

# **MECHANIZATION AND CHANGING ROLE OF WOMEN IN RURAL PAKISTAN**

A case study of Tapiali Village District Rawalpindi



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## ABSTRACT

Human culture is anthropologically understood to be a term which connotes special meaning. It is a set of adaptive mechanisms which people generally adopt to adjust themselves to the overall changes which take place in their changing environments. Hence culture is not something which is stagnant but itself experiences change over a period of time. The stimulus for change may come from within or may be introduced from outside the system. However, whereas the changes coming from within are often thought to be slow (as being restrained by social norms, traditions and ancestral legacies etc.), the invading thrust of these changes in a society often occurs with adoption of such tools and techniques which people tend to accept from outside in view of their own conveniences i.e. in terms of saving time and their energies for carrying out their day to day tasks. It is also true that external stimulus like mechanization at times may often be completely alien to the cultural context in which it may initially permeate and as such, for the time being, may seem to threaten some of the already established core values of a society. Initial reaction or the level of morale expected of the stimulus may not be witnessed until it takes its own time to prove its functional worth as against some of its culturally not-so-welcome outcomes. A simple example can be that of a mobile phone; whereas on the one hand it connected people living in far off and sometimes quite isolated rural communities to the outer world and the tyranny of distances was instantly overcome, on the other it seemed to threaten the long cherished family norm of a traditional religious society i.e. in relation to the expected role of women (particularly of young unmarried girls) not to be in communication or contact with males outside their families/households.

In the history of mankind, all the paradigm changes had been occurring due to the adoption of any such new tools (i.e. because of mechanization of some sort), ranging from the

invention of a wheel to that of digital technology of today, and its overall impact on the lives of the members of any society whereas need not be stressed, anthropologically speaking, these technological innovations seemed to have had entirely a varying effect on different segments of the same society e.g. the women *visa vise* its male members.

The study aimed to examine the impact of mechanization on the role of women in the rural areas of Pakistan. Recognition of this change was the goal of this study. For this purpose, Tapiali village was selected as a case study.

Although a detailed note on research methodology is given elsewhere in this research document, it would suffice here to say that to keep the high spirit of anthropological research, a proper attention was given to the selection of the research locale, participant observation supported by rapport building, key informant interviews, focus group discussions and the use of proper data eliciting tools etc.

The study offers a number of anthropologically related conclusions, a gist of which is presented as below:

Mechanization of agriculture has put women into new moulds and roles in village Tapiali and depending upon the amount of agricultural land a household owned, mechanization of their farms quite evidently modified their habits and living patterns. These new role adaptations were observed to be closely connected with institutionalized needs and ends-in-view which the farm mechanization seemed to serve. As the study examined women's role dependent as well as independent of other actors in that village set up, in totality with all the modified changes in their living patterns, these women still continued to be as an important integral part of the social system as before. However, contrary to some similar studies conducted elsewhere which focused on women's empowerment as a result of mechanization, in village Tapiali, the process seemed to

promote muscularity e.g. the machines used even in household chores needed males to carry out their repairs when were out of order. Similarly, in this sense where machines were perceived to be primarily a male domain, on the other hand their adoption was observed to fairly reinforce patriarchal relations i.e. increased control on the means of production by males gave birth to some new forms of women “subordination. Resultantly the females working on the farms were observed to be still using their own traditions tools (hoe, spade and sickle etc). Besides, as was noted, whereas prior to mechanization most of the village males had given a complete control of the use of their excess “farm produce” to their women and had retained to themselves the monetary proceeds of their crop-sales only, after mechanization the females seemed to have lost their control over the kind, if not the cash, to serve their immediate family needs. Previously males duly allocated this excess produce to their female partners while keeping in view the annual food needs of the family and the latter’s management skills. This obviously empowered their womenfolk besides granting them some access to the economic resources as well. It is also true that earlier much of the farm produce was partly stored in the household itself or in the fields adjacent to it and these women were to not only to look after its storage but also managed its delivery to others, but now with mechanization of their farm lands; the produce is straightaway transported from the farms to the market thereby eliminating any role which these women could otherwise perform. Women were reported to be deprived of their power at community level also. It was despite the fact that this power was accrued to many such women because of the ownership of the land being in their name as well. On the other hand, it was found that the retention of control of production and of distribution of what was produced allowed men to be more dominant in the family and in the wider community as they gained prestige from these acts. Similarly with regard to various food products that were previously prepared at home and the

livestock which was the main source of family's food needs was also no more in her control as before i.e. previously food items like desi ghee, butter, milk and cheese etc. if she could sell in the market earned her some freedom in the use of that money. But now the men kept their livestock with the intension to sell the animals on Bari Eid etc. In this sense a woman's role in village was changed from a producer to a consumer of these sources only. Mechanized life in Tapiali has also introduced pressures to get many of the amenities perceived as modern. These include television, refrigerator, mobiles and blenders etc. Also observed was the fact that But with mechanization and its heavy inputs, males were leaving the farms and heavy economic inputs in mechanized agriculture had reduced the magnitude of cultivation (practiced by only 10 percent of the households). Many of the farm operations like grass cutting, grains storage (at home for family use) weeding etc. were entirely still female done operations. The study also revealed that with a change in her role as a manager and controller of household storage of farm products also triggered a change in her socialization role. Earlier, she used to decide as to what was to be given to relatives and friends especially in kind by her. This added kind was also considered as symbol of prestige for the family sending the gift and also for the families receiving it (mostly for example in case of their daughters' in-laws). Now she had to depend on males for such important matters concerning this nature of family building relationships. Mechanization also seemed to restrict female mobility from farm to house and vice versa thereby excluding women from the outside environment and confining her to micro level household activities only. Even due to mechanization she didn't need to go out to fetch water as a tube well had been now installed in some of these houses. Briefly, we can say that in Tapiali village, mechanization has benefited women in general by raising their standard of living and by

providing them some household comforts but on the hand it has deprived them of their earlier freedom and decision making with a change in their traditional roles and life style patterns.



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# Chapter 1

## Introduction

### 1.1 Background

In this research study, women's changing role in village Tapiali has been studied with regard to the mechanization that has taken place in that village. Technology being the most dominant independent variable to effect the lives of members of any society, obviously brings about a change in their existing patterns of behavior, creates new roles for them and provides them an additional changed 'space' to act and survive. This concept of a 'changed space' is particularly important in the context of the most deprived segments of a society for example the poor and the most vulnerable including the women in Pakistan and is perhaps best understood in words of Professor Younis of Bangladesh when he said that the poor including the women are like a bonsai (a miniature of a Japanese tree that is made to grow in a common household flower pot); there is nothing wrong with the seed but a limited space has been provided for the tree to grow that made it smaller in size.

Mechanization is considered as an essential process for increase in production of goods and services to support the increasing size of populations. When we use a machine, it takes the shape of technology. Any machine for example a kitchen gadget like a stick blender, or a sewing machine, or any farm machine like a tractor, are just machines when not in use, but when in functional form while generating output, these machines get themselves transformed into a technology and this whole process from non-functional to functional form is known as mechanization.

The mechanization in a village may take place as a result of government policies or at individual level. At policy level for example the government may provide loans to the farmers to buy tractors. At individual level one may purchase house hold items like a sewing machine or any other electronic gadget (of course subject to the availability of electricity in the village). Some of these sewing machines for example were given to the women by a social welfare agency or in another case these women had received it as a part of their dowry.

New changed space (role) for women may therefore be created a result of the convergence between the macro and micro level changes in village Tapiali i.e. at village or at individual level both. The new roles which are generated due to the introduction of mechanization attempt to influence the already assigned existing roles, including the ones which were conventionally established, within the social as well as the economic spheres of village life. The mechanization in village Tapiali has therefore created a new space not only for those who happened to be the catalysts for bringing about a change but also influenced the other integral part of the village population which were the females.

Man is said to be not only a creation of God but also the creator of his own environment. Therefore the social, economic and political structures of society undergo voluntary and non-voluntary changes and as such the nature and man both act as agents of change in the components of their cultures. In the process, individual and culture change in response to each other. Quick adoption of or adaptation to change by communities, especially in case of mechanization, is indicative, of a culture's flexibility and its maturity that makes it sustainable. Mechanization and resulting change/s are often just opposed to traditions particularly those which lay within a system, those which seem static, conservative and somehow are perceived as vital to the proper functioning of the existing social and economic sphere of a given culture.

## 1.2 The Issues

As the land and cultural traditions remained pivotal to Tapiali Village identity, an important departure occurred with introduction of mechanization, the primary source of which was located not from within the village but from outside. The mechanization was first introduced at farm level with arrival of tractors and other farming tools and later when the village was electrified. Household use of machines changed the economic and development venues for villagers: hence a new space at socio-economic sphere had been created through contact with non-Tapiali knowledge base. The continuous evolution of economic activity, further led to the generation of new socio-economic space and activity. However, a disproportionate number of machine options both at farm and at household level, as being used by the male and the female members of the village seemed to have created a disparity of their use among them. The core issue of research was thus to deal with the question that to what extent the females as a group were affected by the process of mechanization, particularly when its large scale introduction had initially been in the area of land farming which was especially a male's domain? Or in other words, to what extent the farm mechanization has changed women role and has thus created a new space for them in the village<sup>1</sup>. While discussing the matter with the members of the village community it was generally viewed that as the economy and social structures of the village rest on agro-system, females did actively participate in farm related jobs but they were not traditionally paid for. In the village, farm operations like ploughing and separating grains from husk (threshing) were mechanized and both of these were male performed jobs. Daily nurturance was a female specific activity and except harvesting was shared by both but was left un-mechanized.

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<sup>1</sup> It has been discussed in detail, in chapter No 5 in the same study.

The use and control of “imported knowledge” in form of mechanization (their use of technology) and “artifacts” in form of machines in the village, whereas hypothetically seemed to have imparted several new skills; like the information seeking skills, information utilization skills and information dissemination skills to the villagers, it also provided them a wider interactive space to come in contact with people of other than their own community/village. It empowered them to reallocate their resources by saving their time and energies thereby creating a new village environment both at physical and non-physical level.

Nonetheless as goes the topic of this research it is focused more on actual and the possible changes which have taken place with regard to the role of females in Tapiali Village. The study aims to examine the impact of mechanization on the role of women in the rural areas of Pakistan. It is presumed that the rural areas of Pakistan have not remained unaffected by modernity. Mechanization on farm and modern gadgets such as TV, refrigerator, water pumps etc. at household level, has found their way in the rural areas. However, their effect on the economic lives of women and subsequently on their social behavior is not that pronounced. Mechanization of agriculture is something that affects their economic lives directly and in turn modifies their habits and living patterns. In other words, mechanization has put women into new moulds and roles in the rural society. This is despite that mechanization in village was not consciously planned while keeping the women in view though many of them were helping their families on family farms and were actively engaged in agriculture related activities like weeding, storing grains for food and maintain seed bank for family farm, animal husbandry and kitchen gardening etc.

