are an extension of women's basic role in subsistence activities.

3.16 Control of agricultural resources

Though it is clear that women need to have access to household resources for both production and consumption, but it is not clear to what extent they have disposal rights on surplus production beyond the immediate subsistence needs of neither the family nor how these disposal rights are determined. Their rights to the surplus, if any, are secondary to men's in all patrilineal systems and appear to be determined by women's productive role and bargaining capacity. In pastoral systems, men control cattle, and women's rights are largely limited to consumption needs. They can seldom inherit or dispose of cattle. Small animals, such as goats and sheep, however, can be owned by women in both Eastern Punjab.

The most clearly recognized primary rights of women within the households are for agricultural output to meet subsistence needs, whether from their own production or from their husbands'. In addition, when women retain

Unsatisfactory rights to production output in their own kinship clan, they need to make transfers to the group out of their own production. The precise pattern of the obligations of men and women to the spousal unit and to clan members varies. Men's primary role in the exchange economy is surplus accumulation, usually in the form of cattle. This is related chiefly to longer-

term economic security, which may often be achieved through the exchange of cattle for additional wives (with concomitant increments in household labor supply) and through sale of cattle in times of crop failure.

While tracing the difference of constraints on women's access to land, on women's time, and on women's ability to mobilize extra labor outside their own kinship group. This is frequently observed in patrilineal communities. Women find it easier to obtain land for farming from their own patrilineage, but distance determines if it is feasible for them to cultivate it.

3.17 Role's variation

The variation in geographical patterns of agricultural organization and women's roles has received considerable attention; their variations within communities had been relatively neglected. This probably stems from the assumption of a relatively unstratified and homogeneous rural society. But this would be valid only in comparison with parts of South Asia. Variation in women's roles within communities is most readily evident when female-headed and joint-production households are compared. In such a comparison, many specializations of crop or activity by gender tend to break down. There also appears to be a strong link between socioeconomic class and gender roles. A remarkably hierarchical social structure accompanied by high variation in women's roles is shown by anthropological studies.

The difference in women's role between female-headed households and joint households has received considerable attention. There is evidence that female-headed households are widely prevalent in rural areas and may occur in various economic strata.

3.18 Irrigated rice

Traditionally, women in the selected locale spent most of their time growing sorghum on fields assigned to them by heads of compounds; they had a minimal obligation to work either on their husband's personal fields or on collective fields. Grain from the woman's field was the first source of food for her domestic unit (woman, man, and children). Use of grain from the collective field of the compound was the last resort. With the introduction of irrigated rice managed by men the pattern of labor organization in the household changed dramatically. Even when women were assigned rice plots by the irrigation authorities, the proceeds were controlled by men, a practice believed to be consistent with tradition. Because of its higher labor requirement, rice requires joint cultivation by all members of the domestic unit. The labor requirement for rice planting and transplanting conflicted with sorghum (a rice kind) harvesting and postharvest work. It is also evident that wage rates for rice were extremely high due to the marginal value of labor input and were higher than the returns from any alternative uses of women's time. However, it does not appear that women were free to choose the option of wage labor and appeared to have little incentive for labor input in rice.

Chapter No. 4

4.1 Women and agriculture

Over the last 25 years, the role of women in agriculture has become familiar and well-developed subject. Whereas small groups of women met at local and regional conferences to examine the roles of women on farms and in agricultural development and to bring attention to their importance. Broadly speaking, the early studies legitimized the idea of women as productive partners in agriculture, discovering and documenting the various roles played by women as farmers, farm wives, and agricultural professionals and recounting the stories of successful women in these roles.

Many researchers have also begun to include rural and farm women as participants in determining the directions of new studies, in an effort to assure some tangible benefits come from the work. Given the level of interest evidenced by participation in the Second International Conference on Women in Agriculture, the new millennium promises continued expansion and refinement of our understanding of women in agriculture. We can also expect a growing need to apply that understanding to the increasingly complex and global challenges of food production, farm structure, and rural development.

We have learned a great deal in a short time about women's roles and experiences of agriculture and rural life. Fundamental among our discoveries has been the certainty that women farm, on their own in some cases, or as partners in the work of family farms, performing essential household production tasks, as well as tending gardens, livestock, and assisting in the fields as needed. Indeed, we have learned that in many cultures women are the farmers, on whom

families and communities depend for food production. We have also learned that women often help support family farm operations or their households through paid farm work for others, or through off-farm and nonfarm businesses or paid employment.

From this knowledge has come further research and discussion of issues such as women's access to land and credit; the effects of policies, programs, and laws on farm and rural women; the consequences of changes in farm structure for the roles of women; the connections between support of the needs of farm and rural women and poverty and low-income rural households; and the implications of cultural, ethnic, and racial differences on the needs of women on farms. More recently has comes discussion of rural and farm women as important players in successful approaches to food security and in the development and adoption of sustainable agricultural practices. Much of the researches of the past of two decades has focused on recognition and empowerment of women in agriculture--as farmers, workers, professionals, and within households. For women in developed countries, the focus has largely been on identifying and removing barriers to full participation in the work and rewards of agriculture and rural development, and on recognizing and developing women's leadership as scientists, teachers, program agents, and in voluntary organizations. For women in developing countries, however, the focus has often been on the shortcomings of international agricultural development programs. Many studies have analyzed the implications for successful development programs and policies of incorporating an accurate understanding of women's roles in agricultural systems, and of involving women as leaders and professionals in the transfer of new technologies and practices.

