IMPACT OF DISASTER ON FARM AND NON-FARM WOMEN ENTREPRENEURS: A CASE STUDY FROM MUZAFFARGARH, PUNJAB

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CERTIFICATE

This is to certify that this thesis entitled: "*Impact of Disaster on Farm and Non-Farm Women Entrepreneurs: A Case Study from Muzaffargarh, Punjab*" submitted by Bushra Iftikhar is accepted in its present form by the Department of Development Studies, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Development Studies.

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ABSTRACT

This study has analyzed the role of women in rural area in terms of income generating activities as small farm and non-farm women entrepreneurs in order to combat with flood disaster losses of Basti Karak, district Muzaffargarh. This study has overviewed the losses of these women entrepreneurs towards land, income, basic amenities, property and life. And explored the extent to which government and non-government organizations have facilitated them for their economic losses due to floods. The research has focused on women entrepreneurs who do small income generating activities for either full or part time and either alone or with family underlying in both farm and non-farm sector. Both primary and secondary data was used for achieving the objectives of the study. The study was conducted by using descriptive research design. In this connection semi-structured and unstructured interviews were conducted from chief disciples and relative farm and non-farm women entrepreneurs respectively.

The study found large impact of flooding on economic losses in health, education, migration, seasonality, seasonal working, vulnerabilities, losses to basic amenities, transportation, drainage system, animals, food items, non-food items, miscellaneous items, ox carts, furniture, farm land, vehicles, housing, livestock materials and items, interest and loans, marketing, income wage, medical care expenses and others. But the role of government was very nominal and so-called in assistance of women entrepreneurs' economic losses.

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USED ABBREVIATIONS

ADB	Asian Development Bank
BBC	British Broadcasting Corporation
CGE	Computable General Equilibrium
DCO	District Coordination Officer
DDMA	District Disaster Management Authorities
DDRMP	District Disaster Risk Management Plan
DRM	Disaster Risk Management
EPA	Environmental Protection Agency
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
HFA	Hyogo Framework for Action
IG	Income Generation
IGA	Income Generating Activities
ILO	International Labour Office
IFAD	International Fund for Agricultural Development
IPCC	Intergovernmental Panel on Climate Change
KP	Khyber PakhtunKhuwa
NDMA	National Disaster Management Act
NGOs	Non-Governmental Organisations
NIDM	National Institute of Disaster Management
NDMC	National Disaster Management Commissions
NDRF	National Disaster Response Force
OLS	Ordinary Least Square
PDMC	Provincial Disaster Management Commissions
PDMA	Provincial Disaster Management Authorities
PFERR	Pakistan Flood Event Recipe Report
WDR	World Development Report
UNDP	United Nations Development Program
VBD	Vector Borne Disease
WBD	Water Borne Disease
WDB	World Development Bank
WHO	World Health Organization

CHAPTER I

INTRODUCTION

1.1 Background:

Climate change is sometimes beneficial for agricultural sector but on the other hand it also results in a number of disasters such as droughts, floods, hurricanes, storms, windstorm, hailstorm, snow melting and etc. The heavy rainfall causes damage to agricultural land in form of floods. There are a number of countries which receive monsoon rains such as India, Pakistan, China, Bangladesh, Myanmar and others (Muller, 2011). The regions which receive monsoon rains are considered naturally vegetated and have substantial vegetation growth. To put in a clearer perspective on Pakistan's level, in Southern Panjab many of the main irrigation canals are coming from Indus River and compounded by heavy rains. Consequently, the heavy rainfall by means of floods hit the indigenous people in damages and losses (Weng et al., 2007).

Pakistan has become a victim of flood jeopardies since its freedom due to monsoon rains. Flood disaster has become more common because of climate change and resulted in huge economic loss within agricultural sector in Pakistan every year. Most of Pakistan's rural community and metropolises have been suffering from yearly floods since 2000 in monsoon season (August-November). Monsoon is basically a shift of wind direction towards sea side and become a major cause of rainfall in many continents precisely; South Asia, America and South Africa (Weng et al., 2007).

In South Asia, the wind patterns normally blow from land to ocean, but during monsoon the wind blows in reverse order i.e. from ocean towards land. The prompt reversal of wind route allows rain to fall in monsoon.

Climatic change brought many unusual catastrophes and causalities around worldwide. There is an indeterminate change in climate due to floods. Pakistan has been facing floods since its independence 1947. Pakistan is facing yearly floods due to climate change and monsoonal transmission. It has experienced the worst flood in 2010 in the monsoon season (from July – August). The torrential rainfall hit the northern and

north-western areas of the country. The flood reported 20 million displaced people, 50,000 square kilometers of land flooded, and damaged extensive amount of crops, infrastructure and land. This was the notable flooding in Pakistan that impacted 78 districts, 1980 deaths and 2946 injured. The catastrophe twisted more than 10,000 schools, 1.6 million households and 500 hospitals were destroyed (Jha et al., 2012).

After this event people became homeless and unable to survive (Looney, 2012). At that time 2.1 million in Kharif crops were directly damaged to flooding specifically in cotton, rice, sugarcane, vegetables and a million tons of seeds and food stock along with water-canals and wells (Analytica, 2010). The floods in hilly areas of KPK and Baluchistan killed 200,000 livestock such as cows, buffalos, sheep, donkeys, goats and many poultry and grazing animal farms have additionally lost. Due to having inappropriate environment 450,000 cases of dysentery and 3.5 million children of water borne disease were reported (Looney, 2012).

Mustafa (2010) explains the causes of flood, vulnerability and management for River Indus. He clarifies the great flood in 2010 in Indus River was not an uncertain catastrophe. It was declared by the Prime Minister and some other climate experts that it was one of the worst calamities that hit the country in the worldwide. Furthermore, he explained that before the flood period most of the needs were offered to the victims such as food, shelter and clean water etc., but at that time the drainage system remained intangible then the issue of drainage taken by the NDMA in December 2010. There were delays in water subsidence which not only become a consequence of agricultural loss but also resulted in poor livelihood, migrations and increased mortalities.

It is known that vulnerability of an individual is due to climate change. It depends on gender roles and relationships; however the women from rural areas are mostly the victim in developing countries (Team et al., 2007).

Shah, John Cook, Sara Ahmad and Elizabeth Faber worked on climate change and vulnerability (Terry et al., 2009). They explained that the alterations in climate are due to the increase in CO_2, greenhouse gases and anthropogenic activities (particularly

burning of fossil fuel and deforestation). Moreover, the vulnerability due to natural disasters is because of poverty and marginalization (Terry, 2009)

A direct form of disaster like flood does not only distress the humanity physically, mentally. It also results in a large number of losses of lives. It affects communities socially, politically, culturally and economically and left not a single phenomenon intact (i.e. homes, schools, jobs and properties). The vulnerability among people may differ person to person that how the person is able to cope up with the catastrophe and how quickly and easily resume activities (Terry, 2009)

In rural communities natural resources and agriculture sector are considered vital for survival. On the contrary, the gender roles specify the vulnerability among them. However, micro and small businesses comprise number of advantages for rural women. It consists flexible hours in home and near home chances to work (Ekpe et al., 2010).

The aim of this study is to identify the losses faced by farm and non-farm women entrepreneurs in 2014 in expansion of their business due to natural calamity specifically floods in Basti Karak of Muzaffargarh, South Punjab. In rural areas non-farm and farm women entrepreneurs are contributing potentially to economic growth. These small businesses in shape of market and non-market based are their part of broader livelihood strategy (Mayoux, 2001).

It is well-known that rural household women in developing countries are contributing in income generating activities on a large scale: in Africa, Latin America and Asia rural women entrepreneur accounts 42%, 40% and 32% in income generation respectively (Davis, 2002). Rural non-farm sector contributes more than 50% to the household income in each 11 out of 15 countries (Davis et al., 2007). The main reason behind women entrepreneurship is male migration for education and money generating. Men have increased their activities in cash crop production. The opportunities for women have increased since past twenty years. Industrialization and urbanization has been an important phenomenon for development since 1960s (Havnevik et al., 2003), thus it made the rural non-farm entrepreneurship important for achieving development from the late 1990s onwards. The non-farm sector has a major contribution in economic

growth which is now not even supposed to decline but in fact increased (Davis and Bezemer, 2004).

1.2 Statement of the Problem

As the district Muzaffargarh lies within the two gigantic rivers in its East and West shown in figure (4.1.1 Map of Muzaffargarh) which covers the length of 100 miles. In monsoon season the water flows more intensely in August to October. The heavy floods become a main reason to colossal loss to not only life but also the property they possess. District Muzaffargarh has received a worst flood in 1992 and discharge recorded as 888143 cusecs. In this disaster the infrastructure got severely damage (Mayoux, 2001). Due to having yearly rains they are facing floods, soil erosion, pest attacks, epidemics, droughts and storms. And the agriculture is suffering extreme risks and vulnerabilities. The following table shows the yearly floods' net demand and its recovery along with its percentage.

Table 1.1: Recovery of flood water in Muzaffargarh District

Year	Net Demand	Total Recovery	%age
2003-04	92.688	47.045	51
2004-05	144.058	36.073	25
2005-06	14.250	32.231	23
2006-07	72.447	41.442	57
2007-08	72.396	47.500	66
2008-09	61.774	47.500	91

Source: (DCO, 2009)

Women entrepreneurs are mostly involve in highly saturated, low return and low-productive informal sectors. They are having either very little or no benefit and social protection, as a result they are facing a large number of losses in their business due to floods (Mayoux, 2001). This study has aimed to highlight the losses faced by farm and non-farm women entrepreneurs in Muzaffargarh in 2014. Many studies have been

conducted on flood impacts on health, poverty, education, flood recovery and others but this study is quite different. It provides a relationship between "flooding" and "losses faced by women entrepreneurs", as well as how the alteration in climate brings the floods. The question is that how and why these yearly floods have affected the indigenous people especially farm and non-farm women entrepreneurs? One answer is that because they are more vulnerable due to uncertainty.

1.3 Definition of Covered Terms:

The definitions of the covered terms have explained line wise whereas, disaster, climate and climate change, hydrological process, global warming, greenhouse effect, flood damage vs loss and omen entrepreneur.

a) Disaster:

A disaster is a disrupting occurrence in normal condition of existence that causes a level of suffering. However, it exceeds the capacity of adjustment of the affected community.

> *"A disaster is an event or situation in which the local capacity, necessitating a request to a national or international level for external assistance. It is an unseen moreover sudden event that causes tremendous losses, damages, destruction and human sufferings*" (Regina, 2009).

Disasters are mostly due to the convergence of hazards which causes vulnerabilities. Usually it increases in physical, social, economic and environmental vulnerabilities. There are five principal categories of disaster such as geophysical, metrological, hydrological, climatological and biological. Primarily, geophysical are the events originate from solid earth. Secondly, meteorological events are usually caused by short-lived or small scale atmospheric processes. Thirdly, the hydrological events are mainly caused by the deviations in normal water cycle. Fourthly, the climatological events are long-lived and meso to macro processes by intra-seasonal to multi-decadal climate variability. Lastly, the biological disaster is caused by exposure of living organisms to toxics and germs (Regina, 2009)..

b) Climate and Climate Change:

Climate change happens due to less heat escaping to space, rising tropopause, less oxygen in the air, 30 billion tons of CO_2, more fossil fuel carbon in the air, nights warming faster than days, more heat returning to earth, more fossil fuel carbon in coral, shrinking thermosphere and cooking stratosphere.

> *"Generally climate changes temperature, weather, air pressure, sunshine, wind patterns, cloudiness, humidity and precipitations due to increase of particular gasses especially Carbon dioxide over the passage of years"* (Hare, 2014).

> *"Change in climate due to natural or anthropogenic activities and this change remain for a longer period of time"* (Team, 2007).

> *"Climate is the average weather in a place over years. However the weather shifts in just a few hours, while climate takes a decade or hundreds, thousands, even millions of years to change"* (Hare, 2014).

> *"Climate change is modification of temperature which can be measured by average variation and inconsistency of its belongings which remains for a longer span precisely a decade or longer"* (Hare, 2014).

> *"Climate change can be altering directly or indirectly human activities that can compose global atmosphere and natural environmental inconsistency over analogous time periods"* (Protocol, 1997).

c) Hydrological Process:

The rainfall is basically all kinds of water either liquid or solid which falls from the clouds are known by precipitation. It can be in the form of hail-storm, snow, rain, sleet virga and fog which came through the hydrological cycle (Rasul et al., 2012).

> *"Hydrological process is basically about the water cycle, which rotates in vapors from the surface of soil from water bodies due to increase in temperature and dry air, at other hand the low temperature causes cooling and*

water vapors and finally becomes clouds. Sequentially, it results in torrential rainfall" (Rasul et al., 2012).

d) Global Warming:

The earth is getting hotter and causing natural catastrophes like floods, hurricanes and draughts are becoming more instant. Over the last 100 years the temperature has risen by approximately 1 degree Celsius whereas 1.3 degrees Fahrenheit. It has severe effect of earth due to thermal expansion of ocean and ice melting. The rainfall patterns are changing and increased the hurricanes since 1975. It has changed the precipitation patterns, frequency, duration and the intensity of weather to the extreme. Furthermore, it increases and decreases in agricultural yield (Venkataramanan, 2011).

"Global warming is the increase in the average temperature on earth" (Venkataramanan, 2011).

e) Greenhouse Effect:

Greenhouse gases (GHGs) reside in air either natural or anthropogenic. It absorbs and emits radiations at particular wavelength within range of current infeed energy emitted from ground's surface such as air and clouds. Foremost GHGs are H_2O, CO_2, CH_4, O_3 and N_2O (Hare, 2014).

The sunlight enters in the surface of earth, most of it is radiated back but some gets absorb and warms the earth. These longer wavelengths absorb by greenhouse gases to some extent. The absorption of long wave radiant energy makes the atmosphere warmer. The major greenhouse gasses are water vapours, CO_2, methane and ozone. Ozone is a toxic and powerful gas. It is different from the normal oxygen gas (O_2) and consists three atoms in molecule (O_3). The worst greenhouse effect is due to the burning of fossil fuels (Eyring, 2008).

f) Flood Damage vs Loss:

Damages of flood can be replaceable and recoverable like infrastructure, fertile / productive land, resources, schools, buildings, small trades, power supply lines, pipelines, employment opportunities, hectors of crops (sugarcane, cotton, wheat, maize, rice, fruits and vegetables), agricultural equipment (i.e. generators, water mills, field

retention walls and irrigation system), livestock (primarily cared by women) and small enterprises (Memon, 2011).

Flood results in miserable losses that are irreplaceable like loss of property, farmers and herds, thousands of livestock, diseases and deaths.

g) Women Entrepreneur

Gartner defines in one definition about entrepreneur that one who is creator and organizer possesses or undertake a commercial enterprise. In other words he explains

> *"The word entrepreneur is derived from French word "enterprendre" means to undertake"* (Gartner, 2004).

The economists view about entrepreneurship; a person who is modernizer and presents something new in economy. Such as quoted below in few definitions

> *"An entrepreneur is a modernizer which presents something advance in economy*" (Dzisi, 2008).

> *"The entrepreneur is a choice oriented person in a particular traditional perspective who commands a range of performances that exploit these opportunities"* (Kirzner, 1997).

> "*An entrepreneur is one who propelled by an idea, ambition, personal goal which brings financial capital, equipment, facilities to establish and manage a business"* (Belwal, 2008)**.**

> *"An entrepreneur seeks out and identify potentially profitable economic opportunities agents of growth"* (Nelson and Richard, 1998)**.**

According to Organization for Economic Cooperation and Development most of the writers explain free enterprise as a mankind behaviour appropriated with personal achievement and accomplishment.

> *"*Female entrepreneurs are defined as those who use their knowledge and resources to develop or create new business opportunities, who are actively

involved in managing their businesses, and own at least 50 per cent of the business and have been in operation for longer than a year"(Moore et al., 2011).

According to Beedell and Rehman (2009) it is really hard to understand farm women entrepreneurs because to understand the phenomenon entrepreneurship, it is needed to study the farmer's behaviour and the motivation in a hostile business atmosphere.

1.4 Research Question

What is the impact of flooding on economic losses of rural farm and non-farm women entrepreneurs in 2014?

1.5 Hypothesis of the Study:

The hypothesis of the study for rural women of farm and non-farm entrepreneurs has taken into account for the research.

1.5.1 Farm Women Entrepreneurs

H_0: There is no impact of flooding on economic losses of farm women entrepreneurs

H_1: There is an impact of flooding on economic losses of farm women entrepreneurs

1.5.2 Non-farm Women Entrepreneurs

H_0: There is no impact of flooding on economic losses of non-farm women entrepreneurs

H_1: There is an impact of flooding on economic losses of non-farm women entrepreneurs

1.6 Objectives of the Study

The overall objective of the study is to investigate the impact of flooding on economic losses of rural women entrepreneurs of Muzaffargarh in 2014, the specific objective of the study are:

i. To examine the impact of flooding on economic losses of rural farm and non-farm women entrepreneurs in 2014

ii. To evaluate the measures adopted by the rural farm and non-farm women entrepreneurs

iii. To appraise the role of government and non-government organizations in flood effected area with special reference to rural farm and non-farm women entrepreneurs

1.7 Significance of the Study

There are many studies done on impact of climate change on health, poverty, social issues, women's vulnerability, women's role in agriculture sector, the losses due to climate change, landownership and inheritance, access to credit and market facilities, extension of services and entrepreneurship skills in favor of men. However there is lack of evidence that how rural women are facing losses in their small businesses and the role of government and non-government organizations for their assistance. Therefore, this study intends to provide some information to fill the existing knowledge gap by figuring out the losses of rural women entrepreneurs and the measures adopted by them and taken by gov. and non-government organizations.