Assessing the impact of mechanization on the changing role of women in the rural society of Pakistan is a unique study in the context of this country. Some studies though were



carried out in the area none of them seemed to have touched this issue from an anthropological perspective. The study is based on the assumption that the way people earn their livelihood introduces a basic change in the way they lead their lives. Mechanization of agriculture is a catalyst in this case that facilitates this change.

### **1.3 Research Problem**

Despite there being several theories of social or economic development available, no two human societies can ever be considered as going through a similar or identical process of change; variations occur the way two human beings, even if they are born twins, may still differ to each other. Perhaps the biggest challenge faced by social science researchers happens to be their inability to generalize the findings of a number of already conducted research studies to their own selected locale or a community of people. What may make a social or an anthropological setting unique of its own kind are the factors like the overall broader macro level socio-cultural or economic context in which that particular society or community of people may historically exist, its own peculiar situational background, the very stage of its development and above all the nature of its resource base; physical as well as cultural.

Secondly, for purposes of social or anthropological analyses, what may appear at its face value may not always be true. Decoding social data often leads to inferences which may be totally misconceived. For example, technology of any kind being a neutral component of a social living may be regarded as a source of empowerment for all irrespective of their belonging to any cast, creed or gender and hence one may easily presume that since mechanization of agriculture in village Tapiali did improve the economic status of a village household in general, it must have equally empowered their women with respect to their control over household matters. But to find out if was really true, a deeper analysis of village situation in terms of an especially designed

hybrid theoretical framework perhaps needed to be carried out because in reality the issue may turn out to be dual in nature, involving complexities of various sorts, wrapped in multifaceted inter and intra web of relationships developing and diminishing with the introduction of machines and their use in form of technology at village Tapiali.

It is with this point of view in mind that this research study in hand titled: Mechanization and Changing Role of Women in Rural Pakistan (A Case Study of Tapiali Village District Rawalpindi) was carried on. Therefore, as an initial step, heading-wise what follows in this as well as in some of the forthcoming chapters of this research study, are a detailed note on the situational background of village Tapiali (detailed information about the locale is given in chapter5), a broader view of the economic and gender disparity situation of the country, government initiated policies and actions taken so far to raise the status of women in Pakistan, as well as objectives, significance and methodology of this study, besides an extensive review of relevant literature to help scientifically analyses the information that was gathered by the researcher.

However it would be worthwhile to briefly state here that in Tapiali village, it was quite interesting to find out that the older people in one form or the other had showed their resilience in adopting machines with their own reasons (discussed in later chapters in detail) whereas the new generation had gladly welcomed it. Similarly as (Reider 2007) opined that best producing farms were mechanized having less human physical labor. In this case as was noted the mechanization was triggered but could not keep its pace because of reasons as mentioned in chapter 5,6,7,8 of this study.

In Tapiali village situation, machines were introduced for the well-being of social and economic sphere of the village life. The first well-defined use was of a tractor, introduced on

farm lands for purposes of ploughing whereas the threshers followed the tractors. At household level after electrification of village in 1989, refrigerators and televisions were also introduced. Earlier as was reported, there were only two houses in the village which had “acid battery” powered televisions though about ninety eight percent of the village houses had the radios. Therefore, as one can safely presume flow of any information to people in village Tapiali was either through radio or by visiting the nearby towns or city, as in those days most of their children went out of the village for seeking their middle and high school education. Many of these people were serving in Pakistan army even before the creation of Pakistan and as such were not only mobile enough to be in contact with the outer world but also quite conscious of the value of education for their children.

#### **1.4 Overall National Context**

In Pakistan, the women's access to property, education, employment etc. remains considerably lower compared to men. The social and cultural context of Pakistani society is predominantly patriarchal. Women have a low percentage of participation in society outside of the family.

##### **1.4.1 Status of Women in Pakistani Society**

Despite the improvement in Pakistan's literacy rate since its independence, the educational status of Pakistani women is among the lowest in the world. The literacy rate for urban women is more than five times the rate for rural women. The school drop-out rate among girls is very high (almost 50 percent), the educational achievements of female students are higher as compared with male students at different levels of education. This is the story of few years ago but now the Education in Pakistan for women is improving rapidly. In the city of Lahore

there are total 46 public colleges out of which 26 are female colleges and if we talk about the rest of 20 colleges some of them are offering co-education. Similarly the public universities of Pakistan have female enrolment more than boys.

Patterns of women's employment vary throughout the Muslim world: as of 2005, 16% of Pakistani women were "economically active" (either employed, or unemployed but available to furnish labor).

Around 90% of the Pakistani households are headed by men and most female-headed households belong to the poor strata of the society. Women lack ownership of productive resources. Despite women's legal rights to own and inherit property from their families, there are very few women who have access and control over these resources.

Women play important roles in agriculture and food security in rural areas. Any economic strategy for agriculture and rural employment linked to poverty alleviation and food security must, therefore, consider gender equity and women's contributions as central issues in productivity and access to resources. The urban informal sector is also dominated by women as food vendors and small commodity traders earning income for household food security. Moreover, women are the food buyers and those who create use value for food at household level. In all these roles women have a vested interest in the sustainability of ecological resources, the community resource base and local market systems.

The daily life of rural women in the region is characterized by the search for water, fuel and inputs for either agriculture or household production in their common pursuit of household livelihood security, including food security. In the region, women's roles and constraints in contributing to household food security must be viewed in the context of the ecological resource base, food trade, liberalization of trade and transformation to open market economies,

employment opportunities, access to technology and technical knowledge, and input supply. Within such a complex resource environment and amid the debate on food trade or food self-sufficiency for food security, the Asian regional scenario of gender equity is also characterized by diversity. It is a diversity marked by varied national priorities and levels of commitment to actions to achieve gender parity in development and by differences in urban and rural considerations and achievements in gender equity.

The social interplay of Pakistani society demands a thorough understanding of factors that connect the social ties among the members of the society. The male dominance, political uncertainty, social pressures and religion are few of the factors that jeopardize the growth and mobility of women in Pakistan.

#### **1.4.2 Use of Machines by Women in Pakistan**

Traditionally, a household woman in Pakistan, if at all, have had an access to the use of any machine, it happened to be a sewing machine which either she received as a part of her dowry or was given to her by a government or a private social welfare agency as a matter of social assistance. But now with availability of fairly affordable household use electronic gadgetry (specially designed and exported by countries like China, Japan and other South Asian countries) like TVs, microwaves, press irons, kitchen grinders of various sort etc has at least made most of the urban well to do women, use them in their homes. However the use of mobile phones because of its functional convenience to communicate with a person no matter how far she or he happens to be is reported to be getting equally popular among rural men, though its use by women is being culturally restrained by the former. Again these are the urban areas only where some women work as laborers in factories, in cities like Karachi, Faisalabad, Sialkot and others, do have an opportunity to lay their hands on some machines.

On the other hand some of government as well as non-governmental initiatives do continue to impart different kinds of technical skills to these women. These initiatives include various RSPs (Rural Support Programs) support packages, which depending upon geographic proximity; enable these women beneficiaries to organize themselves in a cooperative mode so that they can have an access to agricultural implements, farm machinery and micro credit on collective basis. The government provides support for at least a period of two years through an institutional support mechanism for enabling each household to move to a level where they are able to generate sustainable living.

Gender ratio in the country is primary indicator of gender disparity. The issue of gender disparity in its two facets is linked directly with the economic growth of the country:

- a. Female literacy.
- b. Female workforce participation.

In Pakistan, literacy rate is very low and underinvestment in education especially in girl's education in particular has been reported.

### **1.4.3 Development Planning and Women in Pakistan**

Development planning in Pakistan has generally remained hostage to the welfare approach which makes women the passive recipients of various programs as mentioned previously (Goheer 2003). In Pakistan's policymaking on women, problem identification is clear and strong but macro-level political pressures, limited resources and limited conceptual understandings, negatively influence policy formulation. Micro-level implementation and evaluation are extremely weak. Hence, the pattern of decision-making on women, which becomes identified as a policy when it unfolds, appears inconsistent.

Women's role in development has been neglected in Pakistan as the planner and policy makers have failed to recognize women as an essential ingredient of the development process. Women are considered as an integral part of the isolated sectors rather than as an integral part of the development process (Jehan 2000). The 1990s women-in-development underwent an evolution with an understanding that women should have access to resources and control over these resources. Because of promoting these concepts, gender sensitization and training started to gain momentum in Pakistan. Unfortunately, in Pakistan this gender is not proving productive because of ineffective government planning and lack of focus on women development for various reasons.

Despite different efforts and initiatives, the overall situation in Pakistan is not conducive for women to freely participate in the labor workforce or work as an entrepreneur in the market. The business and opportunity environment for women is relative conducive in the urban areas compared to the rural women. Socio-cultural and socio-economic impediments jeopardize the women mobility in the rural parts of the country. Added to that is ignorance on the part of policy makers to facilitate the creation of a favorable business environment for women to participate, sustain and survive.

### **1.5 Objectives of the Study**

Present research study has been carried out with the following objectives:

- a. To analyze the social processes affecting women's role in society.
- b. To study the change in the social and economic roles of women in the rural society vis-à-vis increasing mechanization.
- c. To examine social, economic and cultural factors that shape the relationship between mechanization and women's role in rural society.

- d. To calibrate social change in terms of gender distribution of work with different levels of mechanization.
- e. To find out changes in the participation patterns of rural women resulting from mechanization in the village society.

## **1.6 Locale**

The study was conducted in village Tapiali, which is located at a distance of 49 kilometers from Rawalpindi. The nearest town Kahuta, a tehsil headquarter, is only 4 kilometers away. A metal road leads to Tapiali village which is near Rawalpindi – Kahuta – Kashmir road. The village has a total population of 1569 persons with a literacy rate of 84.64 percent and calculated dependency ratio of 3.02.

Farm economy has experienced mechanization. Farm machines in common use were tractor and threshers. The physical and cultural landscape of village has changed due to stimulus of mechanization. Females were working in family fields as invisible workers. Economic base of village was changing from farm to non-farm activities.

There were following reasons for the selection of Tapiali village as a locale:

- a. It was a village where farm machines were a prominent form of mechanization (on the farm);
- b. People have started using electrical appliances in 1989 after village electrification;
- c. Village was self-sufficient in food needs before farm mechanization;
- d. Village farm mechanization was completely rental based.



## **1.7 Significance of Study**

General lack of interest in studying the change in women's role due to mechanization has kept the work produced in this regard at initial stages. Very few anthropological studies have concentrated on the analysis of particular technological mechanizations or changes, even though field workers are constantly reminded, in the course of research, of the penetrations of roads, dams, air travel facilities, new types of vehicles, medical systems, new cultivation techniques, and other technical modifications into previously "untouched" areas (Bruce et al., 1993a). This study aims to fill this yawning gap.