More recently, studies of women in international development have also begun to analyze the effects of programs and policies on women directly. Although perhaps a subtle change in

perspective, the new approach moves beyond analyzing the ways in which understanding women's roles can make agricultural and rural development programs work more effectively, to analyzing whether some kinds of development programs should not be implemented because of their potential detrimental effects on women's roles.

The works cited in the bibliography have been drawn from the National Agricultural Library's AGRICOLA database. AGRICOLA (AGRICulturalOnLine Access) was a bibliographic database consisting of literature citations for journal articles, monographs, serials, theses, patents, proceedings, audiovisual materials, software, electronic documents, and technical reports. As well as an index, AGRICOLA is also a locator system for materials contained in the collection of the National Agricultural Library, the largest collection of agricultural literature in the world. Available since 1970, this database presently contains over 3 million records. The database search strategy for Women in Agriculture and Rural Life entailed using a variety of keywords and database-specific subject codes. Database coverage was January 1970 through March 1998. The materials cited in this bibliography are limited to those in English, or with English summaries. For details on the search, see Appendix A.

The bibliography was organized by three subject categories: "women on the land", "women as agricultural professionals", and "bibliographies and non-print media". Each of the three subject categories was further divided into seven geographical designations: North America (including Mexico), South America (including Central America and the Caribbean), Europe (including Russia/Soviet Union), Asia (including the Pacific Islands), Africa, Australia/New Zealand, and International. Users will also find author indices at the end of the bibliography.

The category "women on the land" was initially divided into three categories, women as farmers and farm workers, women in farm families, and rural nonfarm women, but we quickly discovered those categories that were deeply intertwined. Separating works on women as farmers from those on women in farm families or on rural nonfarm women was virtually impossible and not likely to be very useful. Most studies analyze the interactions of a range of roles played by women, especially combining women's farm work with household and family tasks and with nonfarm wage or volunteer work. Moreover, the terms "rural" and "farm" are often used interchangeably, especially in the international development literature, making it difficult to accurately separate works on farm women from works on rural nonfarm women.

As a result, the bulk of the citations in the bibliography fall into the large category "women on the land." Users will find studies on women's work as independent farmers, farm managers, and farm landlords, and as both paid and unpaid agricultural workers, within the family or for neighbors or unrelated employers. The category included studies on women's household work on family farms and in families of farm workers and women's roles as farm wives and mothers.

Research on women's off-farm employment and nonfarm businesses, women's activities in farm and rural organizations, and women's education in both agricultural technologies and nonfarm employment skills was also included under "women on the land", as are studies on women's role in farm structure, sustainable agriculture, rural development programs, and food security issues. Some citations were clearly about nonfarm rural women, but most of them were relating to employment and other rural development issues that could affect farm women as well. Although the category was very broad, we hope the geographical subdivisions will help users focus on items of particular interest to their own research.

The category "women as agricultural professionals" includes research on women's experiences as vocational agriculture teachers; agricultural economists and engineers; botanists and entomologists; foresters and conservationists; extension home economists; and veterinarians. It also includes studies of the educational programs that produce such professionals and the attitudes of various professions and professional societies towards their women members. The category "bibliographies and non-print media" contains citations for both general works and items that would fall in other categories except for their format. Users should check the category for coverage of the subject matter.

The author wished to thank their respective USDA agencies for their support in compiling the bibliography and also to thank AFSIC staff for his patient and careful database editing; and Rebecca Thompson, NAL Information Center Branch Staff, for technical advice and help. Special thanks go to Jane Potter Gates, AFSIC Coordinator, for originating and organizing this project, and for her steadfast encouragement.

Agriculture is major economic source in all over the world. It has major contribution in each country development. Developing nations are more dependent on the agriculture base economy. Many Asian and south American countries produce the major food for all over the world. It is the need of the time to enhance the production while using the new technology in agriculture. The countries which are using the new trends and methods are growing very fast in this field.

Women have great worth in agriculture settings. In each country women play their vigorous role in this productive sector. But women are paid very less as compare to men. This can be gender discrimination. Karl Marx also pointed out this dilemma that women are less paid in farming that could not appreciate women participation in agriculture department any more. Women are

playing vital role for the development of many developing countries, but women are also marginalized in farming likewise other sectors. Pakistan is basically an agrarian country and is trying its best to stand in the row of developed nations. For achieving this objective, it is necessary to utilize all of its resources both physical and human to their full capacity in productive manners. In all societies women development is a prerequisite for overall national progress. In Pakistan, most of the rural families are poor. The women of these families work with men to increase their family income as well as to participate in agricultural activities. Rural women are economically active but are not economically independent. In this work I'll tried to my best to understand their economic conditions, their participation level, income generating activities in which female are engaged in agricultural areas, the problems faced by these women and to assess the female situation in aspect of division of labor in agriculture.

4.2 Historical period

Women have to contribute to run the family system as well as to take care of her children. Women are facing the role conflict. They have to give proper attention to their children and earn for their better livelihood. Women cannot perform the both role at the same time properly. There should be some duty relaxation for the women so that she can give time to her children. Carpenter (2000) stated that when production period are on its peak then women contribute her time more than a man, she also assist at the same time to her children and take care of her home. It is proved that women are best cultivator then her counterpart. They are found much committed with their work than men. Wives, plus machinery, have taken the place of hired men or other outside help.