Nonetheless the role of women in rural sector is predominantly obvious but unorganized and under-utilized. Women are contributing in income generation remarkably for welfare of the family in terms of employment or to increase their productivity. Women are getting into non-agricultural activities perhaps small businesses due to not getting income in agricultural production and they have less control over economic resources. Thus, they start non-farm activities to get independent income for fulfilling their obligations (Cheston, 2002). Income generating activities are important for poverty alleviation and employment for food security (Kim, 1998). Women generated income might be very small but it contributes in their livelihood

activities like in buying clothes for babies and children, paying fee and health care (IFAD, 2006). Women's income has significant role in household budget share of staples and education but also effects on budget shares allocated to alcohol and cigarettes (FAO, 2015).

1.8 Thesis Outline

Chapter one gives an overview of the study. Chapter two presents details regarding different dynamics of disaster and its impact in rural sector. In chapter three, research methodology and methods for data collection are described in detail. Units of data collection, procedure of data collection and data analysis are also explained in chapter three. Chapter four gives hierarchal details about the locale. First of all it has explained a basic introduction of Muzaffargarh District then it has explained a demographic profile of Muzaffargarh city. Chapter five is about data analysis and discussions. In this chapter, the socio-political and economic structure of rural farm and nonfarm women has explained. The phenomenon of economic losses is also explained thoroughly. Finally, chapter six, in the wake of data analysis, gives some key recommendations and conclusion. This chapter also talks about the area for future cautions.

CHAPTER II

REVIEW OF THE LITERATURE

2.1 Introduction:

The literature review is divided into different sections whereas, section 2.1.2 describes the worldwide climate change patterns, section 2.1.3 discusses the global precipitations and economic losses, 2.1.4 elaborates the Climate Change and Flood Events in Pakistan and Economic Losses, 2.1.5 highlights the Disaster Mitigation Framework in Pakistan, 2.1.6 discusses the women role in agriculture sector, 2.1.7 elaborates the women role in non-agricultural sector, and 2.1.8 tends to figure out the economic losses of farm and non-farm women entrepreneurs.

This chapter provides a detailed review of literature on the "Impact of Climate Change on Economic Losses of Rural Women Entrepreneurs". Climate change is worldwide a huge issue for mankind. All over the world the climate patterns are changing with time. A number of calamities are occurring globally due to the continuous climate variation enactments. All the continents precisely Asia, America and South Africa are facing severe precipitations due to climate variation (EPA, 2007).

In South Asia, the wind patterns normally blow from land to ocean, while monsoonal transformation the wind blows in reverse order i.e. from ocean towards land. The prompt conversation of wind route allows rain to fall in monsoon and causes number of social, political and economic losses painstakingly in the shape of floods from August- November in Pakistan (Cruz, 2007). Most of Pakistan's villages and cities have been suffering from yearly floods since 2000 in monsoon season. To see the impact of climate change in Pakistan, first we should discuss it at global level that how is this affecting globally.

2.2 Worldwide climate change patterns:

Climate change is the most serious problem even more prominent than terrorism hazard faced by nations (Malla, 2008) and (King, 2004). The global land and sea surface temperature is increasing over the time, the greatest changes occurring in

northern Hemisphere. Thus, temperatures are rising from minimum towards maximum since 1860 to 2000 and triggering VBD (Kovats et al., 2001). Furthermore, Intergovernmental Panel on Climate Change (IPCC, 2001) observed most of the worldwide warming is likely attributable to human activities, therefore climatologists believe on the following; assessment of climate model replicated arrangements of greenhouse vapor induced changes, changes patterns in time and space seasonally and the calculated the changes in such zones where small natural unevenness exist (Kovats et al., 2001). . Climate change is emerging due to unsystematic variation in earth. The main causes of climate change are global warming, release of greenhouse gasses; i.e. fuel combustion, industrialization, urbanization and deforestation (Upreti, 1999).

Climate change has immensely influenced by solar energy, unusual temperature and rainfall arrangements. Climate change is a major threat to life, habitats, flora, forests, snow cover, coastal regions, water resources, freshwater and sea life. The geological process is affected by its uncertain occurrence in form of catastrophes i.e. land sliding, earthquake, snow cover melting, land desertification and heavy floods. It has dramatic impact and long-term consequences on food security and human health (Upreti, 1999)

More CO_2 in the atmosphere means more CO_2 in ocean because ocean absorbs CO_2 from the atmosphere and resulted in acidification. It disrupts the plans and sea animals to make shells and skeletons of calcium carbonate in the ocean. Today the ocean water is 30% more acidic than industrial times due to carbonate ions.

The climate change has hit globally, however Africa is one of the top prone area in terms of climate change.it is due to insufficient adaptive measures and observed that till 2050 the vulnerability will get increase by water pressure, and it will project 350-600 million people towards jeopardies due to agrarian production and attainment of food in many Africans regions. It is estimated that low-laying coastal areas will severely get projected by the sea level till the end of the 21st century. This variability in climate has negative impacts on menfolk (EPA. 2007).

Climate change in the Asian region has impacted in faster degree melting glaciers than ever recorded in history. This issue has brought higher risk of flood events and rock /landslides from threatened slopes and caused a deficiency of freshwater in South, East and Southeast Asia chiefly in large river sinks. At one hand climate change impacts could increase crop yield by 20% in east and south regions, while on the other hand it could decrease by 30% in central and south Asia till the end of the 21st century (Cruz, 2007). Asian population is increasing adversely and climate change is impacting more miserably due to hydrological cycle.

Australia and New Zealand are also affected by the climate change; sea level rise, severe storms and coastal flooding and due to the loss of biodiversity some ecologically rich regions could endanger. These catastrophes are facing huge failure in flood adaptation along with sewerages and drainage systems. In this way the more heat waves are getting in economic loss in terms of more deaths (Hennessy, 2007). Europe is also having wide-range impacts of climate change due to glaciers, longer growing seasons, shifts in species and heat waves. Ultimately, Europe has mixed effects including benefits and damages. It has increased the crop yielding but increased winter flooding, threatened ecosystem and ground unpredictability (Alcamo, 2007).

The temperature of Latin America is increasing and decreasing the soil moisture due to worse drought. It has increased salt content and land degradation within agricultural sector. This has brought insignificant effects on drinking water, human consumption, energy generation and agriculture production (Magrin, 2007).

A British Risk Assessment consultancy has anticipated climate susceptibility over upcoming 30year, estimated Pakistan's 20th rank among the most climate-vulnerable countries universally (Maplecroft, 2010).

2.3 Global Precipitations and Economic Losses

Loss is something that permanently you do not have; losing something that was well established. The economic losses can be in the shape of human, environmental features, capital, property, non-renewable resources like water and air etc (Knetsch, 2005). Disaster response workers provide selfless emergency services after any catastrophic event. Usually works in long hours in vulnerable and tragic

circumstances rescues disaster sufferers, cleans up contamination and assist communities at high risk situations (Sim, 2011). He further explains that each catastrophic event (usual or unusual) affects physically, biologically, chemically and psychologically. It has been observed that the developing and least developing countries are extremely prone to negative impacts of natural calamities because of inefficient institutions, financial and technological inability to tackle the risks (Madzwamuze, 2011) and (Iqbal, 2014). Climate change and flooding has vulnerable influence on pure water, health, biodiversity, forestation and socio-economic sectors all over the world (Rasul et al., 2012).

The global temperature has risen by 1 Celsius due to fossils fuel burning, deforestation, sea level rise, shortages of fresh water, increase in droughts, agricultural depilation, and forest and biodiversity loss and predicted to increase more by 1.4C till 2100 (Flammery, 2006). Substantially populated South Asia is affected by floods. Precisely Nepal, Pakistan, India and Bangladesh are expected to displace by rising sea level. The glaciers (i.e. Karakoram, Himalaya and Hindukush) are melting due to global warming (Xu, 2007). These are the main source of fresh water to these countries. Pakistan and India have deteriorating in its conditions (Dasgupta, 2007).

Loss of life in Europe is declining to date but an alarming factor of severe floods since 1990-2000 have affected much of the continents all over the world. Especially Russia, Ukraine, Poland, Czech Republic, Germany, France, Switzerland, Poland, Netherland, Spain and United Kingdom have faced severe floods. It has affected Europe's political-economic and socio-cultural systems as well as the society's environmental relationships (Mitchell, 2003).

Floods and droughts in Malawi indicate a huge decline in GDP by 0.7% per year due to damages and losses. In last 20 years, the floods have decreased 20% in GDP, particularity in agriculture, livestock, infrastructure, and industry and services sectors. Economic losses were much higher during a 1-in-25 year drought. It has increased 17% poverty, 2.1 million people fall below the poverty line, small scale farmer become more vulnerable (Dankova, 2001).

2.4 Climate Change and Flood Events in Pakistan and Economic Losses

In Asia, floods are occurring yearly due to rapid development of La Nina cycle in the Pacific Ocean that have brought change in the atmosphere of Pakistan and caused a number of floods. Pakistan has been facing floods from its independence 1947. The following is the list of floods in Pakistan thereafter, 1950, 1973, 1976, 1977, 1978, 1992, 1995, 1996, 1998, 2001, 2007, 2008, and 2010 still the process continues. Flood in 2010 brought death toll in 1,645 people, 2,479 injured and hundreds of people were missing, flood covered 62 thousand square miles of the land surface. The flood hit all of Pakistan provinces precisely, KPK, Punjab, Sindh and Baluchistan that led to embankment loss of homes, agriculture, transportation infrastructure, telecommunication and other property of folks (Benfield, 2010). The health workers are alarming of risk of water borne disease due to monsoon rains. It has recorded that 20 million people were affected, and 2000 people have died in the result of flood (Moszynski, 2010). In Sindh 2003, Karachi had rainfall for 2 days of 284.5 mm (11.9 inches). In KPK 2007, bump into melting glaciers and heavy rainfall resulted flash floods in Sindh and Baluchistan, death toll recorded as 967 people. Subsequently, in 2011 Sindh again hit by a flood disaster 361 people killed, 5.3 million people pretentious, 1.2 million homes affected and it covered 1.7 million acres of arable land. In September 2012, KPK, upper Sindh and Punjab hit by monsoon rains, death toll recorded as 100 thousands of homes destroyed, and thousands of acres land affected. In August 2013 flood occurred, 80 people died. Then again in September 2014, a massive rainfall occurred in Jummu Kashmir and Punjab caused 257 people died and 1.1 million were affected (Warraich et al., 2011).

The catastrophic event 2010 resulted in major disease of vectors and reported by the assorted press and humanitarian organization in 2011, which found a huge death toll among children and elder age groups (Walsh, 2010). Danish's work furthermore has discussed how the water of Indus basin can be utilize and what are the preparedness steps and management strategies (Mustafa, 2011).

Flood is the most vulnerable circumstance due to climate change as observed in 2010 and 2011. It demolished brutally thousands of dwelling civilizations, billions or millions of hector area and cultivable land (i.e. 14% destruction was found by 2010 flood). This event made losses of 1764 human life, injured 2697 and 1.85 million of

houses damage. And then the rebuilding and restoration of affectless cost approximately 7.5 billion of rupees (Mustafa, 2011). Furthermore he explained the cost statistics of provincial losses that Khyber Pakhtunkhwa (KP) province was the largest victim of flood i.e. 2349 people got effected and 1156 died, 0.2 million houses scrambled.

2.5 Women Role in Agriculture Sector:

A research has conducted on gender, water and climate change. The author explained about the impact of climate change on gender with addition to women's role in agriculture. He further discussed that Pakistan's agriculture sector is using water up to 95% of the total, because agriculture is the backbone of its economy. Female employment in agricultural sector is particularly vital. It was recorded that 74.2% women were concentrated and 24.7% men were employed in agricultural sector in 2010-11. This shows that women were more involved than employed men in agricultural sector (Hamid and Afzal., 2013). Most of the women are involve in unpaid work like managing livestock, farming vegetable as well as substance-level farming in so poor conditions with no economic security (McEvoy, 2008).

In Pakistan women are deeply involved in farming, sowing, transplanting, weeding, harvesting, post-harvesting, threshing, winnowing, drying, grinding, husking, storage, land preparing, applying fertilizer, threshing, off-farm transport, cleaning animals, pumping milk, collecting fodder, collecting livestock and making other products of milk(i.e. cheese, butter, yogurt), selling and doing many other range of factors.

Chakwal in northern Punjab has shown a clear picture of male migration for intensifying the household income and women's highly active enrolment in management of family farming. Specifically Sindh is more market oriented and agricultural trends are considered so high this is why women are paid for cotton-picking and other opportunities. Baluchistan is highly dominant in socio-cultural and patriarchal norms. The agricultural employment and contributes women's participation more than 90% (Hamid and Afzal., 2013). Many researches indicates the gender division of labor in livestock sector in the reference of Panjab that men's role is concentrated as gazing whereas women are also involved in it. A research had

findings in 1980-90s that women are more into livestock production and management predominantly in “barani” agriculture.

2.6 Women Role in non-Agricultural Sector:

The women those are seen not into agricultural farming, they are involved in so forth activates related to this sector. Women’s household work is less valued because it is not considered as cash economy. The household substance level work includes arranging the fodder, managing the livestock, milking cattle, child rearing and caring, reproductive responsibilities, curing the family member, collecting wood, fetching water, cleaning home and other house hold activities. Vulnerability is higher in poor women because they are unable to subsidize in agricultural sector for their substance. It is due to unequal distribution of natural resources. Therefore, it is estimated that Pakistan is comprised of 63% (which is more than two third of its population) of rural sector according to World Bank[1], where agriculture is the largest economy segment. Only 37% rural dwelling people owns land, from this figure 61% people owns less than 5 acres. A Pakistan Household survey 2001 has illustrated women’s ownership only 2.8% over the land (Hamid and Afzal., 2013).

Females are lacking in education, managerial skills, other opportunities, awareness about government facilities and market conditions (Itani, 2011). Lake of government support and solving their problems can create issues for women entrepreneurs.

Sub-Saharan Africa is considered one of the worst regions worldwide that is adversely affected by the influences of climate change in food security. This is the reason the women contribute in growing food up to 80-90%. FAO reported that women produce food more than 50% worldwide. The women in Africa have very low social status that is the reason their women are supposed to support themselves as well as their families painstakingly (Prakash 2003).

According to FAO, women are the guarantors of nutrition, food safety and quality at household and community level and they produce, purchase, handle,

prepare and serve food to families and communities. In this way women are getting empower through making small businesses and enhancing their economic productivity to get rise from the poverty line (Dwarakanath et al., 1999). Thus the women work more hours than men with simple tools in hoeing, weeding, harvesting and planting (FAO, 2011). In developing countries women accounts 60-80% involvement in producing food which seems that they are responsible for half of the world's food producers and providers**.**

2.7 The Economic Losses of Farm and Non-Farm Women Entrepreneurs

Pakistan has been confronting a high exposure of natural catastrophes, which has resulted in a large number of losses of human lives, destruction of assets and thrown number of people below the poverty line. It has been observed that 138 natural calamities have occurred within thirty years of tenure since1990-2010, and killed 87,000 people with addition to the economic loss of US$18 billion (Thomalla et al., 2006). Climatic variability is bringing extreme weather events, water related hazards, livelihood vulnerability and security issues exclusively among women. Women can be more susceptible to the burden of the costs of natural disaster in disproportionate circumstances, principally when women's rights not addressed (UNDP, 2011). The report of Asian Development Bank (ADB) highlighted women's medical, hygiene, nutritional need and girls' education were neglected in flood 2010. Another research on gendered impact of floods 2010-11 on gendered vulnerability assessment took initiative for gender sensitive thoughts but remain unheard (Shah, 2012) (Demetriades and Esplen, 2008).

South Punjab is facing unpredictable rainfall which is becoming a huge issue for crop farming and livestock production for small-scale farmers. A research has findings on the impact of climate change on agriculture and reported about the high ratio of rain in those areas when it is not needed and at other side when it is needed there is no rain. Just because of this imbalanced standards of rainfall resulting in meager health among the farmers especially in women (Hamid and Afzal., 2013). Climate change has increased the frequency of droughts, flooding and other water related hazards, which is increasing water related diseases (i.e. water borne and vector borne) among inhabitants. These diseases have a greater impact on women's reproductive tasks and increasing health caring responsibility among them (Ahmad et al., 1993).

A study has been conducted on Southeast Asian region and investigated impact of climate variation economically by opting CGE model. It declared that the impact would not remain same worldwide and the developing countries would encounter massive losses. Due to unusual patterns of climate southeast would decline in GDP by 1.4%, crop productivity by 17%, agricultural productivity i.e. rice by 16.5% and wheat by 36.3% till 2080. In this way the dependency and import ratio will get high within agriculture (Zhai and Zhuang, 2012).

A research conducted by using OLS method and found the climate change impact that increase in weather temperature approximately 3°C would decrease the growing capacity of wheat in Pakistan. It has positive impact on Chitral because of its high location and adverse influence on Swat due to low loftiness place. Thus, this impact has enhance the yield by 14% in Chitral and decreased by 7% in Swat (Hussain, 2007) (Janjua et al., 2012).

Men and women have dissimilar experiences towards climate jeopardies and chances because of gendered based division of labor (Rossi and Lambrou, 2008). Although, there is similar and dissimilar attainment of information, stills and responsibilities among both genders in the processes of production, reproduction and trade, but women's knowledge about climate and agriculture has ignored in rural development in past for household food security in drought and famine (Eriksen and Ramphel, 2004). A study done on climate change found that it has positive and negative effects on women. It is not always resulted in women's vulnerability, at many times women switch themselves from one to other crop cultivation, at times it increases their workloads, at other hand they become benefitted by the higher independent earnings (Nelson, 2009).