Anthropologically, the status of women and men, with respect to their rights and responsibilities, is reflected through the social system in which they live and operate. This system underscores the idea that a society is grouped into long lasting and relatively stable patterns of relationships between actors who perform their different roles, functions, meanings or purposes within the given framework. In the case of Tapiali village, religion (Islam) and age old customs, traditions, norms and social institutions have defined the boundaries of that social system.

Islam signifies a potent force in determining the status and role of men and women in the social set up of Tapiali village. Islam gives a woman freedom to work and earn her living. She is not bound to spend a penny from her earnings on her family. This remains the exclusive responsibility of man. However, she must perform her basic duties as a wife and mother. Although an Islamic society is patriarchal in nature, Islam grants women certain rights and position in society. For example, women have right to control inherited property and also have freedom of economic activity not allowed to them in village Tapiali under prevailing socio-economic conditions. Though the primary point of reference remains mechanization, this study

also examines these undercurrents of different economic and social factors that debar a woman from her basic rights in the agrarian society of Tapiali village.

The arrival of television and satellite dish has made this world a truly global village for Tapiali residents as well. Socio-economic changes at global level have brought about a remarkable change in the thinking of both men and women of the village. The study takes stock of these global changes and attempts to identify their impact at the village level especially with respect to women.

This study also attempts to develop a new hybrid theory to explain the changing role of women due to mechanization in rural society. Women as a segment of society is studied and confirmed that any change in one cog changes the working of the whole machine.

The study also looks at woman as a well-integrated part of a social system. Her role in society is seen both independently as well as dependently upon other actors in society. A special effort has been made to avoid any bias in data collection by obtaining the views of both men and women regarding change in her role.

## **1.8 Methodology**

The actual fieldwork was done in village Tapiali. It was necessary to collect the background information regarding kind, size, location, activities, mechanization (types and items used) and their effect on the economic and social status of rural women in the area.

Multiple in-depth interviews, instrument based interviews and questionnaire techniques were used in the above-mentioned area along with participant observation, focus group discussion and in-depth interviews with key informant. After gathering general impression, data was collected from specific places. Hundred percent households of the village were surveyed and data collected.

The village selected was the one with which the researcher already has some familiarity during the course of her stay in the area. This village is a few kilometers away from main town Kahuta. The researcher visited the area a number of times. However, in the beginning of research, a quick (rapid) socio-economic survey of the village was conducted and village profile was prepared with the help of data gathered through questionnaires. This also involved some participatory techniques in order to fully collect and comprehend the information about households; their members, professions, their socio-economic status, resources within the community etc. It also involved social mapping of the village, distribution of wealth, venue diagrams, and transect walk etc. This process took more than three to four months but gave a feel of the village and also included initial meetings with the elders of the communities. The latter helped in getting their permission or consent to conduct this research.

Following are the tools used for data collection:

- a. Participant observation.
- b. In-depth interviews with key informant.
- c. Focus group discussion.
- d. Individual house hold level interview.
- e. Questionnaire.

All these helped the researcher, to define the position of women in that society, recognizing the socio-economic structures, their framework, their participants, production and processes. This all helped in understanding the changing role of women as a result of introduction of mechanization in the village Tapiali.

## **Chapter 2**

### **Theoretical Framework**

#### **2.1 Introduction**

As said earlier, in the statement of Research Problem of this study, for purposes of analysis, a specially designed hybrid theoretical framework was employed because at the very outset the issue was found to be dual in nature, that seemed to have made it fairly concealed under a thick blanket of inter and intra web relationships at village Tapiali. Introduction of machines, and their use in form of technology modified their earlier roles and quite a new form of life style gradually seemed to have merged. This developed hybrid model mainly rests on the pillars of different brands like, alienation of Marx, rationalization of Weber, duality of agent and structure of Gidden, capacity development by Sen, gender stratification of Blumberg, and hegemony of Gramsci (1999). The discussion developed further is developed on pattern of discourse, with inclusion of several case studies, so that it will be easy to see how these pillars complement and enhance the flavor of the built hybrid theoretical framework.

The basic main concepts that are embodied in this research study are: mechanization, women role and the change in the role of women because of mechanization. The last and the first of these three concepts were found to be more complex for purposes of treatment. Similarly, the change in women role did not directly occur as a result of mechanization but indirectly impacted their lives socially as well as in terms of their economic wellbeing. Chapter 7 deals with “Social Impact of Mechanization on Women Social Impact of Mechanization on Women” and is discussed in detail.

In the light of the theoretical framework being employed it was intended to systematically observe whether the process of mechanization, as an agent of change, modified the role of women in village Tapiali, did it create alienation, strengthened the institutional structure of patriarchy and favored concentration of economic resources, power, and knowledge within the setting or not? It was also investigated if mechanization further created new classes of users and non-users of machines, giving power to one class, drawing and draining the existing power within the relations, classes and structures.

Besides focusing on the Social Impact of Mechanization on women in village Tapiali, some such hypotheses were drawn from the literature in review, which helped in providing deeper insights into the village life. In the nature of evidence thus collected from the village, several of these hypotheses were then examined and inferences were drawn. What follows next is a table which summarizes, some of these assumptions, which are being presented here only as a sample, whereas a detailed discussion of these as well as on many similar assumptions is embodied in the subsequent text:

**Table 2-1: Brief Summary of Theoretical Framework**

<b>Relevant Theoretical Postulate</b>	<b>Assumption / Hypothesis Formulated</b>	<b>Nature of Evidence Found in Village Tapiali</b>	<b>Inference Drawn</b>
Marx's Concept of Alienation	At village Tapiali, due to mechanization of agricultural farms involving the use of male-operated machines like tractors for example, the women of the area must have got ousted from the whole process of production.	Tilling and plowing had traditionally been regarded as male-performed activities whereas the women were mostly found to be engaged in household related tasks like, fetching water, gathering fire wood, cooking food and bringing up children etc. Farm operations like grass cutting, weeding etc. was still observed to be manually done by the females. However much of their control on farm produce, which earlier used to be stored by these women in the household itself, ceased to exist due to the direct transportation of the same from the village farms/fields to the market.	Partly true. If these women were not completely alienated, they were at least marginalized in the sense that the mechanization not only promoted masculinity and patriarchy (as compared to the women the men were now more in the know-how of the operating systems i.e. tractors' repair use and maintenance etc) but also deprived them of earlier decision making, if any, when this plowing and tilling was done with the help of the livestock (bullocks)

<p>Weberian concept of Routinization</p>	<p>For the survival and continuation of new social practices as generated through modified roles after mechanization, some form of 'routinization' in village Tapiali must have occurred.</p>	<p>Initially some of the household women had felt deprived of their earlier control over the surplus farm-produce. One of the earlier remembered reactions of a woman, which was recorded by me, was:</p> <p style="text-align: center;">”ھائے ہن لے سارا گج باروں بار ای لے جان گے“</p> <p>(“Oh, will they now take everything away without letting this house see any of it?”).</p> <p>But then later she accepted the inevitable and had felt fairly compensated in terms of more money coming into her hand as a result of increased farm income which her husband now started giving to her to meet her day to day household expenditures.</p>	<p>True as it always takes some time to let the changes be internally accepted as a matter of routine and that too in the light of the alternate benefits which may be accrued to them as a result of farm mechanization.</p>
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<p>Gidden's Concept of Duality of Agent and Structure</p>	<p>It was presumed that in village Tapiali, after mechanization of the farm lands, with all the changes in their roles, these women must have still continued to be an integral part of the whole new system by contributing to the same as well as by drawing its benefits.</p>	<p>In my study of Tapiali village, it was quite evident that males and females both, after attaining their new somewhat independent roles which were due to the mechanization of their farm lands, gradually tended to not only act as the individual recipients of its effects on them but at the same time still continued to be a part of the whole system. At least two such women were reported to have embroidered a cushion as well as a small decorative piece of pearled cloth for her husband's tractor</p>	<p>True. Although because of mechanization, the division of labor between males and females had become more pronounced, there were still many such grey areas where they not only supplemented each other work but also tended to reciprocally reinforce the same. For example with comparatively more competitive farm activity than before, men could now hardly afford to be at home with their families and these were the women who not only managed to provide them there food, while they being in the field, but also looked after their other comforts when they came back home.</p>
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<p>Sen &amp; Moore's Capacity related view</p>	<p>Keeping in mind Sen's theoretical perspective of mechanization as freedom, it was presumed that in village Tapiali, after mechanization of their farms, due to an excitement of the kind which technology initially produces, people must have been inclined to learn new skills and as such may have not felt shy of using several other gadgets for their personal or home use.</p>	<p>In Tapiali it was quite interesting to see that some young boys had not only learned the ways to repair or even develop some indigenous tools for these tractors and other associated farm machinery that was now being used. Some were engaged in jobs like packing, loading and transporting of the produce to the market. A simple technical intervention seemed to have opened new avenues of work and people's freedom to make their own choices.</p>	<p>Partly true as the women were still not being able to exercise their freedom as such. Rightly as was discussed by Moore in relation to what modes of production and distribution prevail in a society, it largely depended upon those who were the real decision makers for selection of these modes as well as who was to use them; obviously in this case they happened to be the males (for example what TV programs were to be seen by women and whether they should have an access to the mobile phone or not was largely decided by the male heads of the households)</p>
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Culture is said to be a study of Economic Development. In the theoretical skeleton of economic development, term “culture” was not properly realized or recognized since it has been understood that farming traditions created hurdles to development. This idea in coming times was replaced by the doctrine promoted by the Green Revolution; it said that though the small farmers had fewer resources but they acted as balancing or rationalizing agents in the process of economic development through agricultural modernization (Ruttan 1988). In theory of growth, the progress of institutional change and the role of culture in that progression have been either undervalued or ignored altogether in relation to the progress of technical change. Thus, culture gives different forms to the institutions that block or support technical change (Feeny 1983). (This fact was fairly evident from this study of Tapiali village) It is therefore very clear to those who work for the rural development programs that ignoring the nature and progression of institutional change often ensures sources to be misallocated thereby leading to a project/program’s utter failure. Better-integrated conventional cultural characteristics and inspirations in project designs thus facilitate achievement of desired goals for bringing about any change in human communities.

In the theory of rational choice, culture behaves as a non-explanatory hidden entity that cannot be observed because of the conditioned utility function. In 1992 it has been explained that culture is the reason, which makes economist uncomfortable, as they are more inclined towards the deterministic theory (Fafchamps 1992). Culture when used as variable leads to multiple equilibriums instead of generating a single balancing outcome (Smale and Ruttan 1994). Economists who are interested in study of innovations and mechanization need to bring the cultural power and capacity from behind the invisible part of a stage to the forefront as clearly

seen by them. This will prove the functionality of cultural traits and their talent in relation to technology and institution (Ruttan 1988b).