In the rural areas, majority of the South African women are not found in agriculture sector due to the over burden of family responsibilities.

4.3 Women participation

The women do not participate in farming and just take care of their children. They were also liable to perform many other duties like planting, weeding and some-time storing of crops. It was observed that lack of govt. interest and Govt. policies regarding women's right were very crucial. There were cultural values and gender specification that resulted in the form of inactive women participation in development. There were many constraints that discouraged the women in development and thus major sex of the world could not contribute their power in economic sector.

There is a patriarchal system that is existed in some societies which does not allow women to work with other male workers. There are also cultural barriers and religious interpretations that create hurdles in women social mobility. These factors are resulted the less women participation in agriculture sector. This portion of human being is generally invisible in development activities. A significant number of women are affected due to the use of pesticides in farming. Women laborers do not know about the dangers of the poisoned pesticides. There should be preventive measures and awareness campaigns to minimize the side effects of pesticides.

4.4 Agricultural policies

Agricultural trade policies are not according to the liberalization and globalization. These policies are directly encountering with the women's rights. These policies put more burdens on

women as underpaid and sometimes unpaid. The factor of gender inequality effects the women participation in farming which is resulted the low production in agriculture and other social problems. If women should be provided equal wages to men then they must be encouraged in this field and thus economy can boom due to the efficient agriculturist.

In Pakistan, practices of gender inequality are very common in major parts of the country. Women are less paid at work place and treated as the second sex at their homes. The women who work get more worth in their families rather than the non-working women, but working women have still respect and space for male superiority. Majority of working women cannot give proper time to their families due to the ridged working hours. Sidhu (2007) stated that post harvesting is very important that often performed by women. Beside her role as a keeper of the home, caretaker of the livestock and that of the consistent helper to the farmer in farm related tasks, women play vital role in post harvesting, especially in storage, drying and cleaning of grains cannot be denied. If we provide them technical guidance then the losses chances in storage can be reduced at major level.

There were some key terms traced out as a result of research activity relevant to the research topic:

4.4.1 Agriculture

The relevant definition of agriculture was the science or business of raising plants and animals useful to men. It covered the proper cultivation of lands and livestock was the relevant activity defined as the basic activities of agriculture. The following categories of agricultural activities were used in the study. Cleaning field, seed preparation, sowing, harvesting, cotton

picking and livestock keeping; the targeted population was belonged to those types of occupation.

4.4.2 Age

Age was the major factor which helped men or women to participate in any activity and their role in the society when a person qualified to assume certain civil and personal rights and responsibilities, usually at 18 or 25 years. In the present study, age of respondents was taken as an important factor to affect the role of women in agriculture. The following categories were used to identify the age of respondent; 15 to 25, 26 to 35, 36 to 50 and 51 to above.

Table 4: Respondents regarding their age

Sr. #	Age Variation	Number of Respondents	Percentage
1	15-25	18	23.0
2	26-35	34	43.5
3	36-50	19	24.3
4	51-Above	7	8.9
Total		78	100.0

Socio-economic Survey Forms

Age was most important variable for the research., table shows the distribution of respondent's ages, accordingly, 23% respondents belonged to group of 15-25 ages, 43.5% of respondents belonged to the age group of 26-35, 24% respondents belonged to group 36-50 and only 8.9% respondents were of category 51 and above. According to the table, the ratio of

respondents who belonged to the age group-II was higher than other categories because young women could perform farming activities more efficiently than women of higher age.

4.4.3 Education

The level of education in the city areas matters, but in rural areas, it is not as important because people of the locale proffered to educate their male members rather than their female members because of different traditional and social barriers.

The village people used to understand their daily routine work but they were considered as illiterate. In the present study education of respondents was taken because mostly illiterate women were involved in the agriculture. The following categories were used to identify the education of respondent at different levels, middle, Illiterate and Quran knowledge:

Table 5: Educational level of respondents

Sr. #	Category	Number of Respondents	Percentage
1	Primary	19	24.3
2	Middle	5	6.4
3	Illiterate	54	69.2
Total		78	100.0

Socio-economic Survey Forms

Table- 5(a): Informal education of respondents

Sr. #	Category	Number of Respondents	Percentage
1	Qur'an	78	100.0
Total		78	100.0

Socio-economic Survey Forms

Table Shows the distribution of respondent's education wise. The data revealed that 69.2% were illiterate, 100% had read the Quran shown in the 5(a) table, 24.3% respondents were primary pass and 6.4% respondents got middle level education. According to the table, the ratio of respondents who were illiterate was higher than other categories because poverty was common in rural areas, so people engaged their daughters in income generating activities in agriculture rather than sending them to school.

4.4.4 Level of income

The total amount of money earned from work or obtained from other sources over a given period of time was considered the income that was most important to increase the family status.

4.4.5 Role of Women

A special form of social conflict regarding specific role of women in rural area that takes place when one is forced to take on two different and incompatible roles at the same time. It was the outcome of the research that the women had to face role conflict while performing the two roles of cultivation activity and household activities.

Table 6: Respondents regarding their Marital Status

Sr. #	Category	Number of Respondents	Percentage
1	Unmarried	18	23.0
2	Married	49	62.8
3	Widow	10	12.8
4	Divorced	1	1.2
Total		78	100.0

Socio-economic survey forms

Table shows the distribution of respondents regarding their marital status. The data revealed that 62.8% were married, 23.0% were unmarried, 12% respondents were widows and 1.2% came in the category of divorced women. The ratio of respondents who were married was higher than other categories. Because married women were responsible for upbringing of their children and by their participation in farming activities they could be able to fulfill the needs of their family. Education empowered women to make decisions about their own lives and to participate more fully in their development.