The study conducted on "Economic Vulnerability and Disaster Risk Assessment in Malavi and Mozambique" measured economic risks of floods and droughts. The researcher has divided the losses in structural (physical) and non-structural (biological). The study is based on Standard Precipitation Index (SPI) by using precipitation data analysis. It has used the regression models to identify statistical, non-linear relationship historical drought events and its severities and the current crop production losses observed. It measured that the production losses have huge gap between the expected production and observed production. Floods and

droughts are major obstacles for agricultural activities and growth in Malawi and Mozambique. It was calculated that 12% maize production lost each year due to floods and droughts and the total loss in GDP is 1.7% by floods each year. The results show that the severe floods and droughts are bringing direct losses towards assets and increasing poverty in both of the countries (GFDRR, 2005).

The study on " The impact of Socioeconomic and Demographic Variables on Poverty: a Village study" of Betti Nala in Tehsil Jatoi, district Muzaffargarh in south Punjab has explored the poverty as complex, dynamic, multidimensional and changing by social group, season, location and country. Poverty means deprived socially, economically, emotionally and materially. The study comprises of primary data by looking into the household size, poverty profile, dependency ratio of households, participation, landholdings and number of livestock has significant impact on poverty. Punjab accounts 56% of the country's population, whereas 36% ranks in second highest and 40% of its population is poor according to Federal Bureau of Statistics (FBS, 2002).

Amertia Sen identified that there is stock of food but poor people have no access to it, because they are bound of making it but at a very limited approach. Thus, the institutions need to ensure deprived people's possessions to get right towards choice and accomplishment. Poverty has various dimensions like; lack of "means in relation to needs"(absolute poverty), "lack of means in relation to means of others"(inequality or relative poverty). The study indicates the more poverty means more economic loss, where already poor had less and they lost due to having more dependency ratio. The age of household head (in terms of experienced/unexperienced) and low participation of households are also increasing the dependency ratio of southern Punjab (Chaudhry et al., 2009).

The study "Resilience of Local Communities to Climate Change around a Ramsar Site in Pakistan" has conducted to calculate the peoples' perception about the impact of climate change and loss of biodiversity in North West of KotAddu, in Muzaffargarh. The study explains that more than 2500 people lives near the banks of Taunsa Barrage in villages. These are more vulnerable to the water effects because they are directly and indirectly linked with this wetland for their survival they mainly do fishing, working as labourers in agriculture, teaching, labouring, factory worker,

cobbler, barber, carpenter, poultry industry, basket making, saf (mat) making and goldsmith for the substance and livelihood.

The women are involved in basket making, cotton picking, sesame collection, saf making, wheat collection and livestock rearing for income generation and domestic use. The community constitute 500 households and 84% people are involved in agriculture using land to cultivate for cash cropping. The research was conducted through primary source. The study explains that there merely a study has conducted which looked into the resilience, awareness and response approaches of the native communities contrary to the CC particularly in threatened areas.

Since 20th century the average temperature of Pakistan is consistent increasing by the average of 0.6-1.0 ^{o}C in arid coastal, mountains and hyper arid plains. Therefore, it got 10-15% decrease in rainfall in seaside belt and hyper waterless plains. Simultaneously, it got 18-32% upsurge in precipitation in the monsoon zone. The northern Indian ocean effects India, Pakistan Bangladesh, and Srilanka. According to IPCC the warming of climate observed changes since 1950s. The atmosphere and the temperature is getting warmer, sea level is rising, the ice and snow is melting and the greenhouse gasses intensity is getting higher. An average annual increase in the surface of air temperature has observed 2.9 ^{o} in boreal Asia (Farooqi and O'Rahilly, 2005).

Asian region seems more susceptible to climate change. Numerous reports illustrate that nearly 5000 glaciers are in rapid retreat; up to 23% has retreated in last decade. Nearly, 80% of the flow into Indus River is due to glacier and snow melt. This flash water outburst can flood towns and villages and becomes a cause of a loss in biodiversity and reduces the availability of fresh water. The changes in air and precipitations patterns will definitely impact the agricultural productivity (Siddiqui, 2012).

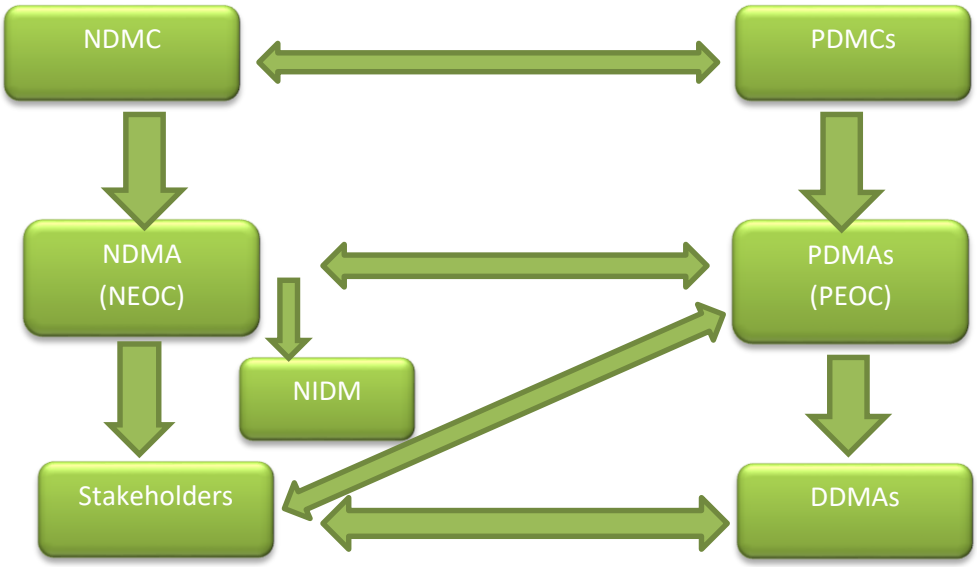
The study has explored that the population of Muzaffargarh was increased by 76% from 1991-1998 with the annual growth rate of 3.4% (District Census Report 2000). The health situation was really poor and found high rate of malaria in males

and females but tuberculosis was observed in females due to high exposure of smoke during cooking (Shelly et al., 2015).

2.8 Disaster mitigation framework in Pakistan:

Pakistan has National Disaster Management Act 2010 for institutional arrangements i.e. Disaster Management Commissions at National and provincial level named as NDMC and PDMC. Sequentially, Disaster Management Authorities at National and District level named as NDMA and DDMA.

Figure 2.1 Institutional arrangements



National Institute of Disaster Management (NIDM), National Disaster management (NDMF) and National Disaster Response Force (NDRF) are working for community and local level programming, multi hazard prompt warning system, emergency responses systems and mainstreaming disaster risk reduction into development.

(Mustafa, 2011) explained that before the flood period most of the needs were tendered to the victims such as food, shelter and clean water etc., but at that time the drainage system were remain intangible then the issue of drainage taken by the NDMA in December 2010. It has never been given a priority to drainage system. There were delay in water subsidence which not only become a consequence of poor livelihood but also increased vector diseases and mortalities.

Hyogo Framework for Action (HFA) 2005-2015, ten year plan adopted by Kobe, Hyogo, and Japan which was built on the resilience of Nations and communities to disaster. It was aimed to reduce the vulnerability, hazard and risk. It challenged to provide resilience, survival, dignity, and livelihood to the individuals specifically poor for possible development. It dominantly focused on socio-economic stability, development at prone zones, climate variability, and climate change and exposes the disease affects. The framework also interacts with social, economic, environmental and physical vulnerabilities of the prone areas. It also looks into the policies, planes, sustainable development and poverty reduction through reducing disasters and its impact. It initiates in *Social and Economic Development Practices* (option f) "protect and strengthen critical public facilities and physical infrastructure i.e. schools, hospitals, clinics, water and power plants, disaster warning centers and so on" (Morris, 2005).

Climate change is a dispute at all dimensions though social, political economic or scientific region. Humanity will face jeopardize due to floods until the concrete actions could not be taken for prevention and protection (Babar et al., 2007). Agricultural economy based countries are highly susceptible to climate change, ultimately fluctuates in yielding crops. It is estimated that at a vast range the climate change has its negative impact to agriculture and it is threatening food security globally (IPCC, 2007).

2.9 Conceptual Framework

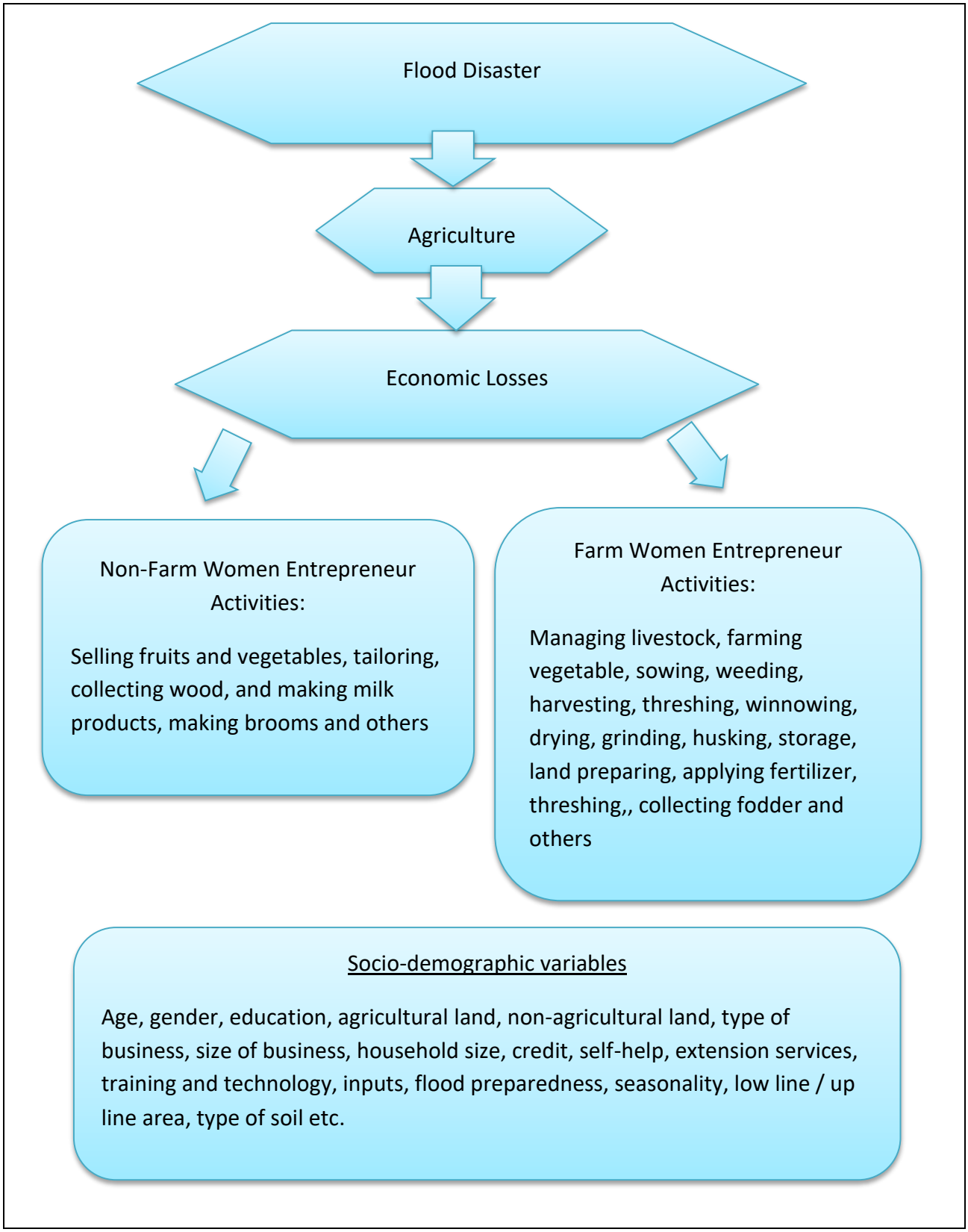
The conceptual framework has tried to depict through diagram that the impact of flood disaster on agriculture that how it brings the economic losses within farm and non-farm women entrepreneurs. This paper is precisely focused on the economic losses of floods in 2014.

Pakistan is an agricultural economy where more than 65% people depend on agriculture for subsistence. The conceptual framework is representing that alterations in climate is bringing flood in monsoon season yearly in Pakistan, this conversion has created immense decline in agricultural productivity. Consequently, the losses among indigenous farm and non-farm women who contributes more than 80% role in agricultural sector can reduce the overall economic productivity.

The conceptual framework underlying in this study has two dimensions of losses, one is the losses of farm women entrepreneurs and the other is non-farm women entrepreneurs. The socio-economic profile of locale, review of literature and other sections has represented the small businesses among women entrepreneurs. The small business undertaken by non-farm women entrepreneurs are tailoring, collecting wood, making brooms and other milk products, and selling fruits and vegetables. At other hand the work occupied by farm women entrepreneurs is mainly considered as managing livestock, farming vegetable, sowing, weeding, harvesting, threshing, winnowing, drying, grinding, husking, storage, land preparing, applying fertilizer, threshing, off-farm transport, cleaning animals, pumping milk, collecting fodder and others. Consequently, the monsoon precipitations affect their small business in huge losses. The variables involved in damages are age, gender, education, agricultural land, non-agricultural land, size of business, household size, credit, self-help, extension services, training and technology, inputs, flood preparedness, seasonality, low line / up line area, type of soil and etc.

In district Muzaffargarh there are number of plans for disaster risk management such as district line departments, district coordination officers, Naib district Nazim, Union Council, district council, village groups, civil defense, Chief Minister, NDMA, PDMA, Metrological Department, Police stations, Edhi Foundation, Media, NGO/ INGOs, Educational institutes and Armed forces and Rangers etc. District Disaster Risk Management Plan (DDRMP) for District Muzaffargarh is another achievement for supporting in post development processes and eliminating and coping up for future risks from the impact of disaster. District Muzaffargarh is selected from the area of South Punjab to see the impact and economic losses of flooding on their women entrepreneurs and what are their coping mechanisms for reducing its impact and the role of other departments in minimizing it.

Figure 2.2: Economic Losses Among Farm and Non-Farm Women Entrepreneur



Conceptual Framework

CHAPTER III

RESEARCH METHODOLOGY AND METHODS

3.1 Introduction

Researcher has divided chapter III into four parts. The first part explained and justified research methodology as well as research design. It has enlightened and justified the procedures, tools and units of data collection in its second part. The third part contains sampling framework and methods used in sampling. Last part discussed the steps of framework analysis as in qualitative and triangulation method research.

3.2 Research Methodology and Research Method

Research methodology and method are two dissimilar terms, where the methodology is basically a model that entails the principals and framework and expresses the guidelines to complete the research plan (Sarantakos, 2005). It is a procedure to answer in the systematic way of the research problem. It is also known as the science of studying how the research is conducted scientifically. At other hand the method is about the tool and techniques use in conducting data (Sarantakos, 2005). Nonetheless, research methods and design related to this research work has described in few steps below

3.3 Research Design

Research design is a structural construction that integrates the solution of basic questions i.e. research question and objectives of the study. In other words it is the strategy and the structure of the research. Wampold, Heppner and Kivlighan (1999) explained that quantitative research method use the world numerically and emphasizes interpretation, observation and understanding in a realistic way. At the other hand the qualitative research is mainly linguistic i.e. language based worldwide (Heppner et al., 1999). Bryman and Bell (2015) explains qualitative research methods discuss to case studies where the outcomes gathered by studying different phenomenon (Gauri et al., 1995).

In order to narrow down the population of research, therefore researcher has chosen descriptive research design, as it provides in-depth investigation about cause and effects of some social and psychological aspects of a group or an individual of the particular community. Consequently it does not emphasis on facts and figures. It provides the answers of “how”, “what” and “why”. Thus it has helped the researcher to comprehend the entire scenario of research question.

Conversely, this is a perception based survey in which qualitative and triangulation method was supplementary appropriate. As it was to study that what are the economic losses faced by farm and nonfarm women entrepreneurs due to floods. The study has some variables which has focused on the losses of rural women entrepreneurs. The statement (economic losses faced by women) can easily be understood by exhaustively studying internal and external elements of the locale.

There are several research designs offered in social research. By narrowing the types of research designs which are exploratory, descriptive, explanatory and others to treat with a problem of the research. Primarily, there are a number of research studies that have been designed to investigate the answer of any research question. Thus in exploratory research design a researcher gets familiarized with the certain subject/ topic thoroughly. Exploratory research design is usually used by a research when he wants to explore either a new concern or subject. Moreover, a descriptive study describes an incident, occasion or some situation. This type of study a researcher has to observe a particular phenomenon. Later the researcher has to define what he has experienced. Lastly, in an explanatory research design the question rises “why”. This kind of researches done by a research meanwhile he wants to put light and justify why a certain incident, situation or phenomenon has occurred (Babbie, 2013).

Though, researcher has used descriptive approach in her research designs. In the light of Earl Babbie (2013) numerous qualitative researches target to descriptive research design. It deals with some queries i.e. when, how what, and where. Thus descriptive method is suitable to this research question i.e. “what” are the losses of farm and non-farm women entrepreneurs due to floods?”

3.4 Data Collection Methods

Research methods talk about all those approaches through which the study is directed. And all those approaches that an investigator uses during studying answer any research question is known as data collection method (Kothari, 2004).

3.5 Units of Data Collection

Unit can be explained that it is a part of certain phenomenon through this the data has to be conducted. These units can be in the form of individuals, households or organisations etc (Beukenhorst and Kerssemakers, 2012). This study comprises mainly units of data collection from individuals from the treated households, group of people, conferences, web-search, j.store articles, NGO reports, pamphlets, brochures, printed materials, internet websites and books. Furthermore the data has conducted in following ways

For objective 1: To examine the impact of flooding on economic loss of rural farm and non-farm women entrepreneurs, have collected through primary and secondary data. Primary data has collected through semi-structured and unstructured interviews. It was also gathered by participant observant and focused group discussions. Key informant also helped in getting appropriate and accurate data from the locale.