First it is important to note that understanding of a community's cultural traits and talents may ensure its progress and prosperity when used as an aid for that purpose. However any specific cultural trait hindering or facilitating the chances of institutional change may act as a causal factor of progress not at the expense of the social harmony which this cultural trait seemed to have had already generated among those people (Ruttan and Hayami 1984) (North 2009). Few of the conventional organizations can be “renovated<sup>2</sup>” or redesigned as growing institutions (Smale and Ruttan 1994).

Secondly, such renovated institutions may expedite specific technical innovations by.

- a. Providing a built-in motivational mechanism for distribution of advantages of technology and public resources by generating enough of interest among several segments of the same society.
- b. Changing the private economic advantage of the visited technological innovation through amplification of its psychological interests and benefits.
- c. Renovating the institution rather than transforming the same may increase the prospects of mechanization or technical changes and thereby increase its productivity.

## **2.2 Duality in Action and Structure**

Researcher has derived the concept of duality in this hybrid from structure theory of Gidden, based on the pillars of duality of actor and structure, for example in my study of Tapiali

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<sup>2</sup> Fetini (1993) defines three archetype models of institutional development: innovation, adaptation, and renovation. Renovation consists of building a new institution from an already existing but no longer functional institution. Fetini characterizes some aspects of the farmer group movement in the Sahelian region of Africa, and in particular that of the Naam Groups, as institutional renovation.

village, it was quite evident that males and females both, after attaining their new roles which were due to the mechanization of their farm lands, gradually tended to not only act as the individual recipients of its effects on them but at the same time still continued to be a part of the whole system. The characteristics of social system are presented in form of its conducts, which are produced and presented in space of time over the period as the time passes by. The analysis of built-up of social institutions reveals that how any social activity is extended over time. In this theory structure is considered as code of conduct and resources engaged in producing social practices taking shape and stability overtime. In abstract terms, structure can be understood as norms and code of conduct. Similarly, the resources are also in form of product of human activity and control on material product. In the above said theory structure and agency/agent are showing duality or can be seen mutually dependent on each other.

In this model, mechanization shows duality as conceived by Giddens in his structuration theory (Giddens 1984). It acts as agent or action and at a same time as structure creating change, but the problem was it is static and social practices are not static. Rose (1999) modified this concept giving it the shape of spiral in time space. This help to explain clearly the concepts like routinization (also explained by Weber) and system integration, etc.

### **2.3 Routinization and Mechanization in Weberian Terms**

For the survival of social practice and institutions some form of routinization must occur. It must be clear that who holds the power, for the order in system. Weber identified two types of routinization, traditional and rational-legal. First comes from inheritance and second from set of law and rules for particular purpose. It was quite interesting to see the application of this Weberian concept of Routinization in my study at village Tapiali. Initially some of the household women had felt deprived of their earlier control over the surplus farm-produce which they

independently managed and stored earlier in their households that's before mechanization, but then later accepted this inevitable and had felt fairly compensated in terms of more money coming into their hands as a result of farm income which their husbands now gave them to meet the day to day household expenditures. Any social relationship that exists in society can be marked as 'conflict'. It is very important to understand conflicts latent meanings as it may be positive or negative. Positive in sense of competition for control on opportunities and advantages without being physical employed, to a limit to bring order. Negative in a sense when one is physically involved in violence and move further by snatching others power. The harmful competition is also called selection just on basis of concept of biological selection presented by Darwin. Social action is directed by social relationship, based on subjective feelings of individual or group, it is of no concern that they are effectual or traditional they exist together. Social relation will be termed associative, if falls under the umbrella of social action on the basis of rational motives, values or reasons (Weber 1947).

## **2.4 Social Action**

Social action is important in the study as this helped people in the study area perform and choose action, which transformed their lives. Human behavior is expressed in form of action, and the performer characterizes them with subjective meanings. These can be overt or inward and subjective. It must be clear that not every action is social, if people are performing action as group, or imitating others. We can say the action produced and performed as response to other's behavior is social action and with meaningful manifestation attached to it. In my study, I have discussed how the social action of mechanization changed the role of women in the area. Action can also be performed uniformly in sheer self-interest of an actor, though in response to others' behavior and expectations.

Social action can be performed in a society or in a social group in relation to its social, economic, psychological, religious, intellectual, political, or cultural spheres though its manifestation in these spheres may often overlap. In my study of village Tapiali, economic and social spheres were kept in focus while in detailed result discussion I couldn't help stop borrowing the shades from these remaining spheres as well.

Social relationships, on basis of subjective interpretation, are basis of conflicts. Selection process of opportunity and survival leads the differences. Compromises in interest of individuals or groups form associative relationships. Out of the realm of compromise the conflict in interest, is not changed (Weber 1947).

Prime motives for discontinuation or termination of relationship depend on:

- a. Maintaining the quality combined with the concern and the resulting opportunities favored by power and profit.
- b. Sensitive to availability of limited advantages depending upon needs.

Though this theoretical reasoning might seem to be true among groups having formal business relations, didn't seem to be relevant to my study at village Tapiali. Here the nature of inter-spousal relationship was not that formally defined and as such was not consciously pursued within a village household. In a highly male dominated society, where a woman's voluntary subordination to her husband was deeply rooted into the village culture and where women were least aware of their legal and family rights, any restraint on their earlier control on farm produce obviously didn't seem to have created much of a hue and cry and as such any conflict arisen so far did prove to be quite transitory in nature.

## 2.5 Stratification

Here the concept of stratification was used in angle with Karl Marx's concept of class, Max Weber's class and status, and Rae Lesser Blumberg's gender stratification<sup>3</sup>. Marx Class was due to property ownership, on basis of control on production, on basis of supply of labor and accumulation of capital<sup>4</sup>. Max Weber's class is on basis of distribution of resources, status and power. In all the concepts of stratification all classes have inter and intra-relations. These relations affect and are affected. A reason for the situation of class and its effects offers ground for collective action. The transparency of these connections determines the location of class performing social/ collective action. The degree of contrast in classes assures their situation and survival, once the situation of class is accepted, than merely there will be any action to change or alter its situation. So, social action is the base of class situation, and classes in system are actually stratification. There exists the relationship between class, class situation and stratification. Class situation is dimension of stratification, manifesting control over resources both tangible and non-tangible, and opportunities. Control on economic resources and technology in this particular study extended ground for stratification. They also threaten existing classes and stratification and further re-assure new or transformed stratification resulting in new status and roles of members in class.

## 2.6 Changes in Power Structure Due to Mechanization

Control on resources and produce gives power to class, in this particular case, mechanization in one form gives power of produce to seller (males) and resource generated as process of selling, secondly the farm machines and their use creates another sphere in which

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<sup>3</sup> For detailed discussion on Gender stratification theory see section 3.2 of same study.

<sup>4</sup> For detailed application of this concept see chapter *Social Impact of Mechanization on Women* and chapter 8 in same study.

users have power and control on the use of machines to help the process of production. Control and possession gives way to inequalities resulting in exploitation. Those in turns end in alienation from the process of production and produce. In the village power was already with landowners (as in this case the owners of land were the males), these landowners transfer their power to merchants (in the case merchants were those who sell or buy the produce from farm, and they were males) by transferring the produce to them. Here the ownership of means of production started. The whole cycle of transfer strengthen the strong, as all transfers were between males and when the production was in process females were also partner in production. This leads to concentration of power and means of production. Workers (mostly in these case females, the hired labor and machine operators) were alienated from produce. This also gave power of decision to the males as how and when to use these machines according to need. Before mechanization, women were partner in control of produce as being partner in the process of farm management (see details in results discussion in chapter 7 and chapter 8) but now mechanization gave control in various forms to one class in society (males) and created concentration of power in this particular group.

This also gave way to problems like: Low wages or in case of females who were working on family farms were unpaid workers, lack of capacity to consume worker to reduce the production cost or input.

Marx and Weber both worked on the concept of alienation. Marx alienation is rooted in historical materialism while Weber' alienation rooted in capitalism. Capitalism is due to a desire to accumulate rather than to spend. Marx explained causes and results of capitalism while Weber only explained causes. From Marx, concept of alienation and class has been borrowed and modified the concept of source in Weberian term. Both believe that past action shape the present



and future. As the females in the study, area was landless and at giving end so, this action will shape present and future. They purely will lose control on the produce as in the process of transfer they did not happen to be a part of the loop.

Social division of labor creates sub-spheres in economic and social life. And so classification of classes in village Tapiali was observed to be based on caste, gender, machine users and non-users, powerful or powerless both social and economic, and on ownership of resources especially the land and its produce. Class shaped relationship of its members not only among themselves but also with those not belonging to their class.

Super structure is the intellect resting on the relation of production, on ownership of production, on ownership of means of production. Means of production is the output in form of crop. Relations of production in this case, were complex as women as non-users are at the proletariat level and men at bourgeois level having control on machine and its use.

Now with mechanization, males have access to production and women are only workers providing services without wages on family farms. Females were previously paid in form of partial control over produce and seed bank, now they have totally lost control over these resources (see results in chapters on results discussion in same study in chapter 7 and chapter 8).

In village Tapiali with shift of control, its concentration became more pronounced in the hands of the males as a separate class. This gave birth to a conflict that led to the further reshaping, strengthening, and re-ordering of the same classes and the division between these classes became still more conspicuous. On the other hand women were reduced to the status of a class of exploited workers. In case of village Tapiali, this rearrangement of social roles further established the males' superiority over the females. The latter's share in farm produce was now far less than what they had before or was reduced to a negligible quantity. Hence the collapse of

the conventionally established social structure was due to the increased input and more concentration of resources within the class of males.

### **2.6.1 Social Space**

Considering ‘Social Space’ in the sense in which Marx explained it i.e. in terms of power, values and norms as are related to the production of resources and their ownership, village Tapiali perhaps provided a micro-level best illustration of the same. After mechanization of agriculture farms, now with no control on the means of production like for example the tractors, these women were more confined to within their own households, their visits to the fields were fairly reduced, the nature of technicalities involved in field operations and these women’s limited know-how about machines, forbade them to participate in any decision-making unlike the days when ploughing of the fields was carried out with the help of bullocks. Their control over the storage and distribution of farm produce also ceased to exist there as this produce was now straightaway being loaded and carried to the market from the fields. This obviously seemed to have reduced the social space which these women had enjoyed earlier.

### **2.7 Types of Marx Alienation**

Alienation is the result of capitalism. It is resulting alienation was from;

1. Produce from the farm in form of grains, or other bi-products of crop.
2. Working (In this case, commodity is in form of labor. In exchange of wages, workers were alienated from unmediated relation to their activity in return to the salary or wages they get.)
3. Individual gets alienated from himself as they get alienated from produce. When they work with machines they work just for wages. Here it is important to differentiate

between activity and work. Machine operators (here it is about the rental machines operators) have no affection with the process of production on farm because their interest is to get the wages of the work they perform on the farm.

4. When people work for wages from one place to another they show lack of affection or alienation for coworkers. No social relationship develops among them as they act as work producer producing work as “commodity work”.