4.4.6 Family

Family was the group of intimate people emotionally involved and related through blood marriage responsible for the reproduction and rearing together of the village. In the present research, family was categorized into Nuclear family and Joint family.

Table 7: Family Structure of respondents

Sr. #	Category	Number of Respondents	Percentage
1	Nuclear	21	26.9
2	Joint	57	73.0
Total		78	100.0

Socio-economic Survey Forms

Table shows the distribution of respondents regarding their family type. The data revealed that 73.0% had joint family and 26.9% had nuclear family type. According to the table the ratio of respondents who had joint family was higher than other categories. Because joint families had large family size and females had to participate in farming activities in order to fulfill the needs of a large family.

During the research activities, all the respondents were involved in some economic activity in agriculture outside of home and earning money for their families.

Table 8: Faced Problems during Cultivation/farming

Sr. #	Category	Number of Respondents	Percentage
1	Yes	61	78.2
2	No	17	21.7
Total		78	100.0

Socio-economic Survey Forms

Table shows the distribution of respondents regarding the problems faced by them while doing farm and cultivation activities. The data revealed that 78.2% respondents were facing

certain problems and 21.7% respondents had no problem while doing farm activities. The ratio of respondents who had problems was greater than other categories.

Table 9: Type of problems

Sr. #	Category	Number of Respondents	Percentage
1	Bad Behavior of Owner	14	17.9
2	Problem of Getting wage in time	31	39.7
3	Working in Harsh environment	8	10.2
4	No Answer	25	32.0
Total		78	100.0

Socio-economic Survey Forms

Table shows the distribution of respondents regarding the type of problems faced by them. The data revealed that 17.9% respondents faced the problem of bad attitude of owner, 39.7% respondents had a problem of getting wages in time, and 10.2% had the problem to work in harsh conditions of weather. 32.0% of respondents refused to answer this question. According to this table the ratio of respondents who had to face problems of getting wage in time was greater than other categories because they were not treated like humans by their owners as per particular social system.

Table 10: Respondents faced health problems

Sr. #	Category	Number of Respondents	Percentage
1	Yes	66	84.6
2	No	12	15.3
Total		78	100.0

Socio-economic Survey Forms

Table-highlights the distribution of respondents regarding the effect of work in agriculture on their health. The data revealed that 84.6% respondents work in agriculture affected their health but 15.3% respondent's work in agriculture had no effect on their health. According to the table, mostly women had health hazards due to use of pesticides in the fields.

Table 11: Free decision of income consumption

Sr. #	Category	Number of Respondents	Percentage
1	No	57	73.0
2	Yes	21	26.9
Total		78	100.0

Socio-economic Survey Forms

According to the table the independence to consume their income was considered, according to data, 73.0% respondents were not independent to consume their income but 21% respondents were independent to consume their income. According to the table, the ratio of respondents who were not independent to consume their income was greater than other

categories because they were free only to spend the money on their children and house hold affairs not for themselves.

4.4.7 Women workers

Women doing paid work in Pakistan revealed faced a hostile environment of limited employment options, unequal wages, bad work conditions, and a double burden of labor due to unremitting domestic responsibilities at home. This is true whether they perform agricultural wage labor in the rural areas.

There are many factors, beyond the stresses of extreme poverty, that have been shown to influence the value system of a community and thus determine in part whether or not a woman will be able to engage in paid work. Women's autonomy in Punjab, more than religion, plays a more important role in determining the degree to which women can exercise autonomy only paid agricultural work outside the household had the potential for increasing the autonomy of women. But those parts of the Punjab where women's labor force participation were the highest were also where their mobility was the lowest (Southern Punjab), and where other measures of autonomy such as mobility and decision-making were low as well, and women practiced *purdah*.

4.4.8 Importance of women work

In some of the micro-studies done on working women in Pakistan, it was found that they worked only to amass a dowry. Other reasons included keeping girls busy at home after they reached puberty, caused in part by negative attitudes to female education, and the compulsions of female-headed households to earn for their families. An analysis of data from the Pakistan Integrated Household Survey 1998-99 suggests that women, who are younger, poorly educated and from larger families enter the labor market not out of their own choice at all, but upon

instruction from other household members. In contrast, the decision to work for women who are older, better educated, heads of households themselves, or from smaller and better off urban families, is theirs to make themselves. This situation was also observed in rural areas of Pakistan, where females were engaged inside and outside their homes only to consume their free time to prevent any un-healthy activity.

4.4.9 Purdah and significance of home-based work

According to a latest study the relationship between the norms of *purdah,* or the practice of secluding women and wearing the veil outside the home, and women's work outside or home-based was explored, the workers of the cities said that the *purdah* observance was the main reason for working outside their homes. Whereas in rural areas the practice of *purdah* was in its more severe form, keeping women within their homes because a man was able to hire paid male labor to replace unpaid female labor, in urban areas the practice was linked more closely with social prestige and male domination over women.