For objective2: To evaluate the coping strategies and measures adopted by the rural farm and non-farm women entrepreneurs, the data comprised following sources i.e. firsthand information through un-structured, semi-structured interviews and focused group discussions from rural farm and non-farm women entrepreneurs, as well as secondary data from different scholars, researchers, newspaper articles, j.store and google scholar internet search.

For objective 3: To apprise the role of government and non-government organizations in flood effected area with special reference to rural farm and non-farm women entrepreneurs has conducted through climate change experts' opinions and other authorized members whom are concerned in mitigation process of flood vulnerability.

3.6 Method of Data Collection

From the very first phase, researcher has acknowledged and targeted respondents of this research by taken help from the relatives, disciples and whom the researcher was known of Muzaffargarh. She took a start of interviews on June 20th 2016 from rural women entrepreneurs. Researcher was a participant observer and had few relatives and some known disciples through key informant of rural farm and non-farm women entrepreneurs of Basti Karak, Muzaffargarh. Consequently, researcher took semi-structured and unstructured interviews correspondingly both from chief disciples and relatives of farm and non-farm women entrepreneurs. The interviews have conducted in approximately one hour and above time.

The researcher as participant observer had her relatives and a key informant so it got easier for her to approach respondents in the selected locale; she already found some phone numbers to communicate with them before leaving home. Researcher has given a proper detailed introduction about the research topic before starting her interview. Once she got a positive gesture from the respondents she conducted interview based data and couple of focused group discussions. In rural areas, the respondents hesitated while answering my questions but gradually with the passage of time and with the help of key informant answered freely.

3.7 Sampling Framework

Sample is a small part of a population. The sampling is mainly known by two categories e.g. (probability and nonprobability distribution). However the probability is the quantitative method while the nonprobability is qualitative method (Neumen, 2006). According to Bryman and Bell (2015) primary data information is collected by using questionnaires, conferences, discussions, interviews and tests. At the other hand secondary data analysis depends upon reports, pamphlets, documents, research articles through other individuals.

Table 3.1: Sampling Framework

Treated Area	Sample size	Type Perception based	Type of respondents
Basti-karak	105	Participant observation, key informant, semi-structure and un-structured interviews	Women entrepreneurs Sampling Triangulation method Purposive and stratified
No. of respondents	105		
No. of Interview:	105		
Whom are respondents:	Women entrepreneurs (either from farm or non-farm)		

Researcher has gathered data by using primary as well as secondary source. Researcher has used secondary data which comprises research articles and books from google scholar and j.store; newspapers, reports and other internet search. Consequently, she gathered primary data in her qualitative and triangulation method research which comprises participant observation, semi-structured and unstructured interviews as discussed in 3.5 units of data collection.

The primary sampling unit (PSU) of the research is Tehsil Muzaffargarh. The treated area Basti-Karak has selected purposively. From this village the village level purposive sampling has been made that the key informant has used his social network to mention potentiated respondents to participate in contribution of the study. It is convenient method as it recruits the unseen population. The key informant has directed about the women entrepreneur households with problem in Basti-karak.

3.8 Report Building

Report building is very important while confronting respondents. It gets really tough sometimes to make a respondent disclose his personal issues. Thus a researcher uses some ethics throughout any research. It is as important as the tea without sugar. It is really important to develop trust level by given them a detailed introduction and purpose of asking question before directly asking them questions. Hereafter the respondent will respond to the questions freely.

Likewise researcher has followed the following ethics

i. The research has directed after receiving approval from the institute.

ii. Researcher has tried her best to evade all unnecessary actions in front of respondents apart from interviewing.

iii. Researcher remained completely ready for having zero hierarchical conversation to the respondents.

iv. Researcher has clarified aim of research before starting question.

v. Researcher has guaranteed all disciples that their personal information shall remain confidential.

3.9 Key Informants

It is essential to make the data authentic and reliable, for this reason researcher adopted some authentic sources. The key informants not only helped in interviews but also give generalized information according to the purpose of research. In this research the key informant has used for approaching farm and non-farm women entrepreneurs in a short period of time. The key informant had the links and information about these women that helped the researcher in finding relevant information through interviews.

3.10 Participant Observation

The researcher has used participant observation method as it is useful, the main benefit of this technique is eradication of subjective bias, the knowledge in participant observation belongs to presently occurring phenomenon, and thus this method provides free and independent answers of the questions (Kothari, 2004). The quality of this method is it gives the information through researcher's own observation instead of taking information fron respondent. In this method we do not only participant observation but also we collect information from interviews and documents etc. (Bryman, 2015).

In this research the researcher was partly participant observer in conducting the data as it helped the researcher to empathize the realism of farm and non-farm women of their losses. Researcher has also used interviews and documents for observation in her daily life.

3.11 Interviews

It is a primary data analysis so researcher has also used qualitative interview. Principally quantitative interviewing is structured interview and the questions are close-ended, at the other hand the qualitative interviewing is unstructured interviews

and comprises open-ended questions (Bryman and Bell, 2015). Furthermore, qualitative interview permits the defendants to response freely and lengthily, in this way new questions possibly rise and thus the more suitable comes of the questions (Bryman and Bell, 2015). This is the key reason researcher has used qualitative interviews for her research.

3.12 Unstructured Interviews

There are four types of interviews such as informal, structured, unstructured and semi structured interviews. Unstructured way of collecting data is mostly used for qualitative based researches (Bernard, 1995). This method has helped enormously in the collection of data and given freedom of speech, ideas and views in own words in face to face corresponding This technique has also helped the researcher in conducting interview and respondent feels informal in answering in any route of question. The information has collected by providing freedom of speech to the respondent.

3.13 Semi-Structured Interviews

The researcher has to be prepared for the interview and having no control over the informant. Thus semi structured interviews can alter any time at any direction during the tenure of questioning. This method was found useful by the researcher because it has the quality to continue the conversation if got nearer to any area of the research. The flexible Semi-structured interviews are having not more than one chance to conduct interview the respondent. These interviews are powerful tools to gather in depth interviews by using the probe (Bernard, 1995).

3.14 Focus Group Discussion

This method has also been availed for conducting detailed and diverse information due to having short period of time. However focus group discussion is loosely planned, facilitated discussion among a tiny group of stakeholders depending upon 4 to 6 people. This method led a moderator, who's goal is to generate maximum number of ideas and viewpoints from the group members in an friendly and inoffensive environment (USAID, 2008).

3.15 Sampling

Sampling is the process of minimizing a large population into a small group of cases (Walliman, 2010).

3.16 Purposive Sampling

The purposive sampling is nonprobability sampling technique. The researcher has used this technique because it is convenient for approaching the sample selected. It allows researcher to choose purposively the sample whomever he/she feels applicable for the study. This is why the final samples of the study gathered from this purposively selected sample.

This method has used by the researcher to save time and money. This method is used by a large number of researchers in their qualitative research approaches (Bryman and Bell, 2015). This method is sometimes parallel to non-probability sampling. In this research the researcher has done purposive sampling. She does not take sample of research participants randomly.

3.17 Stratified Sampling

Researcher has used stratified sampling to see the floods losses among different strata from the purposely selected locale Basti karak. It was really hard for the researcher to get information from all over the locale. So the researcher made the strata of the locale and selected strata from these for getting variability in answers of the respondents. The researcher has used stratification because this is the procedure to group the units to compose a large population into small similar groups or strata earlier sampling (Babbie, 2013).

3. 18 Data Analysis

In qualitative research to explicit the hidden knowledge we see the meaning of peoples' actions, gestures and word systematically. In few of the cases that information/ knowledge is overt at the other hand this knowledge is needed to reveal by the researcher. It is really important to organize data in a qualitative analysis. It also needs to be carefully select, interpret, theorize and report the data before analyzing it (Ryan, 2006)

Researcher has used thematic approach to analyze the data. There are two fundamental ways analyzing data the one is inductive and the other is deductive approach. In the first way the researcher made the codes of the conducted data instead of directly fitting into already established frame.this type of analysis provides detailed information about the research questions which makes the particular research queries capable of evolving over the procedure of coding. Normally this type of analysis gives a detailed understanding and explanation in codes of themes (Braun and Clarke, 2006).

As described above that researcher has used both inductive thematic approach and deductive thematic approach for her study because it provided to identify themes from the epistemology and interviews. As the researcher has undergone with themes and codes she also used thematic framework analysis which has mentioned as follows.

3.19 Indexing and Coding

In this method of indexing and coding researcher did line-by-line coding of the relevant information. Researcher did this line-by-line coding and given one by one code to one kind of information in the data. This provided careful detail and attention to each line, thus taking every detail within the transcripts. According to Braun and Clarke (2006) thus researcher has also taken few notes to highlight different segments of the data in the form of text.

3.20 Memo Writing

Along with coding, characterizing themes and making small text notes there is an another way of writing memos. Here in this research the researcher tried to save some points on her finger tips as she wrote memos. Memo writing is the method which usually permits the author to pen down the points as it comes to mind. It carries some groups of codes separately it has to be divided in its own components which enhances the researchers' probing into unspecified, unspoken and shortened denotation (Strauss and Corbin, 1998). The Researcher has written memos wherever she felt important to make easy her process of conducting data and transcripts of interviews from the very beginning to the end of the research. This method helped her to finalize the analysis in some pinpoints and headings.

3.21 Data Verification

A nonlinear process in qualitative research is dara verification. There are plenty of ways of verification of the qualitative data in qualitative research. The most important is to have triangulation which provides data on same social phenomena, knowledges, and dig out the events in different ways. For this research the researcher has done with cross-checking information by triangulation whereas the information was taken by interviews, participant observation and informal discussions.

CHAPTER IV

LOCALE OF THE RESEARCH

4.1 Introduction

The study was conducted in Muzaffargarh city which is the capital of District Muzaffargarh in South Punjab. The name Muzaffargarh means "Fort of Muzffar" and it is called that because old town is situated within fort walls and built by Nawam Muzaffar khan of Multan. Muzaffargarh city is ranged 8,435 km^2. It is located among the Chenab River at East and Indus River at its West. (Chaudhry, 2009).

Figure 4.1: Map of Muzaffargarh

Source:
https://www.google.com/maps/place/Rajanpur+District,+Pakistan/@29.1306825,69.581021,9z/data=!4m2!3m1!1s0x3930e80048603c39:0xccaae097719ad2ee Dated 04. 02. 2016

4.2 Muzaffargarh District

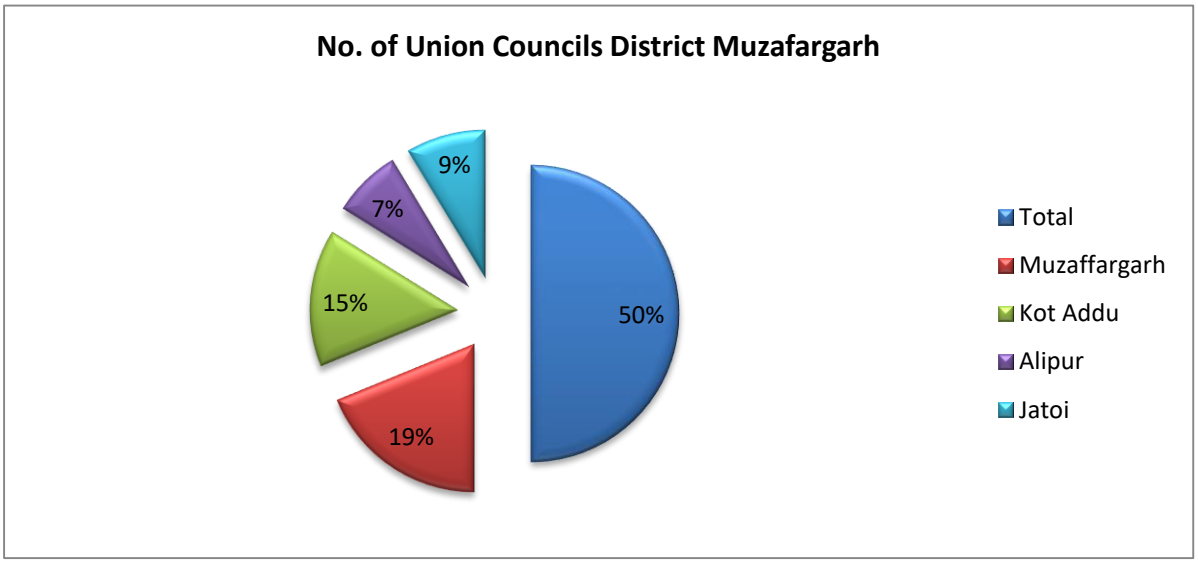
Muzaffargarh district includes four Tehsils (Alipur, Jatoi, Kot Addu and Muzaffargarh), 93 Union Councils and 984 Village.

Figure 4.2. Tehsils and Unions of District Muzaffargarh

Tehsil	Unions	Total Unions
Alipur	ALIPUR CITY, ALIWALI, ALPURI, BAIT MULLANWALI, BAZWALA, BUNERWAL, BUTYAL, CHAKENSAR, DAMORAI, DANDAI, DEBRAI, FATHEPUR JANUBI, GHALWAN, KHAIRPUR SADAT, KHANGARH DOAM, KUZ KANA, LANGARWAH, LILOWNAI, MAIRA, MALIK KHEIL, MUDWALA, MURADPUR JANUBI, OPAL, PIR ABAD, PIR KHANA, SARKOOL, SEETPUR, SHAHPUR, SULTANPUR, YAKAYWALAI	30
Jatoi	BAIR BUND, BAIT MIR HAZAR KHAN B, BAKANI, BELAYWALA, BINDA ISHAQ, DAMMER WALA SHUMALI, JATOI CITY, JATOI SHUMALI, JEHLARIN, JHUGGIWALA, KOTLA GAMOON, RAMPUR, SABAYWALA, SEHRAH SULTAN CITY, SHAHBAZPUR, VANIS	16
Kot Adu	ALURID, BAIT QAIMWALA, BHARRI HOG, BUDH, CHAK NO.547/TDA., CHAK NO.565/TDA, CHAK NO.632/TDA, CHOWK SARWAR SHAHEED, D.D.PANNAH, DOGAR KOLASRA, GHAZI GHATT, HINJRAI, IHSANPUR, KOT ADU NO 2, KOT ADU NO. 1, KOT ADU NO.3, MANHAN, MEHMOOD KOT, MIRPUR BHAGAL, PATAL MONDA, PATTAL KOT ADU, PATTI GHULAM ALI, SANAWAN, SHADI KHAN MONDA, SHEIKH UMER, THATHA GURMANI, U.C.22 GUJRAT, WAHANDUR	28
Muzaffargarh	AHMED MOHANA, ALUDAYWALL, BASEERA (MUZAFARGARH), BASTI KARAK, BRAHIMWALL, CHAK FERAZI, DARAIN, GANGA, GAREY WAHIN, GHAZANGARGARH, GUL WALA, JAGGATPUR, KARAMDAD QURESHI, KHANGARH, KHANPUR SHUMALI, LUTKARAN, M.GARH CITY NO.1, M.GARH CITY NO.2, M.GARH CITY NO.3, MANIKA BHUTTA, MEHRA SHERQI, MGARH CITY NO.4, MINKPUR, MURADABAD, NOHANWALI, RANGPUR, ROHILLANWALI, SHAH JAMAL, SHARIF CHAJRAH, TALEERI, THATHA QURESHI, UMER PUR JANUBI, USMAN KORIA, UTTRA SINDEELA, WAH PITAFI	35
Total Number of Tehsils = 4 and Total Unions = 109		

Source: (Nihal, 2009)

Figure 4.3: Number of Union Councils in District Muzaffargarh

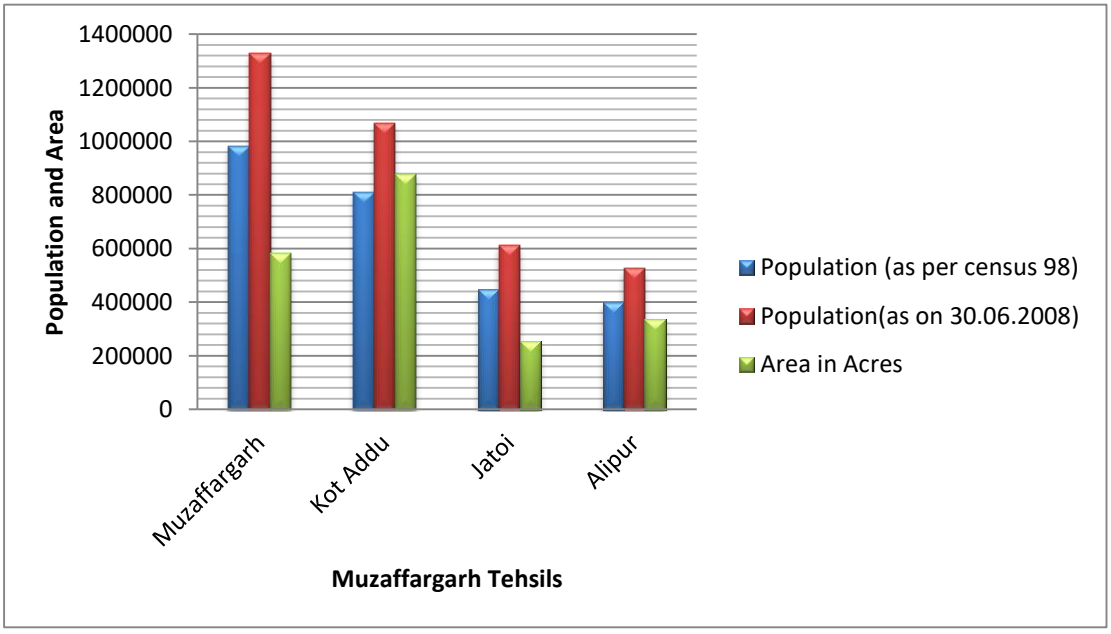


Source: (Nihal, 2009)

Muzaffargarh is located in South Punjab next to Multan about 34 Km of drive. The district was found in 1704 by Muzzafar Khan the Governor of Multan. It is situated with the District Layyah, District Dera Ghazi Khan, District Bhahawalpur and Rahimyar Khan. It is covered with 2052571 acres of area. Most of its regions are arid and dry and having barren land because of the floods from nearby rivers Chanab and Indus. it has plain and fertile land, riverine belts and sand dunes land. From which it is estimated that only 1132889 area covers the fertile land for cultivation and the rest of the area 869682 is marked as uncultivable surface.