In simple sense of the term ‘alienation’, men’s control over the means of production, like in village Tapiali, the use of tractors in farm operations, their maintenance and repair etc, as well as the marketing of the produce primarily being the male’s performed activities, women were fairly marginalized and thus alienated from the field operations to a great extent.

## **2.8 Mechanization**

For Marx, mechanization is a mean of production that is necessary for the production of material goods. People use technical means of production to develop social relationships of production. Means of production and production relations together result in modes of production. Here, the author sees dependence of means on relation and relation on means, similar to ‘Structuration Theory’ where structure is dependent on an actor (agency) and an actor is dependent on the structure.

In Escobar’s book, *‘Encountering Mechanization the Making and Unmaking of the Third World’* (Escobar 1995) it is quoted from United Nations documents presented in 1950 that fast economic growth is not possible without unwanted and painful settlements. For this agreement the traditional philosophies have to be put aside, new social institutions have to form, bonds of segregation like caste, race, creed and ethnicity have to blow. This indicates that traditional cultures have to accept the dominant paradigm in determining the form, content and nature of

mechanization. According to the French philosopher Michel Foucault, this paradigm is predominantly western.

The author conceives of mechanization as defined by the broad concept of *social change*, which can refer to either structural changes in society at large, or changes in the lives of individual people. Here our focus is exclusively on the lives of women. In the book by Kerkvliet and Porter (Kerkvliet and Porter 1995) gave definition of social change in rural areas as rural transformation, for this they referred Barrington Moore's explanation for transformation of rural societies, gradually but similar to the pattern as was observed in my study of the village Tapiali.

## **2.9 Production Modes and Decision Making Processes**

It is also useful to rely on Amartya Sen's conception of mechanization as freedom as a theoretical argument. His theoretical perspectives are more relevant since he focuses on South Asia, where village Tapiali is located. Sen addresses mechanization from the viewpoint of individuals by stressing the influence of their physical and mental characteristics on their freedom to choose different lifestyles. He does not ignore the relation between individuals and their peers, nor with society at large, but states that under similar external conditions, the internal characteristics of a person influence his actual freedom to choose. Sen conceives of mechanization as freedom and identifies five instrumental freedoms: political freedom, social opportunities, economic facilities, transparency guarantees and protective security (Sen 1999). In his opinion, the role of the *State* in mechanization must be to guarantee and safeguard every individual's real and equal opportunities to enjoy those freedoms.

Moore discusses what modes of production and distribution prevail and who decides on the selection of the modes. He uses women as an individual (group) experiencing change due to the stimulus of mechanization, as opposed to structural social change at societal level. The author

also acknowledges interdependency between structural change in society and social change at individual levels and examines this relationship with respect to increasing individual freedoms through rural mechanization.

## **2.10 Marxism and Gender Roles**

Marxism sees the role/status of women in the backdrop of a capitalist society that traps men into wage labor, and keeps women in low paid work. In this way, a capitalist society saps the power to choose or make a decision.

## **2.11 Role Formation and Power In Giddens Theory**

Power concept is clustered around the relations of action and structure. Giddens (1984, 2002) defines structures as consisting of rules and resources involving human action: rules constrain actions resources make it possible. As misunderstanding power is conceived as naturally factious, but there is no doubt about the fact that most of the hard realities and bitter conflicts in our everyday life are exactly, power struggles. All such efforts can be considered to re-divide or subdivide resources in social life either in form of material or as non-material resources. Material resources can be money, land or other physical assets. Whereas non-material resources are power, control, social roles and status. By 'control' Giddens means the talent and capability that some actors, groups or types of actors have to shadow the situation in which they live with other actors and their response, actions. In the conflict of power the command of control always work, the resources are distributed according to the dialect of superior and subordinate in social context (Walker 1979). Giddens is of the view that people choose their own actions and though their knowledge is limited, they act as agents reproducing social structures and these reproduced social structures lead to social change terminating in cultural change.

Individual wants to be updated and join the “fashion” at the expense of their traditions, not intentionally producing actions, giving way to change. The same is happening in village Tapiali, where the role of women is changing not due to deliberate efforts to change, but unintended results of action, by ignoring traditions, replacing and reproducing them differently.

Social identities and the position-practice bonds associated with them are 'mile stones' in the virtual time-space of structure. They are associated with regularizing rights, accountability, charge and authorities, which make roles within specific community. The use of standardized guidelines, especially to do with the traits of age and gender, is basic in all societies, not bearing large cross-cultural variations (Giddens 1984; Rose 1998).

## **2.12 Social Structure**

Social structure generally refers to:

- a. Entities or groups in definite relation to each other,
- b. Relatively enduring patterns of behavior and relationship within a society, or
- c. Social institutions and norms becoming embedded into social systems in such a way that they shape the behavior of actors within those social systems (Abercrombie and Turner 2000, Calhoun 2002)

The social structure can be perceived as relationships between different entities as well as groups or long lasting and relatively stable patterns of relationship. It emphasizes the idea that society is grouped into structurally related groups or sets of “roles”, performing different functions, meanings or purposes. Social structure can be exemplified in the idea of "social stratification", which refers to the idea that society is separated into different strata, according to certain characteristics of social distinctions such as race, class and gender. Social treatment of

persons within various social structures can be understood as related to their placement within various social strata.

Durkheim was concerned primarily with how modern societies, showing that a culture of technology and mechanized adoption could maintain their integrity and coherence in the absence of traditional features such as shared religious and common ethnic background. Authors before Durkheim, such as Herbert Spencer or Otto von Guericke, had argued that societies evolved much like living organisms, moving from a simple state to a more complex one resembling the workings of complex machines. Durkheim reversed this formula and argued that traditional societies were 'mechanical' and held together because everyone was more or less the same, and hence had things in common.

Durkheim refers to a kind of solidarity in a given society arising from the preponderance of a legal system. He finds that in societies with mechanical solidarity, law is generally repressive: the agent of a crime is punished to preserve the unity of consciences. On the other hand, in societies with organic solidarity, law is generally restitutive: it aims not to punish, but instead to reconstitute normal activity of a complex society. The rapid change in society due to increasing division of labor can produce a state of confusion with regard to norms and increasing impersonality in social life, leading eventually to relative normlessness, i.e. the breakdown of social norms regulating behavior. Durkheim (1951) labels this state anomie, from which come all forms of deviant behavior, most notably suicide. Changing system from non-mechanized to mechanized is an effort to reduce the burden on system or on those who are not well integrated in the system and in their effort to leave the unit accept mechanization as a refuge. So accepting or creating machine denotes a deviant behavior according to Durkheimian perspective. According to Hart (1967), this social stratification also leads to a highly complex division of labor resulting

in 'organic' solidarity. Different specializations in employment and social roles create dependencies that tie people to one another. Workers, for example, earn money, and must rely on other people who specialize in certain products, such as groceries, clothing etc. to meet their needs. Taking a cue from Durkheim, Hart has opined that society is not the creation of individual subject but a result of “collective consciousness”. The collective consciousness means individuals sharing common beliefs and sentiments. Social solidarity will be impossible without this consensus and no integrated social unit will exist.

### **2.13 Dynamics of Change in Darwinian Style**

Darwin is known for his evolution concept in biology, which was later adopted in other disciplines. Here are few steps of dynamic processes that are of interest to social scientists as they help to follow the concept of change from ground zero to sky heights. Here it was adopted for its mentioned characteristics, which were discussed in coming paragraphs of the same study as:

#### **2.13.1 Developmental Processes**

Researchers and sociologists, who follow the Darwinian traditions, look culture and move through the development process in parts or units. When a new project or any system as in our case machine was introduced in already existing structures and institutions, these organize to construct or reform new rules to cater new organization. This is done by self-organizing through special process of developing and evolving new organizational entities and systems. These new systems, structures and institutions in already existing system are result of *adaption* or *adoption*. The introduction of new entities in prevailing system is as producing mutations in genetic pattern of individual by changing genetic print. This change can be sudden like mutation or can be



equated as major surgery like limb amputation, or with passage of time nonfunctioning of appendicitis in the body.

### **2.13.2 Negotiation Dynamics**

Individuals must by default or intentionally develop adjustments within system. Participants sharing sameness in social group, partners and others in competition all are negotiating their status. Like prey and predators playing game of negotiation for their survival and position in the stratification of dominance. In human society such dynamic social negotiations are overwhelmingly vital because of the capacity and real conflicts of interest (Richerson and Boyd 2005). In our societies, market mechanisms and political systems create very large and complex negotiation dynamics that dynamically integrate entire societies. If hidden and unhidden hands are working efficiently, conflicts between private and public interests are minimized in such dynamic systems.

### **2.13.3 Ecological Processes**

Populations increase or decrease by processes like births, deaths or by internal or external conflicts. Catastrophes, famine, floods, epidemics, and earthquakes also check population. In few cases, it becomes endangered or extinct. Whole population or its segments in form of species may change its concentration on the surface of earth. Human populations also grow, shrinks, and move into or out of land, which is called migration, changing the concentration of population in areas from where it moved and also in areas where it moves in.

### **2.13.4 Geo Dynamics**

“Geo” is a Latin word meaning earth. Earth in itself is a dynamic system. So, without changing culture, genetic blue print and concentration of population by natural or artificial

means, life on earth would be dynamic. In itself, it has all the traits to develop relations and interrelations. All this can be seen from Darwinian evolutionary perspective. Humans on surface of earth are changing the chemistry of all such dynamic processes. As earth is the homeland for *Homo sapiens* so, they cannot be neglected either they are producing change or are affected by it.

## **2.14 Discourse on Social Change**

The researcher is concerned with changes due to mechanization particularly in the role of women. She has developed a discourse on mechanization leading to a social change and finally cultural change. This approach of dialogue will help her talk about all positive and negative aspects of change due to mechanization. Dialogue is a helping medium for rationalizing, socially, culturally and historically accepted set of social bonds, presented in large no doubt by language, though exclusively by it (Gee 1991). When we go for dialogue there develops two streams, one in favour and other against that point of view. Similarly, when discussing mechanization and social change same apply. One is focusing mechanization as to bring social change and the second, shadowing mechanization as its result of social change. These views appear pole apart, but it is not impossible to bridge the gap between. In this study an effort has been made to develop dialogue between these two extreme ends generating mild opinion. If we look at the evolution of mechanization and social change, it can be seen to occur in five ways as;

### **2.14.1 Mechanization Focused Discourse**

According to Bernard and Peltó (1987) within Anthropology use of machines was neglected for quite long very few in this discipline concentrated on analyzing the changes resulting from mechanization. For them mechanization was previously an “untouched” area (Peltó 1992).

It is generally believed that acceleration in the pace of technological Mechanization inaugurated by the Industrial Revolution has until recently resulted mainly in the displacement of human muscle power from the tasks of production. However, Mechanization focused discourse highlights improvement in conditions - for work, communication, transportation, learning, health, or whatever area the Mechanization addresses. These improvements are generally seen as bringing significant changes and are often described as "revolutions" (Bruce 1993b). Therefore, in this perspective change occurs but it is important to channelize it through mechanization. It directly changes social practices. The social system is seen as an arena in which Mechanization does its work. Variations in use are attributed to improper implementation (Papert 1987).