4.5 Rice cultivation and role of women

Agriculture is the mainstay of economic activity in the rural areas, which provide the population with household and national level food security however, the share of agricultural sector to gross domestic product (GDP) in all countries, has decreased due to economic transformation. Majority of the population in Southeast and South Asia lived in the rural areas and continued to depend on the agricultural sector for economic growth for poverty alleviation despite the fact that the sector's relative share in the economy has decreased. The food supply of urban consumers will depend on the agricultural production from the farming population, both men and women. In Pakistan the number of women employed in agriculture as a percentage of

the economically active population is higher than that of men. It was evident that those countries, which were low and medium, achieved the goals in human development and gender related development that have larger share of women in agriculture.

Southeast countries such as Bangladesh, India and Pakistan are poor performers for human and gender development. High human development does not necessarily translate to an equal share of benefits of men and women. Persisting indifference to rural women's contribution to agriculture and the constraints on women's access to productive resources might impede achieving food security goals (FAO 2004).

Rice is the dominant staple food for South and Southeast Asia, except in northwestern India and Pakistan where rice is a commercial crop. The annual total harvested area for rice is about 43 million hectares or 28% of the world's total for Southeast Asia and 58 million ha or 38% of the world's total for South Asia. Including China, approximately 90% of the world's rice is produced and consumed in Asia. In countries where per capita income is US$ 500 or less, rice accounts for 20-30% of gross domestic product (GDP), 30-50% of agriculture value added and 50-80% of consumed calories. Aside from dominating production and consumption side, rice is also inextricably woven into the social, economic, cultural and spiritual fabric of their lives.

The significant roles of women in rice-based agriculture had been recognized since the 1990s, through the women participation in Rice Farming System (WIRFS) Network based at the International Rice Research Institute (IRRI) in collaboration with the National Agricultural Research and Extension Systems (NARES), which was under the umbrella of the Asian Rice Farming Systems Network (ARFSN). This network addressed women's concerns in specific major rice ecologies by;

a) Quantifying the economic (labor and income) contributions of men and women in rice-based farming systems and participation in decision making in household and farm-related matters

b) Identifying gender differential needs and constraints in increasing productivity capacities such as access to and control of resources (education, land, credit, agricultural inputs, technologies, extension, training and agricultural-related information)

c) Identifying, testing and validating rice and rice-related technologies which can directly benefit women from poor farming and landless households

d) Enhancing women's knowledge and skills (technical and managerial) required by new technologies

e) Assessing gender-differentiated impact of technologies. Thus, the network generated research with gender-disaggregated farm-household level information and "women-friendly" technologies in specific rice ecologies under the ARFSN. There is much evidence from these studies that both men and women contribute to rice-based farming systems.

Poor rural women play important roles in rice-based farming systems as unpaid family workers, income earners, savers of expenditures and major caretakers of family health and nutrition.

In Pakistan, the prevailing rice cultivation practices demand heavy manual labor inputs and drudgery, particularly on women. However, gender roles in country vary by region, type of farming systems, crops grown, interlinks with livestock and poultry production, and opportunities for off farm occupation for family members. Female participation increases with poverty and in unfavorable rice environments. Women's labor contributions are highest in rural areas inside Pakistan and outside as well. Women from the upper castes do not work in the fields while women from the lower castes work on their fields as well as exchange and hired laborers

in other fields except for land preparation, irrigating the fields and spraying chemicals, women dominate rice operations. Women are also repositories of indigenous knowledge of crop and natural resource management. Post-harvest activities such as seed cleaning, selection, storing seeds for the next cropping season, husking the grains, cooking rice or preparing rice into products for home consumption or for sale are women's domain. They add value to rice by preparing them into products for sale and consumption. Preparing the meals and allocating food for their family members are women's responsibilities. In rice-based farming systems, rice is grown during the wet season however, in the most irrigated areas; farmers grow non-rice crops after rice.

Women contribute significantly in these activities since these are also sources of independent income. Besides the farm and marketing responsibilities, rural women continue to practice the primary responsibilities of domestic activities including the hard physical tasks of fetching water, fuel and fodder collection and gathering wild foods. Several technologies (yield increasing, drudgery reducing) are tested by women who are given training to organize themselves in formal associations.

4.6 Threats to rice-based agriculture & consequences

Many decades before the rice production were more than three times in Pakistan due to the expansion of irrigation and the adoption of modern varieties with higher yield and shorter growth duration. However, the potentials for further gains through this pathway were limited.

In the irrigated areas of Pakistan, the yield gains from the adoption of new technologies have been almost fully exploited, and in many areas, intensification of rice production has led to the overexploitation and degrading of soil and water resources. The demand for rice is increased

by almost the same proportion over this period. Thus, the potential additional supply of rice will have to come from the vast irrigated rice environments in Pakistan, where women have traditionally been contributing significantly in many aspects. However, there are emerging changes, which are affecting rice production and roles of women in rice-based agriculture. Among others, these are biotic stresses, which are further aggravated by natural disasters and climate change and increasing out-migration of labor from agriculture, which is becoming the pathway out of poverty.

4.7 Climate change

Climate change is emerging as a new threat to crop agriculture in terms of excessive flood related inundation, shrinking cropping season, and temperature related yield loss and could mean extra hardship for farming activities, which are often carried out by women. The increase of extreme weather conditions (e.g. floods and cyclones) will put the burden of dealing with devastation and destruction on the women. They often lose the capacity to sustain their families' livelihoods resulting from loss of seeds, crops, livestock and productive gardens. As women have the responsibilities for family care they are put under great stress.