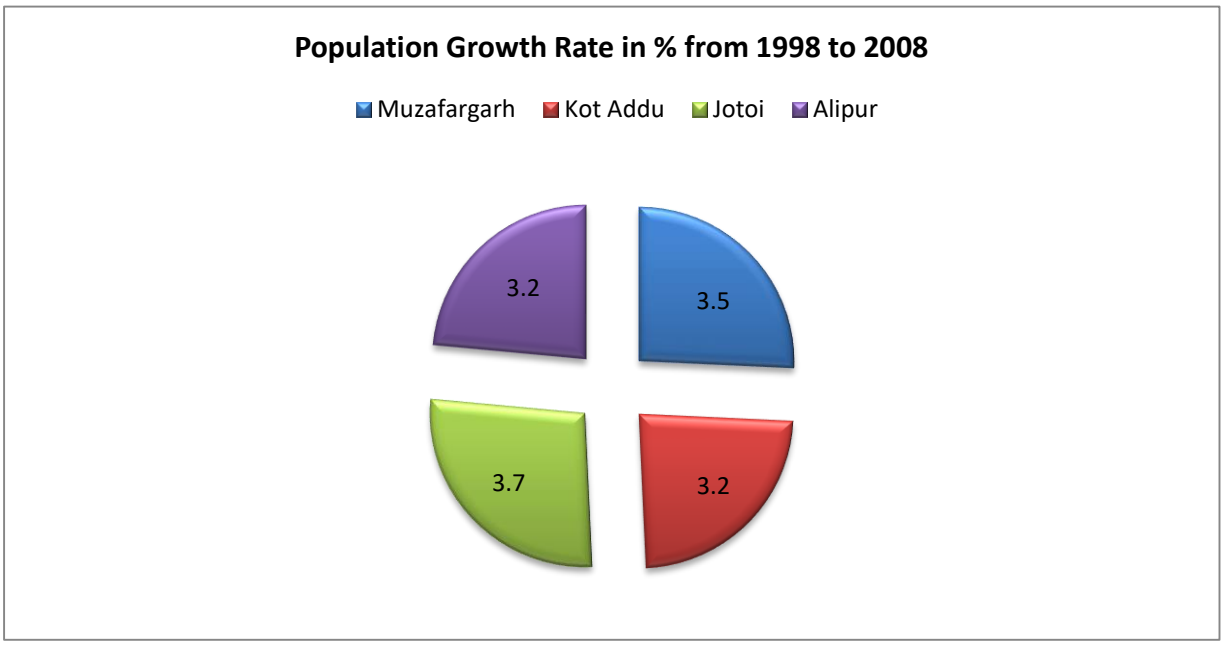
The population of targeted area as per the 1998 census carried out by Government of Pakistan was 123,404 (Baseline Assessment Study Report District Muzaffargarh , 2009). It has 74% of the population are living in rural area and rest of the 36% population lives in urban areas. The female population ratio in rural areas is 48% and the rest of the 52% population is male. The literacy rate of Muzaffargarh is only 29%, where male have 40% of the literacy and female literacy ratio is not half as male ratio. female comprises 14% of literacy among them. (Chaudhry, 2009)

Figure 4.4: Demographic Details



Source: (Baseline Assessment Study Report District Muzaffargarh, 2009), Dated 04.02.2016.

Figure 4.5: Population growth rate in %age from 1998 to 2008



Source: (Baseline Assessment Study Report District Muzaffargarh, 2009), Dated 04.02.2016.

According to Baseline Study Report of District Muzaffargarh, the target area is pre-dominantly rural as only 12.75 percent of population is living in urban areas. The study is going to be conducted in the area of South Punjab. In particular Muzaffargarh District is severely affected by the flooding 2010. The targeted area is highly at risk due to heavy flooding during the rainy season. It is because of its close proximity to river Chenab and Indus River. The targeted area also remained the victim of many disasters throughout the history such as droughts, floods and heat waves etc.

According to an estimate, nearly 131,293 houses damaged completely in the area due to flood in 2010. The flood also severely affected the agriculture sector of the target area. About 69 percent in tehsil Muzaffargarh, 56 percent in tehsil kot Addu, 46 percent in tehsil Alipur and 26 percent in tehsil Jatoi cultivated area were severely affected by flood in 2010. The standing crops of kharif have been affected such as rice, cotton, sugarcane, fodder and vegetables. According to an estimate nearly one million tons of food and seed stocks destroyed in flood. Many on-farm water courses and tube wells have badly devastated in the target area. This flood also adversely affected on the forthcoming Rabi crops of the season which are not planted because of the stagnant water in many cultivated areas in the district.

The target population has little awareness about natural hazards and people are generally living in vulnerable areas. Poor communications, harsh climate and transport infrastructure makes the district vulnerable and highly at risk in any case of disaster.

So, a need arise to identify, explore and highlight the impact of disaster flood, particularly economic losses in agriculture sector among farm women entrepreneurs and non-farm women entrepreneurs.

CHAPTER-V

DATA ANALYSIS AND DISCUSSION

5.1 Introduction

This research is about the "Impact of Disaster on Farm and Non-Farm Women Entrepreneurs: A Case Study from Muzaffargarh, Punjab". This study has aimed to identify the economic losses among women entrepreneurs. This phenomenon has led insubstantial to study deeply in this rapid growing age of 21st century. This is basic theme of concerned research which has accomplished by the assistance of the supervisor, my hard work and the information provided by the respondents. This whole journey has made me to explore relevant information about the research topic. It is not easy to collect data from the victims of crises to peel up them for an accurate information and heel up them for better future events. The respondents were challenging but at the end of the day it went easier to conduct and conclude the provided data.

This chapter includes data analysis and discussion in the light of findings. The following given below is defined the socio-economic structure through which the Basti Karak women entrepreneur have their livelihood from rural areas and faced challenges and losses due to uncertain catastrophic floods. This chapter also comprises the role of governmental and non-governmental organizations in minimizing the terrifying flood losses and the measures adopted by women entrepreneurs.

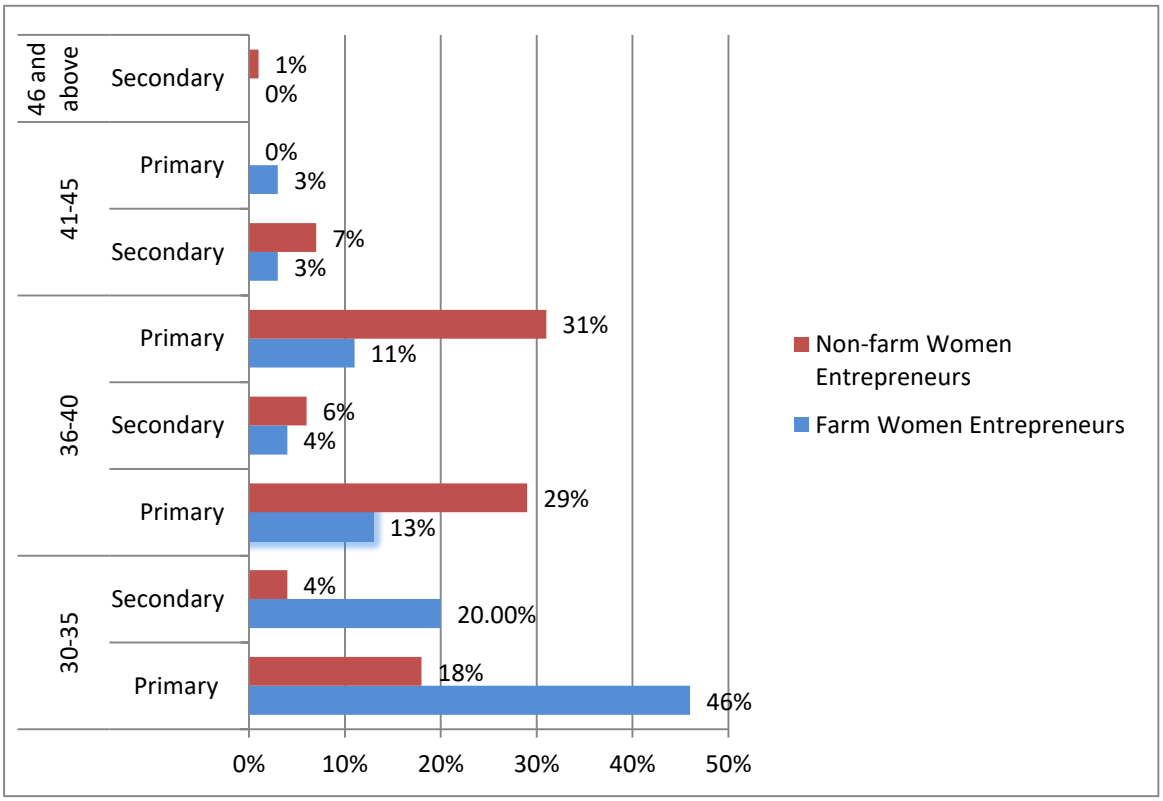
5.1.1 Analysis and Discussion

Muzaffargarh is situated between the river Ravi and river Chanab on its west and east respectively. This is the main reason of flooding in monsoon. It has flooded 50% of its total area in 2010. Its population is not as much educated specifically of its rural areas including the locale of the study i.e. Basti Karak. The overall literacy rate of Muzaffargarh is 43% and the female ratio is adversely deprived i.e., 29% as per PSLM survey (2010-2011). The women concerned to this study were between 30 to 49 years. It is recorded that about 75% of women entrepreneurs were either enrolled in primary

level[2] or not been to school and at the other hand rest of 25% of women were enrolled within secondary education[3] but most of them could not completed successfully (WSIP, 2013).

The interviews highlighted the ratio of educational record of farm and non-farm women entrepreneurs that either they have attended primary level or secondary level education.The trend shows that greater percentage of primary education among farm women entrepreneurs in the age of 30-35. These women are mostly just enrolled in school but not completely done with the primary level and found adaptive towards flood losses. But most of them have entered the school but left out in grade one, two or three.

Figure 5.1: Education record of farm and non-farm women entrepreneurs in %age



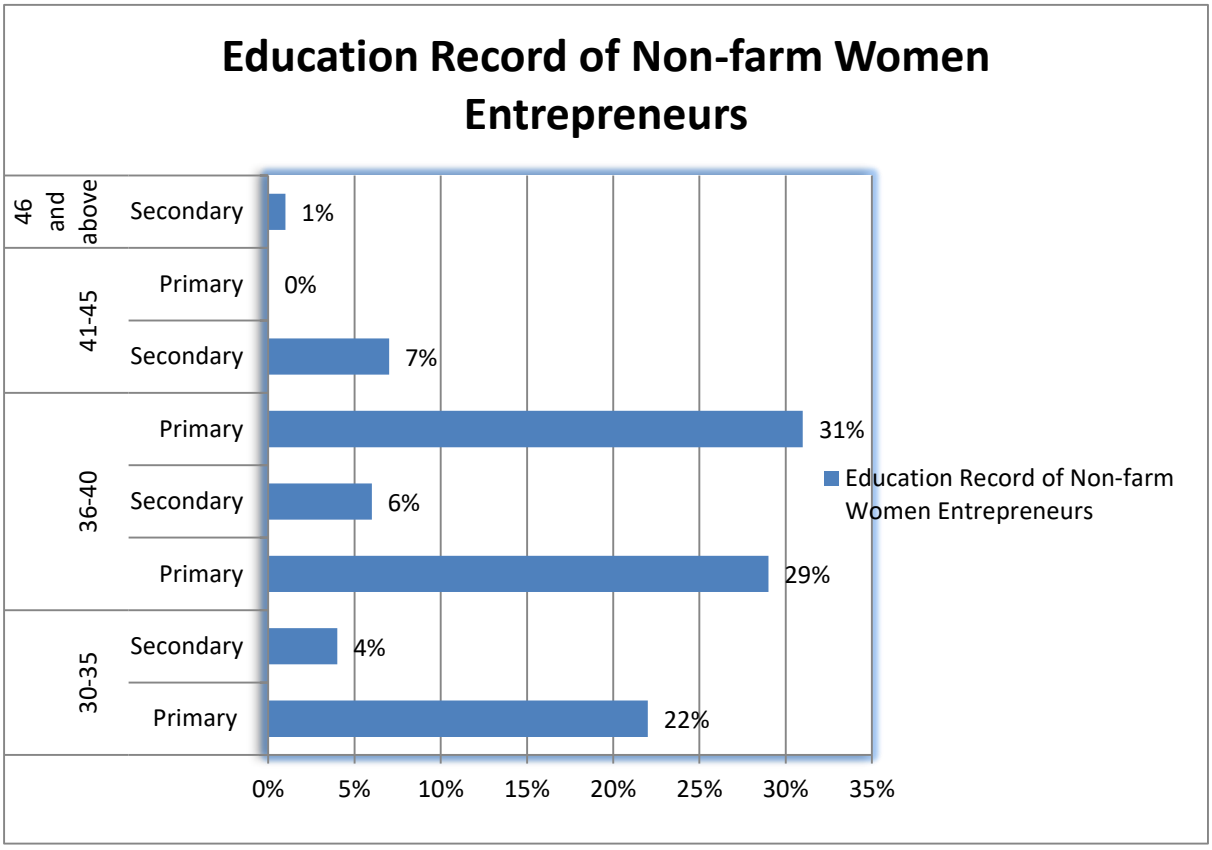
Source: Field Survey

[2] Primary education is referred to the basic level of education which is usually between the age 5 to 12 for cognitive, motor, emotional and psychomotor development. This education lies between grades 1 to grade 5. In the early ages in rural areas there was no Montessori level of education.

[3] Throughout Pakistan the educational system is divided into six levels, pre-school, primary, middle, and secondary which is leading to grade 9-10 from the age group of 10-18.

The same thing happened to the secondary level education but they were found better in floods losses. These 20% of the women just entered in secondary school but have not completed the secondary level entirely. The table shows that 36-46+ age of women have the least ratio of schooling. Farm women entrepreneurs have mainly not attended but just have properly done with primary schooling in this age group. This ratio has observed among women who have not attended the school or dropped out/ left out school in months or in couple of years.

Figure 5.2: Education Record of Non-Farm Women Entrepreneurs in %age



Source: Field Survey

At the other hand women from non-farm entrepreneurs have also an imbalanced ratio of either no schooling or attended the primary or secondary schooling. The figure shows that women have attended the school but not exactly completed the primary and secondary education due to the cultural and environmental issues in almost each age group.

The given table 5.1 shows the representation of non-farm women entrepreneurs' education that either they have attended the primary/secondary education or not. There was a large ratio of illiteracy found among farm and non-farm women. It has recorded that on average more than 80% women have no schooling or just have attended the school. And rest of 20% of them has just entered the secondary school nonetheless entirely completed.

Table 5.1(i): Educational Record of Farm and Non-Farm Women

	Ages			
	30-35		**36-40**	
Women Entrepreneurs	No schooling or attended Primary level	Secondary level	No schooling or attended Primary level	Secondary level
Farm Women Entrepreneurs	46%	20.00%	13%	4%
Non-farm Women Entrepreneurs	18%	4%	29%	6%

Source: Field Survey

Table 5.2(ii): Educational Record of Farm and Non-Farm Women

	Ages			
	41-45		**46 and above**	
Women Entrepreneurs	No schooling or attended Primary level	Secondary level	No schooling or attended Primary level	Secondary level
Farm Women Entrepreneurs	11%	3%	3%	0%
Non-farm Women Entrepreneurs	31%	7%	0%	1%

Source: Field Survey

The people of Basti Karak are less educated that is why they are involved in agricultural, non-agricultural and side by side other small income generating activities. Precisely, they are involved in cotton ginning and pressing, jute textile, petroleum products, poly propylene bags, power generation, stitched garments, sugarcane, textile composite, textile spinning, wheat, rice, maize, moong, bajra,

masoor, nuts, mustard, sunflower and jawar. In terms of fruits, the locale is very famous in its mangoes, dates, citrus and pomegranate. Other fruits are also ripening such as jaman, pears, phalsa and banana. Minor productions of turnips, potatoes, garlic, chilies and ladyfinger are also pinpointed among them by the researcher. Women are predominantly involved in farm activities as discussed above and shown in (Image-II). They were also seen in house repairing, renovating and reconditioning after flood jeopardize (Image-I).

The estimated population of Basti Karak was observed round about 28900. Nevertheless, the ratio of female is 49%. In addition to the average household HH size observed by the researcher is 7. The estimated annual growth rate is round about 3. There is a low participation of households and thus the household head has more pressure to earn money to overcome the dependency ratio in their large family systems.

Due to having less education among indigenous folks of the selected locale, these women have less involvement in national assembly, election, and political affairs. The most of the dwelling women are predominantly engaged in domestic activities especially women for small income generation. (Image-III)

5.1.2 Migration

The agricultural sector for income generating activity (IGA) was mainly obvious within women entrepreneurs. The census shows higher degree of male population in Muzaffargarh. However, the reality explicit that the most of the male population of income generating age group have travelled to other stations (i.e. countries/ cities). They have migrated to other territories for their better livelihood sources. Eighteen women respondents said that their sons and husbands are out for income generation at the other hand fifteen said that their sons are out for education.