#### **2.14.2 Social System Focused Discourse**

From the perspective of social system focused discourse, technical concerns are superficial, while political concerns are central. Focusing on the technical aspects of the innovation is seen as failing to address crucial ideological and ethical issues. In contrast to the generally optimistic tone of Mechanization-focused discourse, a system-focused discourse is generally pessimistic. It typically finds little real improvement, and change is incremental and slow. Rather than revolution, it finds re-emergence or reinforcement of established patterns that are often negatively valued. For example, writing about the minimal positive effect that mechanization has had on women's work, Scott (1982) observes that mechanization has served to reinforce the traditional position of women both in the labor market and at home.

#### **2.14.3 Articulating Analyses of Change**

Opposing dialogue appears naturally when the issues are complicated and assorted, counting against a single, coherent perspective. It is important that different perspective have their tones when discussing social change. The designer of machine naturally focuses on

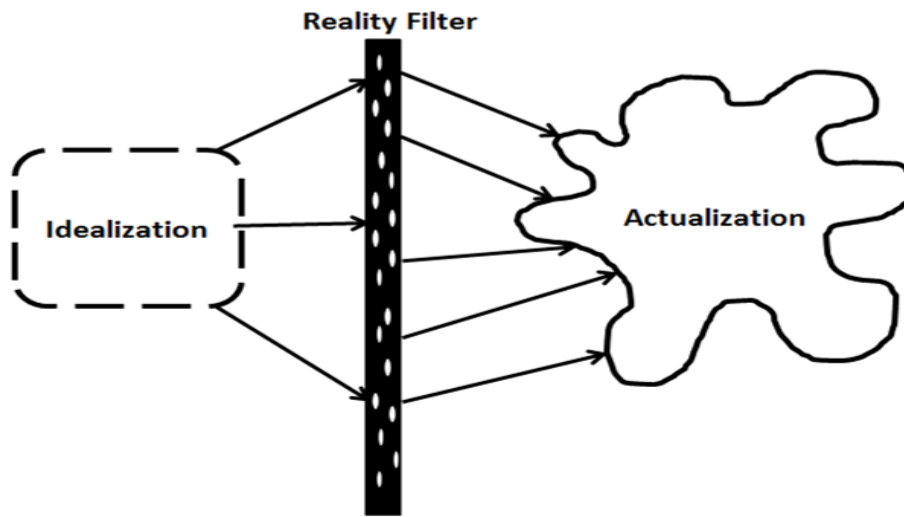
technical details, just as the social critic focuses on social processes. Akrich (1992) shows how the design of machine is a process that represents intersection of the physical apparatus aspect of technology with its social relations aspect. Victor Papanek (1973) contends that the design schools teach too much design and not enough about the social, economic, and political environment in which design takes place.

#### **2.14.4 Reviewing the Actualization Process**

The perception of mechanization by one who is developing a machine in an ideal situation (laboratory) and the user of that in a social system are different. One, who is developing, constructs mechanization in an idealized context. However, the social system may or may not change the way intend. The distinction between the ideal and the actual suggests a process, the actualization process that highlights the dichotomy between the ideal and the actual worlds. It is possible to view actualization as a distortion of what has been idealized just as Plato saw idealization with "particular qualities" as an imperfect manifestation in actual (Hamilton and Cairns 1961). This view is represented in Figure 2 1. Resulting social system after the application of machine is Actualization.

Akrich artifacts anthropologist (1987) does not take a static view of Mechanization as fixed objects that are applied to produce changes in social systems. Instead, he looks at Mechanization as a set of processes continuous demonstration of social relations. Mechanization and social development are studied as equal collaborating partners that affect each other dynamically. The adoption of Mechanization is considered as a process in which machines are integrated into a dynamic social system that may lead to changes in mechanization, enhancing change in the social system, or may not affect it at all.

**Figure 2-1: Actualization Process in Platonic Perspective**

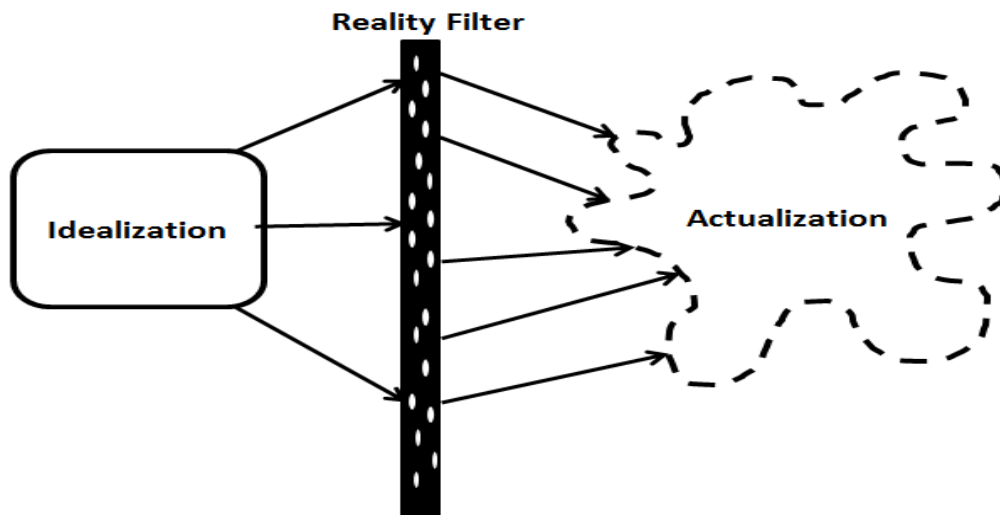


The imagination and idealization on the left represents the effect of Mechanization in an ideal world. The lens represents the realization process, or can be considered reality or use by user in social world. After passing through the lens, the actualization stage is arrived, which distorts the ideal form. The pigmentation in form of users' perceptions in social system has been added to change the ideal shape of artifact (in this case it is machine and mechanization process) and the shape on the right represents a particular actualization, which is real. The existence of "distortions" of mechanization is a clue that prevailing rules and practices of institutions and individuals decides or shape the fate of machines rather than its own characteristics. (Cronbach 1986; Cuban 1986; Cohen 1988; Bruce 1993). This can be better visualized while reading chapter No 6 of the same study.

Wittgenstein (1953) and later by Billig (2001) presented a different model from Plato. In the idea, in which, users are central to change not the machines. It is very important to understand that machine is minor introduction of newness in already existing system, the effects of mechanization brings change in the system not the process itself.

The social practices related to the use of machines are perfect efforts to impersonate some ideal form of machine not its uses. This was Platonic idea, which was inadequate. Because users certainly translate mechanization in different ways, apply it quirkily to their own contexts, and even re-create it to fulfill their needs. Machine and mechanization, which is not prepared for this reshaping is poorly designed, not that it maligned or abused by the user<sup>5</sup>. This view of actualization process is presented in Figure 2-2.

**Figure 2-2: Actualization Process in Billing and Wittgenstein Perspective**



The solid though not regular shape on the right presents a particular and corporeal set of social practices that appears after the introduction of mechanization. Its traits reflect a history of collaborating social processes, to all of this mechanization is the newcomer, and its effects are rested on the stratified typology of underneath events.

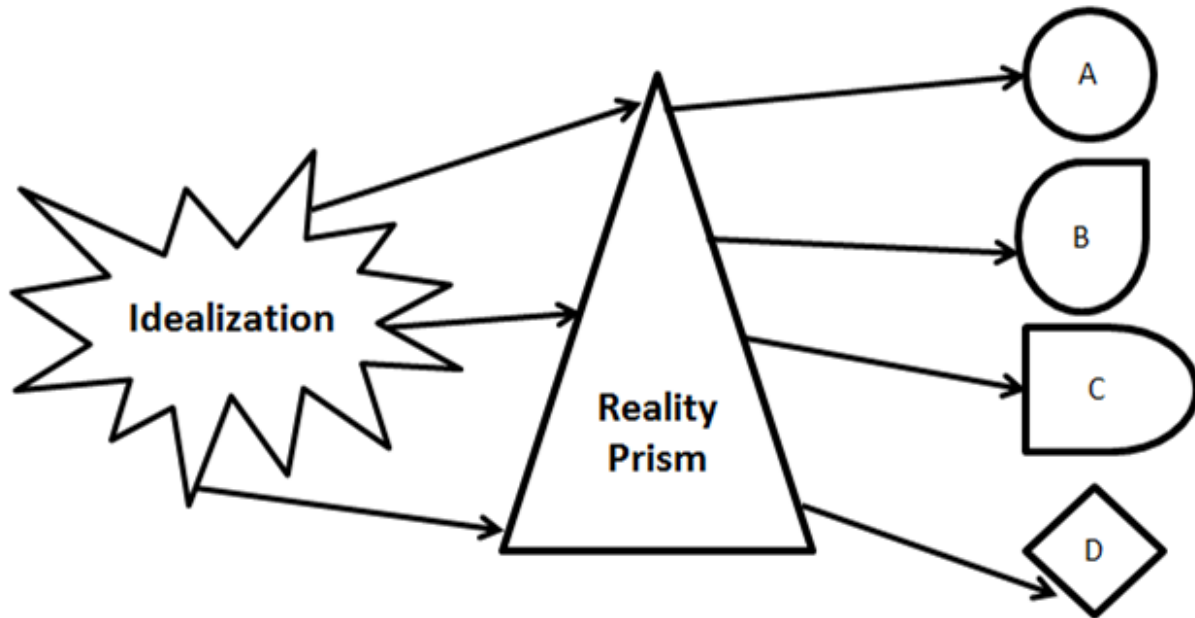
The diversity of the actualization process is unveiled as we compare the appearance of events after introducing machine and mechanization in different social settings. As we know the social bonds and structures transform across settings, one idealization generate an unlimited

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<sup>5</sup> In Chapter 6 of same study you can read how the use of agricultural implements have been twisted as an addition in their traditional use like shifting people in the area in marriages and deaths in section 5.17. Similarly in Pakistan Vespa scooter transformation in to rickshaws motorcycles in to automobile carts (Quin-qui) are best examples of such translations by users according to their needs

number of actualizations and probabilities. Further, with the same optics personification, it has been concluded that idealization passes through lens of reality, produces almost same results either concrete or abstract, but is the distortion of idealization. The reality by Plato as well as by others like Billig and Wittgenstein is a lens, in front presenting roughly, what was behind it. But it has been conceived in the study as discussed in section Source of Drinking Water and Water for Daily Use 5.17 page no 155, that reality is not the lens, instead it behaves as prism. Same as when sunlight passes through prism it splits into seven colors offering more options rather than just white. It is also interesting that white in its internal construct is made up of all these colors. It also offers the possibility of more combinations by mixing these colors, so indefinite opportunity platter is served. This reality as prism has been presented. In this conceptual diagram, you can see how reality acts as prism and splits idealization into number of actualizations, offering unlimited translation on layers of previous events.