4.8 Migration of labor from rural areas

A declining labor force (and in particular a declining male labor force) will be available for agriculture, particularly on small to medium farming enterprises, and the available labor force will be dominated by women due to frequent migration of the labor force to urban centers. Positive trends in declining fertility rates had led to reduction in family size while improvements in population sex ratio presented a mixed picture with potential for increased matriarchal households and stress on family labor in farming. The region demonstrates a decreasing trend in

agricultural employment rates with increasing importance of non-farm work for income security; diversity marks agriculture and rural workers with a significant contribution by unpaid family workers (women and children). Rural to urban migration is higher in most of the rural areas of Pakistan because of more financial gains.

4.9 Women and new technology

Whether technical change benefited the women, it depends on their control over resources. Women in farm households who have some control over the income from land will get the benefits from any type of technical change in agriculture. Women hold the keys to family food and nutrition security and improved wellbeing of their children. Hence the development and ultimate adoption of technologies (crop and livestock) in terms of new varieties, new breeds and management will benefit women. Reducing gender inequities and tapping women's potential as agents of change are key strategies for reducing poverty, sustaining household food security and nutrition and protecting the environment.

4.10 Importance of agriculture

Agriculture is the mainstay of economic activity in the rural areas, which provide the population with household and food security. However, the share of agricultural sector to gross domestic product (GDP) in all countries has decreased due to economic transformation. Majority of the population in Southeast and South Asia live in the rural areas and will continue to depend in the agricultural sector for economic growth for poverty alleviation despite the fact that the sector's relative share in the economy has decreased. The food supply of urban consumers will depend on the agricultural production from the farming population, both men and women. The proportion of economically active female to total female population ranged from 15-81% within

Southeast Asia; 49-98% in South Asia. In other countries in Asia, 69% of the total female population was engaged in agriculture. It is evident that those countries, which are low and medium achievers in human development and gender related development, have larger share of women in agriculture. Southeast countries such as Bangladesh, India and Pakistan region are poor performers of human and gender development. High human development does not necessarily translate to an equal share of benefits of men and women. Persisting indifference to rural women's contribution to agriculture and the constraints on women's access to productive resources might impede achieving food security goals (FAO 2004).

Rice is the dominant staple food for Southeast Asia, except in northwestern India and Pakistan where rice is a commercial crop. The annual total harvested area for rice is about 43 million hectares or 28% of the world's total for Southeast Asia and 58 million ha or 38% of the world's total for South Asia. Including China, Approximately 90% of the world's rice is produced and consumed in Asia. In countries where per capita income is US$500 or less, rice accounts for 20-30% of gross domestic product (GDP), 30-50% of agriculture value added and 50-80% of consumed calories (Hossain 2007). Hundreds of millions of poor smallholder men and women farmers and landless workers in Asia depend on rice not only for food but for employment and income as well. Aside from dominating production and consumption side, rice is also inextricably woven into the social, economic, cultural and spiritual fabric of their lives. The significant roles of women in rice based agriculture had been recognized since the 1990s, through the Women in Rice Farming System (WIRFS) Network based at the International Rice Research Institute (IRRI) in collaboration with the National Agricultural Research and Extension Systems (NARES), which is under the umbrella of the Asian Rice Farming Systems Network (ARFSN). This network addressed women's concerns in specific major rice ecologies by: a)

quantifying the economic (labor and income) contributions of men and women in rice – based farming systems and participation in decision-making in household and farm-related matters; b) identifying gender differential needs and constraints in increasing productivity capacities such as access to and control of resources (education, land, credit, agricultural inputs, technologies, extension, training and agricultural-related information); c) identifying, testing and validating rice and rice-related technologies which can directly benefit women from poor farming and landless households; d) enhancing women's knowledge and skills (technical and managerial) required by new technologies; e) assessing gender-differentiated impact of technologies. Thus, the network generated research with gender-disaggregated farm-household level information and "women friendly" technologies in specific rice ecologies under the ARFSN. There is much evidence from these studies that both men and women contribute to rice-based farming systems. Poor rural women play important roles in rice-based farming systems as unpaid family workers, hired laborers, income earners, savers of expenditures and major caretakers of family.

Chapter No. 5

5.1 Summary and conclusion

Many societies, particularly those in developing countries usually emphasize only women's domestic and community roles. In these communities political and economic roles are reserved for men. Even where women's economic roles is obvious such as in the case of water and fuel wood collection, vegetable gardening, dairy and poultry keeping, these economic contributions are minimized and dismissed as emanating from their biology. Thus women's productive work is less visible and less valuable as compare to that of men. Nonetheless, with increasing economic intensification and diversification as a result of emergence of new challenges, there is gradual movement away from the status quo. The forces of globalization and colonization accelerated the circulation of new ideas and cultures around the globe. As a result women are gradually brought into the center of the development. In the economic domain rural women are involved in the cultivation of crops like palm oil, coffee, wheat, and others for cash. Throughout the world, rural women historically have played and continue to play an important role in rice production. Women's involvement in rice production varies from region to region, and even within region. Huvio (1998) observes that the percentage of labor supplied by women in rice cultivation varies from 3% for floating rice cultivation (using animal traction) in Mali, to 80-100% in mangrove swamp rice cultivation in the Gambia and Liberia. Agriculture is the mainstay of Pakistan's economy. It also contributes substantially to Pakistan's exports and is an important food cash crop. It is the second largest agricultural export item of the country and accounts for 6.1 percent of the total value added in agriculture and 1.3 percent of GDP. In

Pakistan's Punjab, basmati and IRRI rice are two varieties cultivated, consumed and exported. Basmati has a lower yield and a higher production cost than IRRI rice, but these are offset by higher prices. Using guaranteed price supports for both varieties, the government encourages farmers to produce exportable surpluses, particularly of Basmati, where Pakistan has a comparative advantage and is the dominant supplier of the world's premier non- gluteus long grain aromatic rice to the international market.