Women entrepreneurs are getting aware of the worth of the education day by day. So they prefer to get higher education for their children. Most of the rural families send their male children for education in other cities. This is the main reason women of rural areas getting increase in number in involving in IGAs. Women from rural areas are having dominant figure in farming, harvesting, irrigating, threshing and cultivating but working at small scale as well as doing home chores and renovation of their kachay homes (Image IV, V, VIII and X). These rural non-farm women sell items in low prices

to shopkeepers and get very low amount out of it. This same case is running with the milk, milk products, brooms, mats and etc., done by rural non-farm women entrepreneurs.

Largely, the women inhabitants are engaged in agricultural IGAs due to having yearly flooding in Basti Karak. The locale is having less development and the poverty is high among residents of rural population due to living in low line area and wetland. A study explains in its indirect consequences that women are more severely affected than men (Foster, S. 2000).

The poverty is much more chronic in some areas of Basti Karak due to its direct link to the river. Key informant has made the researcher to meet few of farm working women involved in vulnerable poverty. These women do not work independently but in family farms and daily wages. They had enough idea of farming and an immense desire to do independent farming/ sharecropping like Sindhi women have got the right for share cropping independently. They wanted the right to do agreement as well as landholding from landlords. They are searching for better livelihood with having a desire for their own land for farming. As the Malaysian women make their small farms and do small farming of fruits and vegetables and sell in their own small circle.

5.1.3 Seasonality and Seasonal Working

The location is having seasonal rainfall in monsoon that is why the people living there are well aware of flooding. The flood ratio is high in saturated areas nearby river. The flow in water sometimes gets higher unexpectedly and hit the residents poorly. They often involve in low IGA and faces vulnerable losses in terms of all aspects of life. The loss becomes higher for those people who have as sufficient as they can survive only. Every so often, in these losses they are not ready to bear and afford. The inhabitants are involved in seasonal working because of its seasonality and have not as much saving to survive for couple of months till the water does not get dried and moved from their small villages.

More than 90% of the people are doing seasonal farm and non-farm IGAs. The working patterns are mostly morning till evening from 5am to 6-7 pm. The percentage found in these respondents of morning-evening is 73%. However, at the other hand off and on working in an entire day is 27%. If we see on a smaller perspective these women are

mostly involved in brick-making, livestock, stitching, farming (dairy/ poultry), broom making and fuel making (Image XI).

Consequently, all these cannot be happen in the flooding season. They have to switch their belongings from one place to a safer place, where fewer chances of losses of their possessions. In this shifting they usually use some mode of transportation. Sometimes they use carts, pull-carts, trucks, cars, cycles, motor-cycles and wheelbarrows. They cost them from their save money.

Twenty-nine women respondents said that "they have to suffer these expenses yearly to shift their properties from one place to another. In this way they lose their earned savings by their small IGAs".

5.1.4 Vulnerability

As the Basti-Karak is not an economically well dwelling place. This is why the people living there, are economically poor or less cost-effective. The vulnerability is due to natural disaster and marginalization. The marginalization is due to non-availability of clean water, air, proper sewerage and drainage system. They are confronting economic losses in shape of human, capital, property, resources and environmental repeatedly in each year (Mbilinyi, 1997).

The vulnerability is higher in poor women because they have less interaction with male members of the society and no links and network to avail resources. They live a hand-to-mouth life and do work on a very small unit/ scale where they get a negligible profit. This profit usually gives them to afford their daily expenses. Moreover, some people have such business that has enhanced their living standard on an average acceleration like in stitching, farming, livestock and so on things are giving a significant profit in their business growth. In this research due to getting small number of women entrepreneurs so the employed women also being interviewed for taking the perception of their losses.

As the women ratio was found less than half of men. It is obvious that all these women cannot have independent work. So, few of them were found in their personal business while the rest of them were involved in daily wage employed or domestic IGAs. There were a large number of ratios who found in farming as with their family support.

Similarly they do not work individually; they are working with their large family support. If they are involved in one activity so they interchange their things and get their daily necessities. There was seen nuclear business in women but on a very so-called ratio i.e. 9:26.

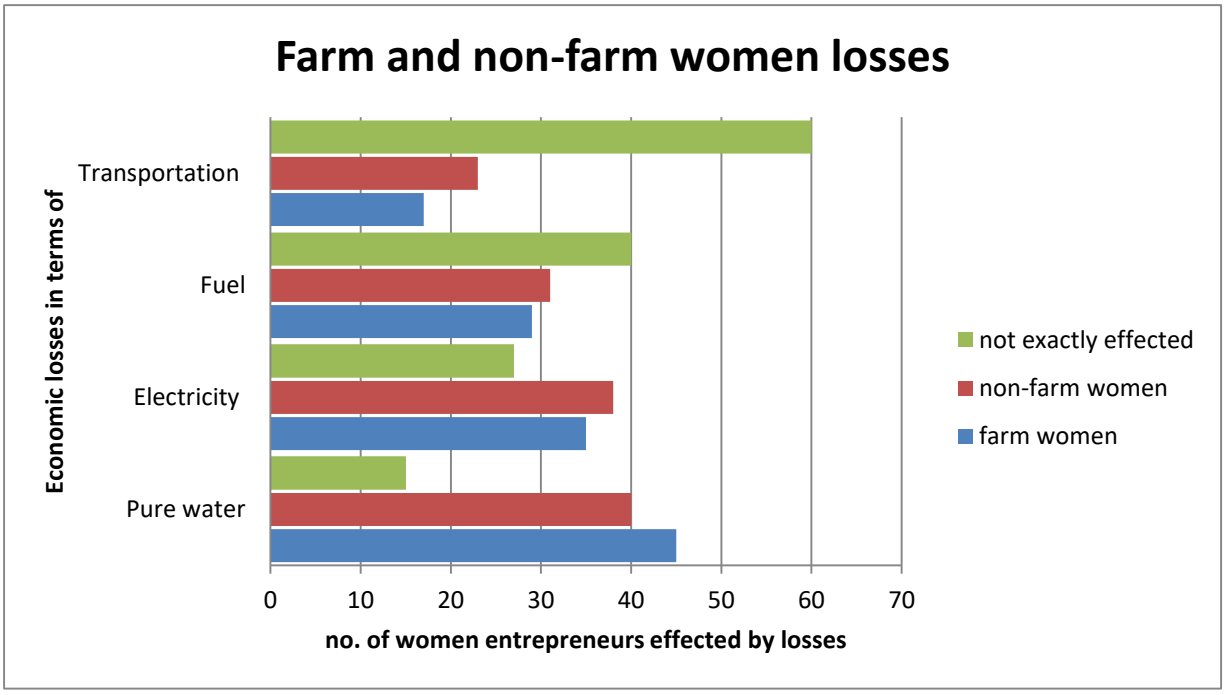
There are some general losses which have recorded in all of the respondents discussed under below:

5.1.5 General Economic Losses Due to Floods

The interviews suggest that flooding in river reduces in their production of growth each year. In this time the water, electricity, fuel, transportation and so on gets disrupted. This disturbance gets problematic in supplies of goods, the prices gets high of food and non-food items. The respondents have given a clear picture of their basic losses under below.

The figure 5.3 shows the greatest loss in water due to flood. The figure highlights that 84 percent respondents faced loss of pure water, whereas the electricity gets disturbed in floods, the electric systems and wiring of electric supply disconnected in their area as well as their housing electricity lines get detached or broken. So, this costs them heavily. The transportation becomes an issue in flood. The roads get blocked by the government due to alarming people living there about the flood. The figure shows more than 70 percent respondents faced electricity loss, around 50 percent respondents faced fuel loss and more than 40 percent faced transportation and phone loss.

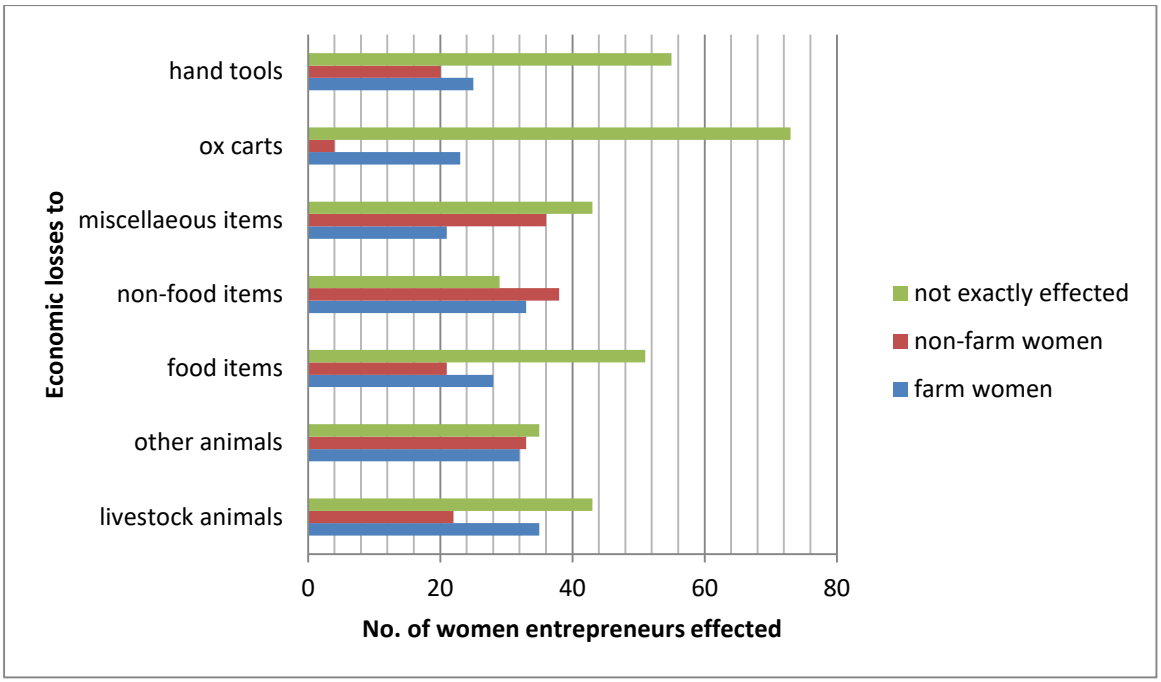
Figure 5.3: Economic Losses to Basic Amenities of Surveyed HH



5.1.6 Losses to Livestock Materials and Items

In flood situation, food prices gets high, supply of food gets more risky and impossible. In this period they face great inflation. The last flood in 2015 have hit around 200 viliges in particular D.I. Khan, Muzaffargarh, D.G. Khan, Layyah, Jhang, Chitral and so on in south Punjab. They have lost their many of the productions in cotton, maize, sugarcane, khareef crop and rice and other miscellaneous. The livestock which is considered second large IGA after agriculture got a huge loss in floods. The losses have recorded as below

Figure 5.4: Economic Losses to Livestock Materials and Items of Surveyed HH

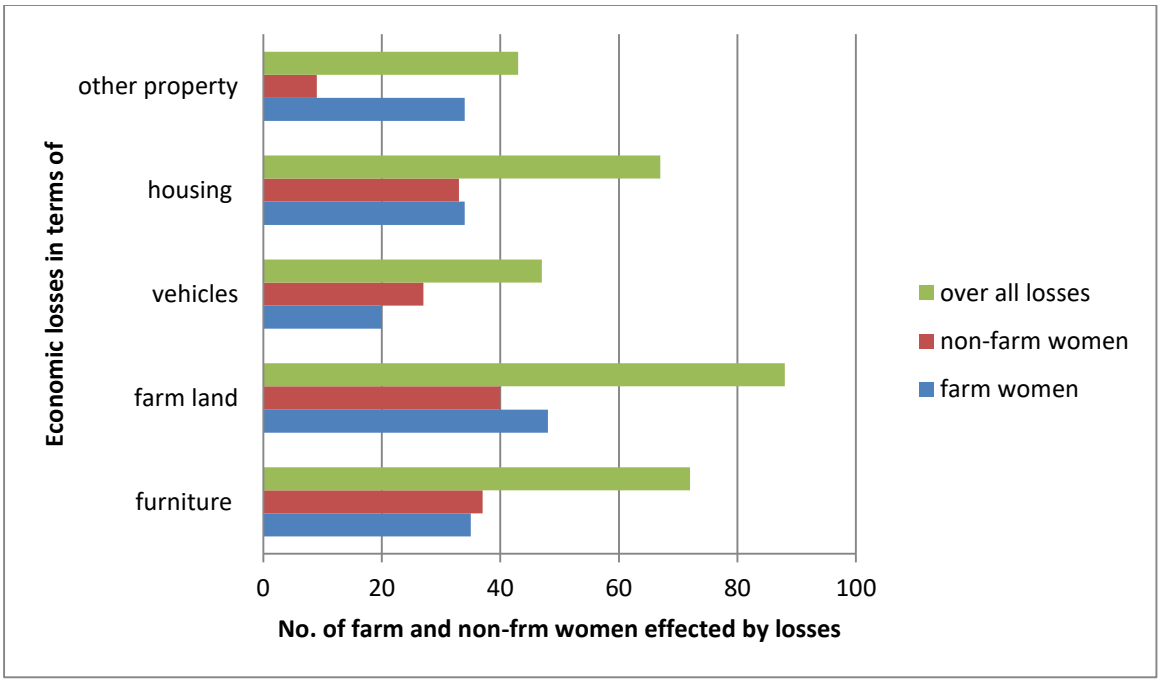


The figure shows more than 55% respondents faced loss in livestock, more than 75 respondents faced loss in other animals. Their animals died more than 75 respondents in catastrophic damages. Around 35 respondents have faced loss in food items, around 60 of the respondents faced loss in non-food items, more than 55 respondents faced miscellaneous item's loss and more than 30 have bear ox cart's loss.

5.1.7 Losses to equipment and property

The respondents have had some losses in equipment and property such as furniture, farm land, vehicles, houses and other property. They have mentioned that due to flooding more than seventy respondents had loss in terms of furniture, approximately 80 respondents had loss in terms of farm land, around 20 respondents loss in vehicles, whereas more than 60 respondents faced loss of homes and 43 faced other losses as explained in figure 5.5.

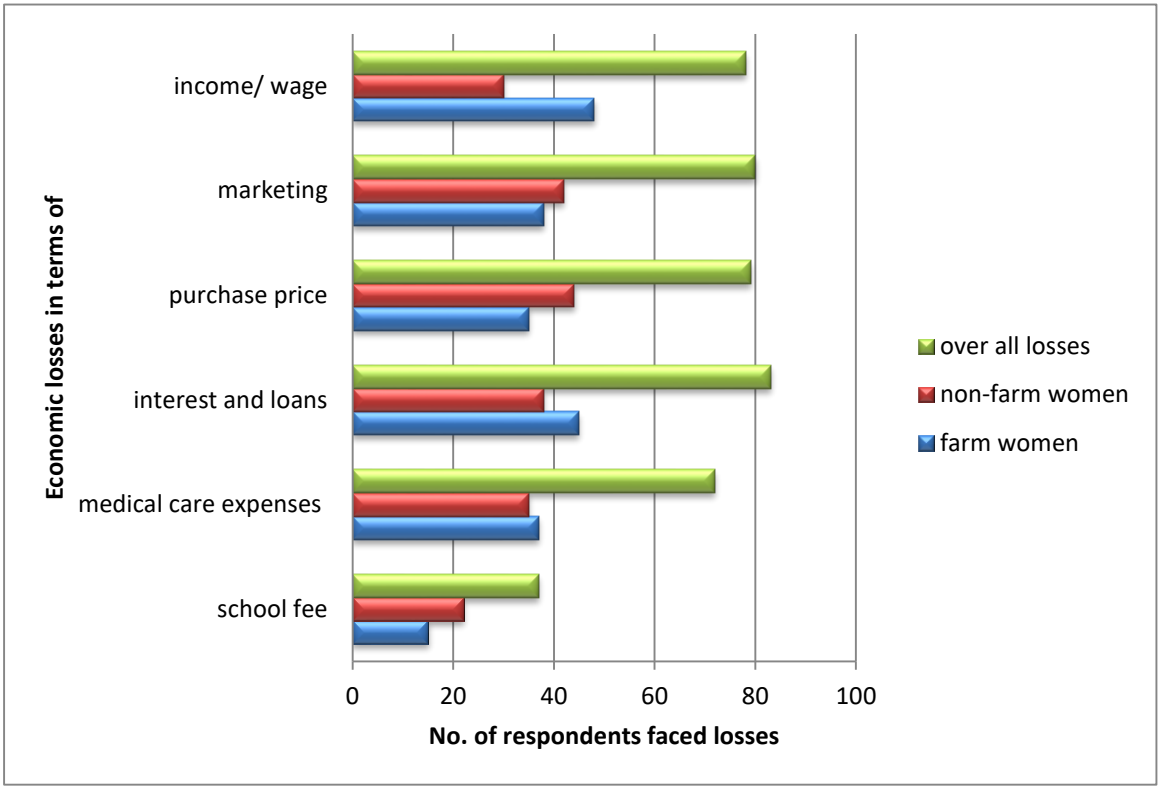
Figure 5.5: Economic Losses to Equipment and Property to Surveyed HH



In terms of indirect losses, 15 farm women and 22 non-farm women respondents said that they had to face loss in paying their children school fee. There were 37 farm women and 35 non-farm women respondents said they had economic loss in medical care expenses. There were 45 farm women and 38 non-farm women respondents explained about their economic losses in interests and loans.

There were 35 farm women and 44 non-farm women respondents said that they had face losses in the shape purchase price. Thirty-eight farm women and forty-two non-farm women respondents said that they had losses in selling their products in market as in low prices due to flood threats. Forty-eight farm women and thirty non-farm women respondents said that they had faced losses in their HH income.