**Figure 2-3: Prismic opportunities of actualizations of Mechanization**



#### **2.14.5 Adjustment of Machines in a System**

Machines when introduced in a system pass through a number of actualization processes. It is also difficult to assess the impact of changes occurring through machines in diverse process settings. At the simplest level, the social system may assimilate the machines and exhibit incremental change. More generally, one change in the system may trigger other changes, so that there is a cascade of connected changes. Sometimes the new social practices called for by the machines are not tuned with existing social values and can lead to a change in values. In other cases, disagreement can lead to non-standard uses, or resistance to use the machines expressed through token use or non-use.

In practice, it may be difficult to say exactly which type of change is occurring, and any real example is likely to involve a mixture of these types.



## Chapter 3

### Literature Review Part 1

#### 3.1 Role Formation and Changing Role of Women

##### 3.1.1 Concept of Role

From structural point of view, roles are culturally identified and narrated norms, rights, duties, expectations, and standards for behavior related with a given social position (Linton 1945). It is well understood that for every position in society there is set role. Social status of any individual is associated with his/her range of roles in the social interaction setup (Merton 1957). One's social position was seen as influencing one's behaviors. In addition, statuses such as gender, ethnicity, sexual orientation and social class also shape roles (Lopata 1991). An actor is assigned the position to perform the role, characterized by certain actions and qualities.

The independent or responsive behavior is considered as role performance. The role performance depends on;

1. Attached universal apprehensions or traits to role for its performance.
2. Inter and intra responsiveness of actor in role system.
3. Reciprocation by actors to situational created roles.
4. Inbuilt or developed, common and particular talents.
5. Equating the self traits and the expectations related to role, and supportive characteristics of others.

Two features related to role are very important:

- a. Apprehensions rested in by specific people related to the role performer about the role and position, and

- b. Performance of individual who voluntarily or involuntarily were assigned certain positions or roles.

It is absolute that for survival in society, that individual in order to survive as a member of society, a person must be able to locate himself accurately in the role structure. Since roles are structured in a reciprocal manner, the answers to questions of self can be achieved through locating the position of the other (Theodore R. Sarbin 1979).

The process of absorbing into culture is mainly an effort to understand the apprehensions related to role for specific positions in the social web. In vague and engineered situations, the performer may affect the role of the other by self-assuming other's role as his role. The precision with which an individual explains the characteristics of others' role is actually, how he reciprocates him with that role.

Once a person clearly locates the position of the others on the basis of clues, the possible choice of role behavior is reduced from near infinity to a small number. These may be called role demands, the demands for specific role enactment. These obligations underneath perform the role of counselor, guiding the actor for performing the role in perspective of cultural norms. Deviation from such norms commonly results in heavy punishments and sanctions for the violation.

Actually, we are performing social roles in our chronological life. Park noted that every individual is always and everywhere, intentionally or unintentionally and unconsciously or consciously, playing roles. We are recognized by our role in web of social life; we even identify our self in these roles. Role provides a comprehensive pattern for behavior and attitudes. Socially role is identified as an entity (Turner 1968).

Anthropologists, like Sarbin (1950) and Tomasello (1999), recognize that the concrete behavior of individuals is a result of both socially enforced rules and values, and individual temperament, whether genetic, unconscious, or conscious. Some researchers emphasize the reality of social system, while the others lay stress on ideological and philosophical orientations and arrangement.

Different role demands lead to different outcomes. Gough (1948), and Sarbin (1950), among others, have presented arguments for the existence of a skill, aptitude or competence that facilitate role enactment. Assuming on the basis of experiences acquired early in lifetime, this role taking also requires aptitudes such as mechanical, clerical, and drawing aptitudes.

An individual's talent and creativity result in changing values and roles. We all know that with time culture and society change, but question of time to change, speed of change and nature of change needs to be determined and justified. Such debates are particularly more important when talking of gender based systems.

Individuals in society are classified on the basis of gender. A gender role is a set of perceived behavioral norms, associated particularly with males or females, in a given social group or system. It can be a form of division of labor by gender. Gender is one segment of the gender/sex system, which points to agreement through which biological sexuality of members in society is transformed into brands of human functioning serving to satisfy human needs (Reiter 1975). All societies, to a definite extent have gender/sex system, no doubt the functioning of such parts in system differ from social system to social system.

### 3.1.2 Role Transformation

Turner in 1990, accepted that no matter how strictly we check roles, they are not stagnant and static, roles of an individual changes (Turner 1990). Crystallization of role appears when they are universally accepted and are very important for those who are sharing culture<sup>6</sup> like; people living in *Diaspora* carry cultural traits from the sphere, which they were living. It is not the case in which people migrate from one land to other it can even be observed in cases when people move from one strata of social life to other. Even, when women got married and changed their residence and role is added as wife as, mother, daughter and sister in law. They were found appreciating their mother's house and trying to create the same. It is important to add here that it is not only the wife who is found sharing their previous sphere; husband is also found coating their mother and place her as role model. However, all roles and performances are facing equal degree of crystallization, and those heavily crystallized roles experience de-crystallization overtime. In 1960's, Friedan work showed that past roles may be a source of stigma in changing social and economic conditions (Friedan 2001). Cottrell (1942) brought into light facts about the clarity of roles. As roles change, there is a shift in the clarity of roles. Every role has clearly defined expectations, which are not clear or blunt. Any change in role triggers change in related expectations. New roles can create distraction and are than well come with confusion and uncertainty. For example, daughters' or sisters' marriage can be delayed in social and economic constrain. These delay the role transformations (Blossfeld and Huinink 1991).

Performance of more roles in single time results in negative as well as positive outcomes. This is termed as Role over loading, this and role conflict shape role strain (Goode 1960). Different abnormalities and negative psychological and physical problems are generated as result of role strain. In many cultures, especially in Pacific Asia women experienced stress, distress,

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<sup>6</sup> See details of role crystallization in role theory of Turner, who borrowed it from Nye 1974.

and other abnormal behaviors as a result of burden of work and family roles (Aryeel 1993, Lai 1995, Matsui 1995). Conflict strata differ in various cultures as difference in impression and conception of gendered roles and the related duration of time given to work and domestic roles (Moore 1995).

A person usually occupies multiple positions. Passing his/her life span, individual accept or leave certain roles in course of life (Burr 1972). For example a man can be a father, a professor, and a scientist. Women in Pakistani rural society (Tapiali village) are playing the role of a daughter and a sister. After marriage, her roles are added as a wife and a daughter in law, etc. Then she becomes a mother. In the course of her life, she may cease to be a daughter after the death of her parents. Similarly, after the death of siblings, her role as a sister will disappear and so on. She/he, therefore, has to enact his/her role at macrocosmic social system as well as on a concurrent position in microcosmic personal role systems (Sarbin 1979).

In Tapiali, it was found that people participating in different role performances have experienced less strain. This act also reduced their depression and self-satisfaction was achieved, because multiple role performances gave expression to their inner personality. It was among multiple roles that individuals were able to express individuality and act autonomously in accordance with or in opposition to normative expectations (Coser 1975; Jetten and Postmes 2006). Thus, multiple roles were important for the development of personality and intellect. Verbrugge in his series of studies about women mental and physical health performing multiple roles found that women in multiple roles were reported with better psychological and physical health as compared with those having limited roles (Verbrugge 1983, 1986 and 1989).

Moen (1992, 1997) while working with others has examined the potential positive and negative consequences for women of combining paid work and family roles. She concluded that

females performing role of mothers and housekeepers inside the house and workers outside managed smoothly if conditions at both places favored them. Any favor withdrawn in any sphere will change or strain her role (Moen and Wethington 1992) (Moen and Erickson 1997).

### **3.1.3 Exciting Role Metamorphosis**

Anthropologically status of women and man are with respect to the rights and duties reflected in customs and norms of the society. Gender roles were conventionally grouped into strictly womanish and mannish gender roles, though these roles have diversified today into many different acceptable male or female gender roles. However, gender role norms vary significantly from one country to another, from one culture to another, and even within a country or culture. Every social group has a distinct gender norm to which a person belongs to or the sub-culture with which s/he identifies cultural identity. Especially in oriental history, Eunuchs can be quoted as the case, in which they had a different gender role because of the difference in their genetic biological expression<sup>7</sup>

Marx and Engels see the subordination of women in their own perspective of classes. For them women as a class are subordinated to other class of males in the production system, and linked it to the emergence of private property. Women of lower class are always working but still do not enjoy high status in society. It is not participation in economic activity but freedom to choose the type of work that determines the status of woman in society.

However, there will be differences within country or social group between individual women as determined by social background, class, education, ethnicity and age. In case of married women, apprehensions and experiences also differ with the status of husband and surroundings (McIlwaine 1995). Malinowski defines the status of women after taking into

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<sup>7</sup> Also see this work for further clearance of concepts, Sell (2001).

consideration all mutual duties between the sexes and safeguard for each, against the high handedness of others.

### **3.1.4 Evolution of Gender Roles**

After extensive literature review, close personal observation and being member of a rural society, the researcher came across a number of examples, which provided ample evidence that women of present generation are more oppressed and deprived as their control on resources has been reduced. Changes in socio-economic sphere in Tapiali were triggered by external stimulus of mechanization. The changing structure has changed the individual (women).

### **3.1.5 Talcott Parson's View of Gender Roles**

The process through which the individual learns and accepts roles is called socialization. Socialization makes us aware of standards required of an individual as a member of society. Socialization works by encouraging wanted and discouraging the unwanted behaviors. These desirable and undesirable behaviors act as sanctions by agencies of socialization such as the family, schools, and the communication medium. They make it clear to the individual that what behavioral norm s/he is expected to follow. Common role model for individual is his/her parents, elder brothers or sisters and teachers. In most of the cases, behavior is not the result of standards set by society for apprehensions related to assigned role. It has been observed that different forms of limitations also shape the required response and functioning related to role performance.

In most of conventional and developmental social systems, it is assumed duty of person to the person to choose how to represent the social system as its member. This process is not involuntary; the products may not be of any advantage to system or reverse to that. The degree of harm or no harm depends on the survival strategies of the individual, as well as the limit of

changes and alterations in natural behavior to adjust with behavioral standard of social system. Traveling in centuries shows the weakening of usual apprehensions and motivations of gender role. Social values of family, companions, pressure of peers, working place, etc, act as filter for socialization. Once individual consciously or unconsciously agree on gender roles, he also furnishes his acceptance for gender differences and willingness to show behavioral characteristics and norms considered as their responsibilities.

Taking change as action, we need actors to perform this action. Actors are playing their roles to bring or counter change. In their lives, people have to face different social roles and at times even in different social situations. Like Darwin evolution of species, social roles also pass through evolutionary stages. New roles are appearing and old roles are showing adoption or adaption or going extinct. Role behavior is determined by number of factors but can be identified as:

- a. Social content and situation is decided by the norms.
- b. Implicit and explicit apprehensions related to role.
- c. Social checks and incentives affect the behavior of role and performer.