In 1506 C.E, Chief Bahauddin Sufi Sahib, established a settlement namely Pindi Bahauddin in the north-eastern corner of the region known as "Gondal Bar" after his immigration from Pindi Shah Jahanian to the area. The settlement soon became a center of intense commercial activity, hence named afterwards by the merchants as "*Mandi Bahauddin*", the Market of Bahauddin. The Urdu language word "*Mandi*" implies "marketplace". The proto-city was later on fortified with 9 main doorways to guard against foreign invasions. The wall was intact as it was completed in 1946 however; the recorded history of Mandi Bahauddin goes back to the era before Christ, connecting the region with the historic figure of Alexander. About 8 km northwest of the town near village *Khiwa* on the southern bank of Jhelum River, the battle of Hydaspes (Jhelum) River was fought between Raja Porus (Sanskrit *Paurava*) and Alexander. The historical battle of Jhelum River that Indian sources referred as the "Battle of Jhelum" taken place in 326 BCE. The kingdom of Raja Porus was in the northern Punjab of modern Pakistan. The battle was proved the last major fight of Alexander's career, for the Macedonians, after being put up a fierce resistance by Porus' soldiery and having heard of a massive 4,000 elephant force mustered by eastern kingdoms, refused to march further east i.e. Ganges Plains. After the partition when the Sikhs and the Hindus have migrated to India, bulk of Muslim population migrated and settled there. In 1960, the city was given the status of Sub-Division. In 1963, the

Rasul Barrage and Rasul-Qadirabad link canal project under Indus Basin irrigation project were started. The Project was managed by WAPDA and a large colony for government employees and foreign contractors was constructed a few kilometers from Mandi Bahauddin. The projected was completed in 1968 by Engineer Riazur Rahman Shariff as the Project Director that brought lime modernization to Mandi Bahauddin and helped the city grow commercially. In 1993, Mian Manzoor Ahmed Vato the Chief Minister of Punjab announced and notified the city as the district headquarters. The district was formed in the central portion of the Chaj Doab lying between Jhelum and Chenab rivers.

Jatts caste was further divided in sub-castes Gondal, Warraich, Tarar, Ranjha and Sahi were dominant in Mandi Bahauddin and three tehsils. Mandi Bahauddin, Phalia and Malikwal. However, Gujjars and Mohajirs were also prominent in the local politics. Agriculture was the major profession in the district. Formerly the district Mandi Bahauddin was consisted of two national and five provincial assembly seats. The total area of Mandi Bahauddin was 2,673 sq kilometers. The total number of male voters in Mandi Bahauddin was 370,528 and female voters were 278,521. The annual population growth rate of the district was 1.87 per cent and the urban ratio was 15.2 per cent. Around 99.1 per cent of the total population of the city was Muslim, 0.6 per cent Christians and 0.2 per cent Ahmadis. The main languages of the district were Punjabi, spoken by 97 per cent; Urdu spoken by 2.5 per cent; Pushto spoken by 0.5 per cent and Saraiki by 0.5 per cen. Main occupations of the district were agriculture adopted by 40.7 per cent; elementary occupations by 40 per cent; service workers by 6.5 per cent, crafts and related trade by 4.2 per cent of the population, while professionals were 3.1 per cent and machine operators 2.4 per cent. The district had moderate climate hot in summer and cold in winter. During peak summer, the day temperature shoots at 45 c. in the summer hot spells below but the winter

months were very pleasant and the minimum temperature was below 2 c, while the average rain fall in the district was 50 Cm. According to Punjab Development Statistics 2008, total population of the Mandi-Bahauddin district was 1344000 persons out of which 688 thousands were males and 656 thousands females. Density of population in the district was 502 persons per square kilometer.

As regards availability of skilled labor, there were 06 technical/commercial/vocational institutes imparting training in various trades e.g. mechanical, electrical, auto-engineering, welding, wood working and commerce. Vocational institutions for women impart training in hand/machine embroidery, stitching and knitting etc., while the output of all the institutes was 3383 trained graduates each year. Endogamy marriages were practiced for keeping their families intact and to avoid the land distribution, while exogamy was also practiced by few of the families particularly by the *kami* communities and other lower status groups. The economy of the village was based on agriculture; while industrial units were non-existing there thus there were no alternatives of earnings for the village people. A large number of people cultivate the land, they cultivate, Wheat, Dha'an (Rice), Grain, Cotton, Jawar, Maiz and Sugarcane etc. The people in the locale used to keep the livestock for their own use. Livestock was collectively named by the local people as *Maal* and *Dhore*. The domesticate animals were Buffalo, Goats, Cows, Ox, Donkeys and Dogs.

Women's participation in labor was of critical importance in determining living standard, dependency burden and saving pattern in households who constituted about half of the total population of the village. In the recent past, women contribution was lessened because of introduction mechanized machinery in the agriculture sector, while in non-farm activities, was subject to availability of jobs, education level and skills. Women participation as labor was

initiated by pushes and pull factors. The push factors were financial pressure. Women from the poorest families were pushed into the labor activities due to severe economic necessity, while the pull factors were the demand and education level, training and experience.