Figure 5.6: Other Economic Losses of Farm and Non-Farm Women Entrepreneurs of surveyed HH



5.1.8 Poor Nutrition

Women involved in different IGAs were found so much determined and enthusiastic about their work for better livelihood for their children and family. They feel so into their work. They feel free in working their business for financial support. Women go to work and have different feelings. One widow women age of 47 stated that

> *"you don't know me, you don't know I was in so much pain and nearly died due to the chronic illness while pregnancy. And then I had to give up on my roles. You don't know how much pain and fatigue I had to go through while looking after my rest of babies and my own self. I don't get financial support, and work for what is less physically demanding job in such condition to support and pay for my children's study and health. In this age and situation the immune systems gets low, I get sick most of the time. At this point of time hardly my family supports me because they are too busy."*

It was seen that women's poor nutrition as well as mental and physical health have adverse impact on their implications on productivity and enforces a large social and economic costs for society. Women have high mortality rate cause of unavailability of female service providers, higher degree of incidence of disease, low health and nutrition in them, lack of competent doctors and nurses, unsatisfactory supervision and monitoring, illegal and unsafe abortions are common in them in such flood situation.

5.1.9 Other Vulnerabilities

Customarily, broom making is repeatedly done in each 4-5 months among non-farm as well as few of farm women entrepreneurs. First they cultivate these then they give time to let it be dry. Later the process of picking, cleaning, separating, and binding is commonly being practiced among them. They spend 2-4 hours in fields for cutting and then pick up TEELA from this raw form in 3 hours in a same day. Some of them are doing it as self-employed but most of them are doing as employed. In this task the family works altogether. Mostly work is done by women after cultivation of this. They live in extreme poverty so this is why they prefer to complete the task by taking help from their own children. They don't want to divide the income getting from this. This is the chief reason they take help from their daughters and sons. It is seen that the lower the price of the product is directly linked to lower the income of product maker. A broom maker woman stated as below

> *"It is really hard for women to set up their business and prove their kids that they can drive through everything to accomplish their goals when there are so many resistances from other people."*

An another woman explained;

> *"In such working situation, I do not have time to go for women's talk, lunch and dinner and family outings. Every week is a challenge for me at a different level." For women being home or working outside is same tough job. I go to bed always tired, stuffed and always need time for relaxing my own mind. I work for my babies to give them comfort and they need.so, they can have a good life."*

These statements shows their hard work at homes as well as the work they do outside for generating small income. They are involved in these small IGAs not because of their own wish. These all small activities are due to their needs and desires to be fulfilled. These women stated that we are more vulnerable to the water effects because we are directly and indirectly linked with this wetland for survival. Women working in rural areas are less accommodated because of having low social and economic interactions, lack of information, frequent pregnancies, overburdened cause of triple roles, illiteracy, no wage incentives in their work, limited areas to work, limited access to discuss their issues and problems and restrictions over women's mobility. Having these structural issues in their society they get more vulnerable in flood situation.

5.1.10 Feudal System

Feudal system exists in this particular area. There are families in all over the Pakistan who possesses large scale of land ownership and have direct or indirect contribution to agricultural sector. The work on land is usually done by the sharecroppers, peasants and tenants. These landowners have immense power over the agriculture and the people living there. This system remains there generation to generation. They usually have control over water, credit, fertilizers, land, judicial, police of the local administration and government. They provide money on their need so they get bound to work with them, and unable to leave the job.

Five of the female respondents remarked that they are working under them because they are under their debt. They have taken loans from them in their ups and downs. Now they cannot leave without paying them back. They work with them in crises and ask for money whenever they need it even after floods. The landowners get their land back without any long lasting procedures and troubles even after floods.

5.1.11 No land Ownership

No land ownership exists in most of farm and non-farm women entrepreneurs. Five women respondents in farming explained that they have less access to land ownership that is main reason for their substance level farming. They stated that rural women work in her own family farms. These women are poor in terms of income. At the other hand few women have access to land which considers as their property but have

very low income from these. They also fall in secondary poverty. There is a case study which explains this reality as given below:

Case study # 1

A widow woman has six family members. She works in livestock; her life is depending upon animals and milk products. She sells milk, butter, cheese, desi ghee to city people by some family relatives and other reference. She cleans the animals, fodder area, animal area, fields, and fetch water. She is self-employed women with her three daughters. It's her family business and collects fodder from farms.

They take the land on small contract and they produce fodder. They give a part of that fodder to the owner of the land. She sells animal breed. And sometimes when the animal starts giving milk she sells the animal for making profit once or twice a year. But in flood time she has no such capacity and large scale livestock business so she has to sell them or shift these animals carefully. She has home in low line area where the river water hit them with full of pressure. She said that in 2010 her Kacha house was damaged by heavy flooding. She faced hard time after flood in winter. The roof got damaged and then they lived in cold weather without roof in all over the winter along with their animals.

In floods the animals gets harder to move. The flood water kept a number of diseases which kept not only to the people but also the animals and damages the other biodiversity. In this response she has not enough to look into their disease as well as her own crises.

5.1.12 Business Loss

All of the respondents highlighted the severe losses among them during flood. Ninety percent of the respondents had worst experiences due to flash flooding. They responded as "*yes badly effect and work gets stopped due to heavy rains"*, "yes, badly effects. In livestock the Bara gets free and animals get weak, meager and fever. Sometimes, they lose their farm animals. They lose few animals in migration and in transportation from one place to another. Before monsoon the weather of south Asian

side is usually extremely hot, sun rays are more shaper, the humidity and dreary weather causes dehydration in human as well as in animals".

In tailoring they themselves avoid taking orders in this season. In this gap woman entrepreneurs bear tough livelihood. They loss their most of customers and sometimes, a big slump have seen in their business growth because of delaying in delivering order or other's belongings. In floods their all team gets spread and unable to combine again till the flood water does not removed from there. Generally, they have to pay to her trained girls so that is why they have fewer saving to recover the loss after floods. This loss sometimes led them downward and sometimes no such effect on their business. But the usually lose their links. The main losses are hard boards, scissors, threads, tables, place, electricity, and machine oil n tools.

The age is another factor that resists the women in looking after family and themselves. The women are involved in small business but due to getting older they face more troubles in floods. They feel meagre to combat with these losses every year. It has become a dramatic situation which taught them resilience and to fight against this each year. But the age has made them fad up of this terrifying situation. This is acceptable situation neither for normal citizen nor even for old age people. A case study explains this reality more clearly as given below;

Case Study # 2

Farhat is a married woman of 38 years. She did intermediate level study. She has three children including two sons and one daughter. Her daughter is mentally ill. She does not perform properly. Her husband has his own shop. His sons are studying in high school. She is a master trainer for stitching and embroidery on clothes.

She gives training at home for stitching and embroidery. She has eight girls as her students. The money she gets from them is very low. Only two of them are a bit trained for stitching. She gives them some tasks to be done in her own work. She sometimes gets small contracts from uniform sellers to stitch uniform and other stuff for them.

She and her two competent students work on these small contracts and earn money from outside too. The stitching rates are so low among these women. These women get small orders because they are famous in low rates.

Few dwelling women also give them clothes for stitching. The lady is famous due to her quality work and has links in one another village. This is the reason she get small projects for stitching i.e. wedding dresses like BARRI DRESSES, DOWERY DRESSES, and other dresses of family.

This is how she has expanded her quality work. As she has worked so hard throughout her life now she has tired of doing this. Now she wants someone who handles her business further on.

They re-plan their routine after floods. They restart with the postponed orders. In this processing the order also gets late due to designing issues, new trends and fashions and sewing patterns.

Nonetheless, the situation is still very critical and the women entrepreneurs living there are helpless in flooding situation. Few of residents have shifted from such prone areas through truck, tractor, bikes, carts and rickshaws. Southern Punjab has taken into account in terms of policy issues as well as empirical inquiry. Three women entrepreneurs involved in livestock explained their crises as

> *"When there is no rain the fodder gets dry and animal eat dry charra. This is way their milk products and others products get changed from its uniform production and sale. when there is no rain the charra becomes reduced in its amount as in normal, tube well give limited water supply, no as such charra growth and consequently the selling rate gets to either cheap or gets high in prices in rainfall season."*

5.1.13 Transportation

Twenty three respondents explained that

> "*Whenever the disaster occurs it spoils the whole field. Thus, water logging starts and we feel resistance in going anywhere especially no field left intact."*

This sort of chronic poverty had a large number of crises in floods. They cannot move from the way in between their houses because it gets so wet and slimy to walk. In humidity and hot weather the ratio of mosquitos gets higher over there. The water logging around their houses get not removed even after they get back to their homes. These mosquitos, bees, flies, beetles and so on make the environment unhealthy and unhygienic. Thus these unhygienic atmosphere remains them in number of diseases i.e. malaria, dengue, hepatitis, diarrhea, cholera, typhoid, dysentery, guinea worm disease.

Seventeen respondents highlighted that in monsoon season the rate of taking order for clothes gets low. They usually have few of belongings of others. This is chief reason they don't lose anyone's things. Other stuff related to machines they keep them safe or shift them from one place to another. This transfer of things sometime cost them costly and sometimes their relative or other help them in shifting.

5.1.14 Loss of Stock

Twenty one respondents explained that their stock becomes an issue to be saved in some harmless place. In this condition women usually have less information and market knowledge about the products' market value. Accordingly, they sell these items to other market people who have better exposure. In Bhatti area the stock is saved by the Bhatti owner then shifted to those areas in either full price or low price before monsoon rain get start. In this quicker process they face a large amount of loss. In monsoon rains the construction of homes also gets reduced so the Bhatti women workers normally get off from that place. The earning process and cycle get a break. In such conditions they suffer many nutritional, food and health crises.

Fourteen respondents explained that they need to save these milk products in freezer and refrigerators. As these women are low rank livestock producers so they sell their products to those people those have large scale of business. They buy from them in low rates and sell in their own profit rates. This non-availability compels these small business women to get a small amount of money instead of wasting it.

In broom makers the same thing highlighted that they make brooms and sell them after every two days. That money only supports them in buying day to day grocery and other daily functioning items. They often exchange their broom in exchange of their daily use items. In flood their business gets totally stopped.

5.1.15 Heavy Loss of Health

Flood period not only is responsible of poor livelihood but also increases the mortality, water borne diseases (WBD) and vector borne diseases (VBD). The water borne diseases are common in them especially in the time of flooding. Normally, It is spreading by ground water which sometimes contaminated with fecal pathogenic with latrines. World Health Organization explained it as a Daly global burden which causes 1.5 million human deaths annually. Waterborne disease is a disease and financial burden and cost a person persistently.

These financial losses are mostly due to medicine, medical treatment, transport cost, cost of special food and the time taken by in recovery by the person as well as the caretaker person. In rural areas the respondent reported that many families have sold their lands to pay the bills of the treatment just for the sake of infected person.

There were twenty one respondents who explained the disease factor predominantly. In flooding right after flooding their sewerage systems gets totally lost. And thus, the biggest issue of clean water rises. In this way the bacteria get entered through different water sources into the drinking water. These bacterial infections results in dry mouth, difficult swallowing, muscle weakness, weaken gums, bleeding from nose, blurred and double vision, vomiting, breathing difficulty and diarrhea. In this situation they felt high fever, illness, nausea, cramps, noes bleeding, gum bleeding, rapid pulse and stays for long time. This has also resulted in deaths in their own relatives.

5.1.16 Low-Line Areas

Typically, the broom makers live in low line area where the flow of the flood directly hit them. Due to living in such a prone area they are considerably largest victim of monsoon rains and heavy floods. They live in so muddy and slime area and this becomes more slime in times of flood. Thus they get bound and limited. They avoid going outside in this situation of prone areas. They are more victim of water borne diseases such as malaria, dengue, scabies and other viral infections. The small area between their houses is muddy thus they get injured and slip into it. Consequently, this makes them more vulnerable to the flood crises.

5.1.17 Losses to Women Sharecropper/ Tenants and Farm Entrepreneurs

Few of the women respondents from Basti Karak were involved in sharecropping. The written and the verbal agreements are done among male part of their families and they are working there along with their other family members to complete the cultivation and production process to get their share. It was observed that the main dealings were made between their males, like bringing contracts regarding landholding and sharecropping for income generating activity (IGA). The main reason behind this phenomenon is that the male have more interaction, social network, social gatherings, cultural and social cohesions in each area. They communicate with one another and have gossips on diverse issues and topics. At the other side of the picture, it is understood that females works where they are allowed to work. They cannot move freely without having proper consent from the dominant part and the head of the family. This is the main reason the dealings of give and take are under their domain. And the work within the field is ultimately done by most of their own family members. This is in particular called the male subordinating element which lies between each rural areas but the work has made equally by them within the acres. This was much more found in most of the family members of the locality.

In this research the researcher has found 13 farm women entrepreneur respondents and had versatility in their feedbacks in terms of their economic losses. In the long history sharecropping is the popular term in which the landowner gives the land to the tenant to use the land for production. At the end of this they returns the share of these crops to them produced on the particular land. These agreements are

usually govern by the tradition or by the law. It was observed by the researcher that the dwelling women from Basti Karak have the same desire to fed, to cloth, to give better life opportunities for their children. Among these women the better life opportunities and accessibility matters.

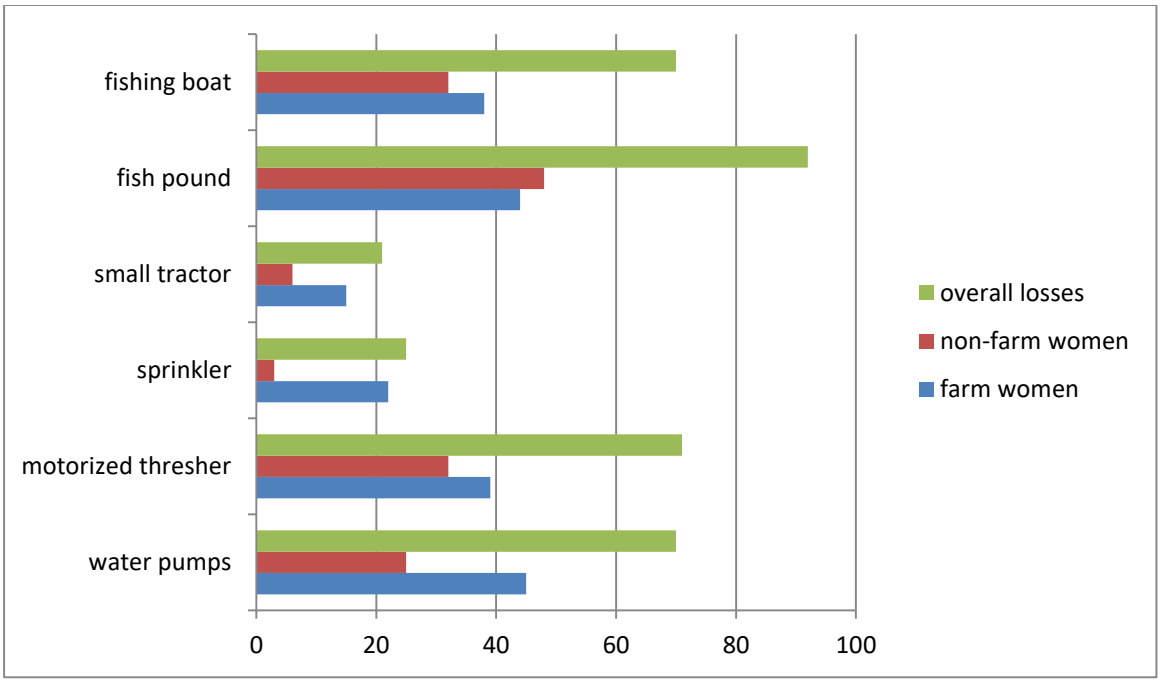
These farm rural women have been found very devoted and passionate towards their work in fields. Most of them are land less women and working in sharecropping. This is all not happening among women. They are having a group to accomplish the targeted IGA.

These women have much courage to perform these farm activities. In most of the interviews they are found either no education or less educated in fact they are below grade five. Nonetheless, they are having greater ideas about farming. It was observed just because of having the same family background and experience, they have strong links and deep knowledge about farming. The researcher has found farm women involved in farming that they even forget anything else except it. Few of the women entrepreneurs found window, single parent and having no male at home. In few of the cases the male members of mature and grown-up age group are mostly involved in getting education and migrated for higher education in different cities, as well as doing job out of their town on a very small wages to get experience. Most of their working age group sons are living in hostels in cities looking for job. This waiting period has made them more burdened to work harder for IG purpose.

The farming women have strong affiliation with their lands and they have no compromise on it. They do their farming tasks routine wise determinately. These women are basically landless and farming as tenants, sharecroppers, along with other male members of the family. These women have idea about some other women whoever does contractual sharecropping but most of them are working without such written contractual work among them. They work as in family contract and perform work till the completion of a crop project/ production.

In flood disaster the losses becomes a bigger trouble for them to recover. These women explained their losses recorded as

Figure 5.7: Farm Losses



Source: Filed Survey

They lost their tools for farming, water pumps, motorized thresher, sprinkler, small tractor, fish ponds and others in flood.

The area gets useless for 4-5 months just because of flood. It takes plenty of time to get back to its real situation. The fields and farms become unfertile, barren; carrying capacity gets to nil point. There it becomes droughts, slimes, water pollution, air pollution, unhygienic condition, water stains in their homes and other places. Food crises, water crises, water canal and sanitation system get worst. Toilets get to an end.

Their home stock their business related stock gets spoil in it. Their huts floats with the flow of heavy water shed. In these situation their wages and salaries and other source of income gets stopped because of everyone's crises. Their situation gets worse than poor. The weak bricks get dissolve in the water from even their work and of their homes.

They can't save money in such a pathetic condition. According to some small women farmers “whatever we save, we loss in flood. In this time we search something to start for making small income”.

In livestock, women entrepreneurs do safety precautions in housing, breeding, feeding, cleaning, and disease scrutiny for their animals. They apply mud lap all around the Barra, in rains there is usually no fieldwork seen. They save the fodder in advance and give that dry fodder to animals in such condition from their own small land farms. They sell milk and milk products to neighbors and market in minimum profit. They do mostly family labor in livestock and farming for their livestock. They only try to keep their animal safe from life threatening diseases and economic loss.

In livestock breeding period they produce babies, feed them. The rate of decline from its peak and persistency is due to peak milk yield, intake of nutrient, condition of body in calving, and other factors like disease status and stress of climate. They are low range livestock women farmers and have poor feeding management this becomes a problematic situation for them for milk yielding.

This period is depending between 7-8 months. A cow takes 11 months for delivering a calve. The animals eat few specific kinds of food i.e. CHOOER, KHAL, WANDA, BANOOLA, which gets dry and cost them in large amount.

They take safety precaution on a village level where they need to strengthen against disease surveillance and reporting system at tehsil and district level to monitor the disease. In livestock the most common problem seen after flood is how to crossbreed their animals. They need nutrients for animals so they need good quality of urea for good quality of fodder. In such flood conditions they sell their male animals for slaughter and rest of the animals they keep for breeding and milking purpose.

In summer the animals have more to intake water as compared to winter season. This becomes another issue for animals. They usually face shortage of feed in rainfall season. In this season women farmers have to plan for urea treatment and silage making for better nutrients. Due to the severity of weather they unable to give them a balanced diet. In this weather when the animals need more water intake they let their animals to sit in water for log time. They stated that in number of times the flash water of flood kept their animals in number of diseases. These diseases cost them again in heavy loss in face of vaccination and other remedial measures.

The broom maker women do know about the water pressure in the river, the rain pattern and its period. So, they start more working hours in a day and finish their as much work as they can before the rain comes. The broom maker women are also severely victim of monsoon rainfall season. They make 4-5 brooms in an average hour and daily earns 200 rupees. In this way the monthly warning gets to 6000 rupees. At the other side of this reality when the rainy season occurs they do not able to work as earlier. Their work is halted for 4-5 months until the flood water is drained fromtheir living area. These women seasonally earn money from this source of income later this period hey have to live either in hand to mouth condition or on their husband's earnings only. In this period their expanses doesn't fully feed them.

Twenty-two respondents stated that they have no such savings by these small businesses but they try to do a little bit saving for their non-working months i.e. in monsoon season. Women working in Bhatti area are unable to save their stock because it is an open area work where they place bricks. Once bricks get hard and dry in sun shine they give water to these. Off n on water is good for these bricks but heavy shed of water is dangerous for their production. Their Bhatti owners shift these bricks from their unsafe rural area to other places either in full prices or in low profit instead of bearing loss. They prefer their production as minimum in this month as they can. In such condition the female workers get unemployed. And face crises in all the rainfall months.

Few of the respondents like in tailoring, tailoring is a self-business that is why usually government provide no support and facilities to them. They get the earing only in those months in which they perform work. Not only in tailoring but also in all fields the work gets totally stopped. No work has done in this flood water.

5.1.18 Government Initiatives for Flood Victims

The flooding sometimes gets more powerful in its flow that makes the indigenous people in substantial danger and loss. In 2001, International fund for Agricultural Development IFAD has confirmed the vulnerable and severe conditions of southern Punjab due to floods. Many southern Punjab authorities have issued the red alert area for the acknowledgement of dwelling indigenous people to move from prone areas and to shift their livelihood from those places to safe habitation.

Consequently, they have shifted to some safer place in the time of flood. Once the water moves back they again settle, live, cultivate, and earn for livelihood and face the seasonal losses yearly. The flooding kept the rural indigenous people in a critical condition. In livestock, when a cow starts giving milk they sell them and produce more breed of its babies. So in this way they expand their business but on a very small scale.

Three brick maker women stated that they are stagnant on same position due to family loans. They live in a feudal system where they occasionally depend on loans for their happiness and sorrow events. Thus, they get bound to work with them. Even the broom maker women have very less or no chances of expansion in their business, they sell their brooms in low prices to shopkeepers, and get no as such profit that can enhance their business. They ask their family and friends to promote their items and sell to other links for expanding their business.

In tailoring, fuel making and shop keeping no such profit have seen to enhance the business especially for women. They are considered low wage or low profit makers. That is the reason their market value is lower than male. Although in livestock there is a very sufficient profit that can only afford their expanses. They have a stagnant business since so long. The government has so interaction with their personal business.

It was recorded through interviews that farm and non-farm women have very less chances of expansion of business. In most of the fields women does not take their business from one generation to generation. They usually get tired in some part of their life. Thus the business get stops or stagnant in its growth. The biggest reason behind this is their small scale business, no strong social circle and networking, low profit gain, no promotion, and less interaction to the people they work with and no governmental and nongovernmental association. Fifteen women stated that

> *"We get no help from governmental organizations. They are just media oriented people they just show in media but do not help them actually and honestly".*

And

"They just make temporary documentaries to show international donors that they have done their part. But in actual ground they are pretending only"

Thirteen respondents explained that

"In terms of livestock the government provides facilities i.e. doctors, vaccination, medical facilities, animal sprays, zoonotic spray for disease control."

"*Some NGOs also visit us and given financially support depending upon our losses"*

"Government and NGOs only provide very basic needs to them that they can survive only i.e wheat, sugar, oil, pulses, clothes, razaiyaan, talaiyan, and home tents, toilets are also made since last 5 years"

Eighteen respondents explained that

"*Medical tests are expansive and costly which is not supported by the government. They just give us basic medicines, which even sometimes have negative results. Cause these volunteers are not professionals"*

Eighteen respondents highlighted that there was a NGO who came to them and committed for financial and material facilities to be handed over to them but no such support has been given to them especially to women tailors. Fourteen of the respondents explained the basic amenities support has been given to them. Their business can only be enhanced and boost up by their own hard work and quality work once the flood water moved back.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

In the wake of findings, this chapter includes some recommendations, conclusion and roadmap for the future studies. Farm and nonfarm women entrepreneurs have observed in huge economic losses which has dire need of strict measures to spill off. Some important facts, figures and recommendations are presented below.

6.2 Socio-Economic Role of Farm and Nonfarm Women Entrepreneur

In accordance of discussed facts and figures it is observed that tehsil Muzaffargarh's village Karak farm and non-farm women entrepreneurs and other working women are more and less involved in small income generating activities. The reason behind this working condition is having an average family household size 7 and having less people in family who are working for earning source of income. The male members of the society were involved in fishing, shopkeeper, farmer, maisen, carpenter, electrician, teacher and some are migrated. At the other hand women are mostly involved in household activities as well as very few of them have access toward farm and non-farm working due to environmental and socio-economic barriers of the Basti Karak. These women and men have an obvious education gap such as 25 and 75 percent respectively. Women have very less access to education. This is the main reason among women to work in low-wage IGAs.

The locale is having no such health and medical facilities instead of two major hospitals in Muzaffargarh district. There are few medical clinics but have no proper medical services in terms of doctors and nurses. There was a great need of having dispensary in each village for proper medical care and checkups. Women are having less chances of mobility from one area to another that is why most of them are involved in family farming and livestock husbandry. However, agriculture is the main area of their income generation. Having less approach to health, education and mobility they face more troubles in mobilizing their small businesses.

Women are also involved in some other workload i.e. preparation of heavy agricultural work, repair work and cleaning and get some extra income in it, i.e. sowing of sugarcane, rice and others, harvest of barley, drying and husking of barley and other production usually women do at home. They do farming in day time and then spend time in caring of animals and other household chores. These small tasks do not always give them profit monthly as they work especially due to a high rate of losses in monsoon season.

Their work in usually considered as family work for family income. In the months of June and July these women are normally seen in sewing, preparing straw, making baskets, mats and other dowry goods of old cloths although in flood conditions from the donation they get from governmental and non-governmental organizations. This reality shows the critical situation of these flood effected women. In farming the wives of farm workers and casual women workers get money but at the other hand the wives of tenants are partly remain unpaid as family workers. There are women having desire for independent farming. The government should give them land for farming to improve their status after floods. As in Malaysia and Sindh women have small farms.

In flood situation they get free from all their sources of IGAs. They are misplaced, injured, faced deaths of their close ones, loss in their business and health, tools and equipment, and lost more than what they get from these curfews and camps. Women entrepreneurs living near the river bank usually lost their homes and property. These women are involved in low IGA. After floods they get worst of this condition. Government should enhance the standard of their living by providing them such facilities for better livelihood.

Thirty-one respondents said that they are having major expenses of food, clothing, health, education, transportation and the bills they pay for electricity and phone normally. At the time of flood they get off from their businesses and IGAs.

Twenty-one respondents said that the cost of health gets higher due to VBD, WBD and others especially in women and children. There is a great need to improve the medical system for these flood victim areas to have a better livelihood with a better health. Seven women during floods faced many maternity problems and

reported that the people come for donation was not fully acknowledged about the medication. Unfortunately, they sometimes made them into other disease by such remedies. They further reported that "there is need for proper medication system along with financial support to fulfill the losses we face".

Eleven respondents said that government gives them herds for livestock but not a proper medical check-up and treatment. This is how they sell these animals and lands and get the proper medication from expert hospitals. Ultimately, they get back to their same crises.

The central idea of this research paper is that women entrepreneurs have lost their belongings and get very inverse to their current position. Thus they need to rebuild their livelihood every year.

Government and other non-government institutions are providing basic facilities to these affected villages by floods in various districts of Southern Punjab i.e. Rajanpur, Layyah and Muzaffargarh. The people from affected village by water from Indus River were shifted from those areas to safe place by the government and other non-government institutions by alarming the red alert area. Hereafter, they were given very basic amenities by the government but the women entrepreneurs are not remained under consideration of government for regenerating their business. Government should also look into small scale women farmers to provide them land and livestock to reestablish their business.

6.3 Conclusion

It has observed that government has generally adapted few measures such as health, poverty, economic issues of dwelling people. Women have been imperceptible to most of the extent towards their business losses. Government has to look deep down to the women issues and encounter their needs and losses they face in monsoon to regenerate their small IGAs.

The study proves the heavy losses faced by women in rainfall and flood situation in rural areas. There is another fact that due to inappropriate role of government and non-government organizations and having less transparency these women have not received proper intension towards their problems. There is a dire

need for improving the fair facilitating faculty and staff, counter check team, transparency for fair distribution of donation and government initiatives either from local or international donors. There is a need to look into fake reporting of documentaries to international level as well as local level.

6.4 Limitations and Suggestions of the Study

1. Due to time constraints no more interviews have been take as discussed in sampling technique. Women having their small income generating activates were found so limited in the area as it was expected. The researcher has tried taking interviews at her maximum access to women entrepreneurs but not exactly done with entire sample as discussed in sample size due to having no access and fewer time for interviews.
2. Due to having less economic sources researcher has limited access to the interviewers.
3. Due to having less approach to women entrepreneurs the interviews have also being conducted from employed women.
4. This study has taken in a specific area which cannot be generalised on other areas.
5. This study is of a specific student that can also not be generalised for other researches.
6. This study has been conducted in one union council (Basti Karak) of tehsil Muzaffargarh of District Muzaffargarh for finding the economic losses of women entrepreneurs; researchers can do the comparative study between two union councils or more. Further researches can also carried out on comparative study between two tehsils for their researches for finding out economic losses of women entrepreneurs either for farm women or for non-farm women entrepreneurs

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ANNEX 1

RESEARCH QUESTION

What is the impact of flooding on economic losses of rural farm and non-farm women entrepreneurs?

Research objectives

iv. To examine the impact of flooding on economic losses of rural farm and non-farm women entrepreneurs

v. To evaluate the measures adopted by the rural farm and non-farm women entrepreneurs

vi. To evaluate the role of government and non-government organizations in flood effected area with special reference to rural farm and non-farm women entrepreneurs

List of economic losses of farm and non-farm women entrepreneurs

Name	Age
Marital status	Education
No. of family members	Household income

1. What is your income generating activity (IGA)?

   ……

   ……

   ……

2. How many months of a year you engaged in IGA?

   ……

   ……

   ……

3. What are your working hours in a day?

   ……

   ……

   ……

4. Are you self-employed or working as an employ?

……

……

……

5. How many employees are working with you?

……

……

……

6. How often you pay them?

……

……

……

7. How do you expand your business?

……

……

……

8. What are you lacking in your business growth?

……

……

……

9. How you work and where your stock is saved?

……

……

……

10. Does it effect by monsoon rains?

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……

……

11. How do you manage your business in monsoon season?

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……

……

12. Do you see any profit gap in this season?

……

……

……

13. What are the main losses in your business due to floods?

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……

……

14. How do you manage your losses?

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……

……

15. How do you manage your business crises?

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……

16. How the government institutes are providing resilience to you in your businesses?

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……

……

17. How the non-governmental institutions are facilitating you in reducing the losses?

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……

……

18. What are your major losses?

……

……

……

19. What are your minor losses?

……

……

……

LIST OF ECONOMIC LOSSES DUE TO FLOODS

(Coding and indexing)

List of economic losses due to floods	**Less than 25%**	**Less than 50%**	**Less than 75%**	**100% or less than 100%**
Materials and items				
Electricity				
Water				
Gas				
Fuel				
Any interest or loans				
Wages and salaries for employees				
Taxes				
Telephone				
Transportation				
Livestock (animals, poultry and herds)				
Other animals (cats, dogs, donkeys, mules and pigs)				
Food items				
Non-food items				
Medical care				
Purchase price				
Tele-communication				
Miscellaneous items (special occasions such				

as funeral rituals, weddings, parties, cash gifts, charity, etc.)				
School fee (school fees, textbooks, private tutoring charges, etc.)				
Land / building				
Equipment and machinery				
furniture				
Vehicles (cars, trucks, boats, bikes and etc.)				
Other property (gold, jewellery, cash value)				
Marketing				

Farm losses

Mechanical water pump			
Ox cart			
Mill			
Rice winnower			
Motorized thresher			
Sprinkler			
Animal pulled plow			
Small tractor			
Fish pond			
Fishing boat			
Machine to process livestock feed			
Hand tools(hoes, knives, axes, rakes, shovels, picks, sickles, reaping hooks, fishing nets)			
Others			

Appendix: II

RELATED IMAGES

IMAGE I: Small income generating women are also involved in house repairing, renovating and reconditioning after flood

IMAGE II: Family farming

IMAGE III: Livestock

IMAGE IV: Kachay Homes

IMAGE V: Kachy homes

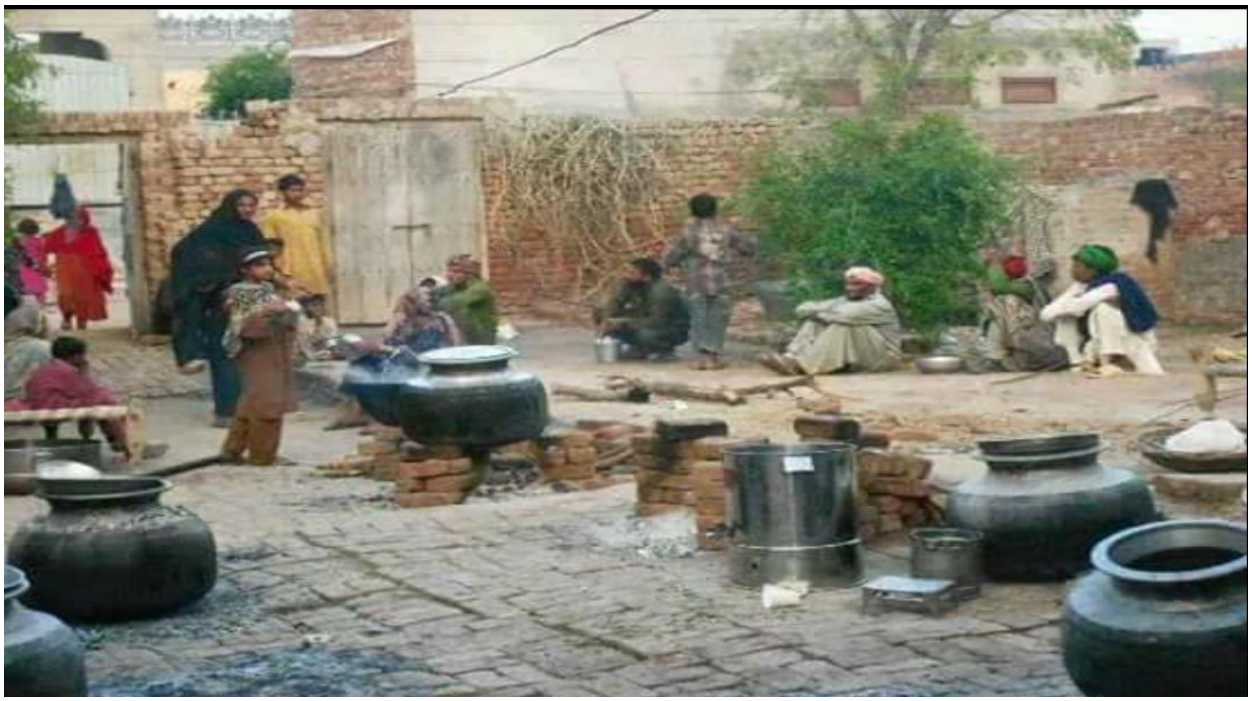

IMAGE VI: Livestock women cooking in open area kitchen

IMAGE VII: Open living system after floods' damage and heavy loss

IMAGE VIII: Rural woman renovating Kachay homes after flood damage

IMAGE IX: Women faming along with his brother in family farms

IMAGE X: Woman is also involved in domestic chores side by side doing farming in farms

IMAGE XI: livestock woman pulling calf from cow for milking purpose