The international development community has recognized that agriculture is an engine of growth and poverty reduction in countries where it is the main occupation of the poor. But the agricultural sector in many developing countries is underperforming, in part because women, who represent a crucial resource in agriculture and the rural economy through their roles as farmers, laborers and entrepreneurs, almost every-where face more severe constraints than men in access to productive resources. Efforts by national governments and the international community to achieve their goals for agricultural development, economic growth and food security will be strengthened and accelerated if they build on the contributions that women make and take steps to alleviate these constraints.

Over the last 25 years, the role of women in agriculture became familiar and a well developed subject, whereas small groups of women met at local and regional conferences to examine the roles of women on farms and in agricultural development and to bring attention to their importance. Broadly speaking, the early studies legitimized the idea of women as productive partners in agriculture, discovering and documenting the various roles played by women as farmers, wives and agricultural professionals and recounting the stories of successful women in these roles.

5.2 Conclusion

In all the societies, women development is a prerequisite for overall national progress. Women traditionally share men's job for the economy's growth. In Pakistani society, women work in agriculture sector just to support their families but have lower socio-economic status. In

order to augment family incomes rural women's participation is increasing day by day. Women spend longer working hours than men, meeting both household responsibilities and their outside work. The women of these families work with men to increase their family income. Rural women are economically active but are not economically independent. Women and girls work more than male in farming but they do not get proper food and medical treatment and deprive from many basic necessities of life. Gender discrimination on the basis of socially constructed moralities and duties was very common in Pakistan.

The current study has highlighted the role of women in agricultural development that was not limited but was not recognized that was required to be re-viewed through law making to protect the women's rights. Women farmers need to learn skills for improved agricultural operations and for better postharvest practices and storage. But technical training and information from extension agents was not made available to them, it should be re-considered. Efforts are required to involve men to secure the women rights and take the responsibility to ensure the women's status including their socialization to make them able to be self sufficient.

Despite the increased growth of agriculture, there are threats for increasing household and national level food requirements that can lead to negative consequences on women. Thus, rural woman has to play even greater roles in sustaining household food and nutrition security. They should be empowered to make sound and timely decisions on farm related matters and they should be given adequate and timely information; knowledge of new varieties and their associated crop and natural resource management practices. International and national agricultural research and extension institutions can contribute immensely for addressing the needs of women engaged in agriculture who hold the key to household and national food security, poverty alleviation and for the welfare of the future generation because they are the

major contributors of agriculture produce. Despite such a huge involvement, her role and dignity has yet not been recognized, while their occupational choices are also limited due to social and cultural constraints, that resulted in the discrimination of female labor, inequality of their wages and status irrespective of their major role in the agriculture sector where 79 percent of female labor is engaged as compared to 57.3 percent of male workers. Nearly 36-38 percent females are working in their family farms.

5.1 Recommendations

1. Women working in the rural economy and the informal sector are to be formally recognized and their labor work may be accounted in monetary terms.

2. Steps are to be taken to ensure the access of poor rural women to land, agricultural and Livestock extension services along with their access to mechanized facilities. They should be furthermore, providing with facilities of micro-credit, especially through the Pakistan Poverty Alleviation Fund (PPAF), Rural Support Programs (RSPs), First Women Bank (FWB), Agricultural Development Bank (ADB) and the Khushali Bank.

3. Women heading the households, bread earners, and disable are given priority in accessing credit on soft terms from banks and other financial institutions for setting up their business, buying properties, and for house building.

4. To enhance women's literacy rates, and to improve the levels of female education ratio, urgent measures are required that can be dealt with a specific education policy for women.

5. Women are entirely absent from the state structures and decision-making bodies that should be redressed.

6. Access to justice is another targeted area for women. Key policy measures to be instituted including eliminating of negative customary practices by increasing knowledge of women's

existing rights to access judicial relief and redress, ensuring effective implementation and the enforcement of existing rights, removing discrimination through legal reforms, and providing legal aid assistance and counseling. More specifically, the Ministry of Law, Justice and Parliamentary Affairs, Pakistan Law Commission, and the National Commission on the Status of Women should review all the existing laws and formulate the proposals for law reform.

Finally it is concluded that the rural women are exploited by land lords for their personal gains and are treated as sub-servant or personal property. In this regard government must formulate policies to enhance their skills and their work should be counted in economic indicators.

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Appendix
(Questionnaire)

Rice cultivation

1. Do you have any contribution in rice economy?
2. What kind of work you perform in fields?
3. Do you know the skill of rice cultivation?
4. How did you learn the skill of rice cultivation?
5. Are you reluctant to work in rice fields or willing?
6. What type of problems you are facing in rice fields?
7. What type of rice do you cultivate?
8. Is there the distribution of labor in rice fields?
9. Do the norms of the society allow you for rice cultivation?

Rice economy

10. The land you cultivate is individual ownership or collective ownership?
11. Do you have your share in the economy of rice?
12. Do you own land on your own name?
13. Do you have the right to sale or trade the land owned by you?
14. Does a restriction on female's mobility affect its role in rice cultivation?
15. Are you with the share being given to you in rice cultivation?
16. Do you have the permission to sale the rice on your own or your family members' sale your rice as well?

17. How do you manage to work in fields as well as in house?

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