These three identifications are utilized to measure and evaluate personal as well as others performance of behavior related to certain role. Popitz (1972) presented his explanation of social roles as behavioral norms considered as the code of conduct for the individual or the group of people expected to produce that specific role performance. Behavioral norms are a set of behavior that is usually used by the group members, in case of deviance followed by negative sanctions.



### **3.1.6 Talcott Parson's View of Gender Roles**

Parsons resented the nuclear family model in American family structure. At that particular time and space it was existing family structure. He developed a comparative picture of gender roles by drawing comparison between conventional and modern stand point about them. In his opinion females role was expressed in house, or more of nurturing. The functional representation of their role is, cooking, taking care of fuel and water, raising kids taking care of elderly and sick and keeping-up the family bonds and inter and intra relations (Rodman 1965). The male members in family are responsible for functions outside the house, such as supporting the family by providing monetary resources.

Gender roles presented in Parson's model shows polar standpoint. In reality such standpoint is hardly seen; real behavior of individuals is usually lies between the extreme poles. The most common 'model' followed in real life was the 'model of double burden'. In Tapiali, double burden of role ensured their productive control, independency and share in food nutrient provider. With mechanization, the economic input and output patterns changed. Transformation in the economic and social conditions of societies changed the role of women by reducing their control on resources. They were still working as invisible workers in very few households. This group was very small. Most of the females were forced out of farm production process totally or partially.

### **3.1.7 Role Negotiation**

Inter-actionist approach favors non-stagnant gender roles in which individuals are bargaining for the performance behavior of roles. Gender roles can affect all types of behavior right from selection of style and color to personal relations like choosing the mate or spouse, etc.

In 1980's with de Beauvoir's feminist works (Butler 1986, Bauer 2001, Jardine and Beauvoir 1979) and Foucault's reflections on sexuality, in cultural anthropology the idea emerged that there is difference between sex and gender, society must not confuse gender with sex. This view charms that sex can be different from biological sex. It means a person born as male by sex can perform the role of female by gender in society. In 1990, Connell in his research tried to search the connection between gender role and biology and reached at the conclusion that there is no connection between these (Connell 1990). His work faced rejection due to works in endocrinology. It was found that hormones were responsible for any behavior in individual. However, hormone levels vary, resulting in disorders. Baron-Cohen in 2005 found that the female brain was by engineering designed for empathy, while the male brain was by engineering set for understanding and building systems (Baron-Cohen 2005). Some researchers, such as Bruce Lipton, are of the view that neural synapses in early childhood were formed due to the environment in which child was placed and raised, so if parents were treating their child on gender, not the brain in fact mind would be engineered for gender actualization. On contrary David Reimer showing real world cases, showed that raising a child in a cross-sex role does not cause the child to necessarily adapt to that role.

Dr. Bem was of the view that person use gender as a managing stratification throughout his life. Acquired sex roles provide the base of such gendered stratification. In 1971, to measure the fitness of person in conventional role by grouping his/her personality as masculine, feminine, androgynous, or undifferentiated she created Bem Sex Role Inventory. She was of the view that by gender-schematic processing, an individual immediately unconsciously arranges traits and behaviors into masculine and feminine groups. Therefore, an individual processes information

and regulates his/her behavior on bases of definitions of femininity and masculinity provided by his/her culture (Lafky and Duffy 1996).

New trends of employment in modern societies showed that they are open for both male and female. They share similar occupations, jobs and responsibilities, and all are not concerned with their sex. Differences in physical strength and abilities vary within the same sex. Gender role can be exhibited in several forms of expression through language, clothing choice of work, choice of color etc.

### **3.1.8 Culture and Gender Roles**

In different cultures ideas of acceptable behavior varies accordingly. Similarly concept of gender vary among cultures and eras, although some aspects gather receive more acceptance than others. Connell described an interesting case, in his book *Men, Masculinities and Feminism*. He has found that behavior accepted in one may be not acceptable in another e.g. alcohol is accepted in non-Muslim societies, while it is prohibited in Islam.

In non-mechanized societies of Europe, medicine was considered as a male profession, while in Russia, it was thought as the domain of females. Cultural traditions play important role in deciding expectations from gender role.

### **3.1.9 Feminist View of Gender Roles**

Number of different studies and statistics show that no doubt the situation for women has improved during the last century; gender discrimination still is in rule. Women are paid less than man even performing same responsibilities. It is normal that they occupy lower ranking job positions than men and do most of the housekeeping work. There were a number of cases, in which female was earning more than male in the family but her role as subordinate partner in the family remained unchanged. When talking of double burden, it meant role performance in both

the formal and informal sectors of the economy. It is another debate whether an unpaid work in the farm to help the family was double burden or not. However, household chores in traditional rural set up were considered only the responsibility of females of house. When she was doing work on the family farm and was not paid, she was in fact saving monetary resources by giving her time and labor. This unpaid work was paying the whole family in the form of share and control over the produce. Her contribution outside the household was considered her power inside the house in proportion to the males of the family.

Most of the feminist are of the view that women oppression is rooted in traditional gender roles. They argue that gender role complement, promote and support patriarchy. The doctrine of scientific housekeeping by Becher in 1990's restricted women to their households and their participation was checked at spheres outside house. Their power was placed at upper level of their houses, which alienated them from public sphere. There was a clear divide in public and private spheres. They were made to give their views and perspectives at home; their inner self, their self-recognition was restricted to their homes only. This was the effort to make them work silently. Their economic participation was unpaid and they were made to safeguard shared resources at household level. Domestication of female was an effort to bring them to a level owned and possessed by male members of the house and made them private property.

After a long struggle, women were able to make changes in the role of traditional women. In conditions like war, women performed tasks, which were performed by males only. The same thing has happened in Tapiali village. Families whose males are working outside the village, their females were performing roles, which traditionally were not found appropriate for them e.g. going to bank, shopping for family.

### 3.2 Stratification of Gender Role

Blumberg (1991) has developed Gender Stratification Theory to highlight gender roles in society vis-à-vis economic power. Women oppression is inversely, related to their economic power. It means more economic power they generate, the more oppression will they face physically, politically and ideologically. The level of economic power generated by females is a positive and additive function of:

- a. Their ability to join the process of economic production,
- b. Their control on own production,
- c. Their ability to negotiate their labor value, this will be help them to exert influence at macro level.

The strategic indispensability of their economic activities, which, in turn, is a positive and additive function of:

1. Demand for their labor relative to supply,
2. Comparability of their productive labor with reproductive obligations and options,
3. Degree to which their labor was seen as important,
4. Their control on technical education,
5. The scale, level and size of organization in their work,
6. Their negotiation power with others, and
7. The level to which they can avoid labor competition,
8. Access to property by inheritance and actually controlling it.

It all depends on rules of,

- i. Inheritance,
- ii. Residence in kin allies,

iii. Favor in passing authority.

The success icon women's economic power is relative to that enjoyed by men. Such women's control of their own lives will be for,

- a) Freedom of decision to reproduce,
- b) Freedom in decision of marriage and divorce,
- c) Duties and rights in household,
- d) Freedom in selection of education and career,

Patriarchy was the system, which oppresses women through its social, economic and political institutions. Throughout history, men have had greater power in both the public and private spheres. To maintain this power, men have created boundaries and obstacles for women, thus making it harder for women to hold power. There was an unequal access to power.

Blumberg (1991) made it a point that during the period of transition, when women's economic power in comparison to men was improving, men perceived these changes as a threat and challenge to their control. They repress physically and politically women's efforts to gain equal power. Increase in women economic power will ensures their power at political level, making policies favoring females.

Getting a share in inheritance is not important as long as she does not get control on property. In Tapiali village, access to land and property handling was the source of economic power to females. Male control on resources increased gender stratification and women control on resources reduced her economic dependence.

Further talking about the gender stratification Chafetz in 1990 expressed that two types of forces maintain gender stratification:

1. Coercive , and

## 2. Voluntary acts by individuals.

These are related to macro level division of labor in society. She is of the view that work allocated based on gender will discriminate against women and lead to accumulation of resources favoring males. This material resource advantage will be exhibited in difference in power at micro level (Chafetz 1990).

Traditionally and historically, there was a macro-level division of labor that favored men, this system gave men power advantages for interpersonal demands and, as a result, gave them advantage to withdraw their to contribute to family and domestic work. Wives thus became burdened with domestic chores. Even when they worked, it became increasingly difficult for them to compete with men for resource-generating work outside the home, a situation that sustained the macro-level gendered division of labor. Males, therefore, got societal positions of power. This situation favored males in all respects outside the house. They developed an attitude and behavior-favoring males as compared to females.

These differences trickle down to micro level. The control and economic power help males to enforce their ideology, choice and situation and regulate power at micro level. This process has been made painful and bitter because men controlled elite positions in the society at large and can, therefore, perpetuate definitions and perceptions that favor them.

These definitions typically lead to the devaluation of work that women perform inside and outside the domestic spheres. For example, wife's household chores and other care raking work in house is not paid and hence, undervalued, whereas there are specific female-typical work for women, such as secretary, computer key punch operators, baby-sitting, all such jobs are underpaid because they were not valued very highly. It is conceived that family is the source of engenderment. Forces of socialization, along with voluntary acts of individuals enforce and

support gendered division of labor at macro-level. Culturally defined differences between genders were reproduced at macro and micro level encountered between men and women.

As for Chafetz, once we identify the forces ensuring stratification, it is easy to target these for change. For her change in role of women occurs when change address:

1. Gender division of labor.
2. Resource power of man.
3. Social attitude, ideologies, norms and stereotypes.
4. The processes of gendering that differentiate the orientation, expectations, and behaviors of men and women.

Introducing and maintaining gender stratification depends on the coercive power of males, this increase by

- a. Gendered division of labor at macro level.
- b. Material resource advantages.
- c. Using material resources at household level to oppress and comply females.

Result of this can be seen as loss of freedom in reproductive activities and burden in household chores making them busy at micro-level. Thus their ability to compete with males at macro level is also checked (Collins and Chafetz 1993).

This can be seen in Tapiali village where mechanization (farm machines) has given total control of “produce” to males, giving them control over material resources like the money received after selling of crop or wages if working in non-farming sector. Women were domesticated as out of 789 females only 30 females were working in the formal sector and 173 as invisible workers on farms.



Heavy inputs in mechanization forced males to sell maximum produce to get optimum output. The received money was in control of males giving them power at macro level because of control on material resources. Women at domestic level were made busy at home in the name of comfortable life (by providing items T.V, home gadgets, semi-prepared food). This made them restricted to domestic farms as they were no more working in the family fields (except 173 female farm workers). The macro-level and micro-level resource advantages of men translates into their control of elite positions in the society at large, which, in turn, leads to favor in political and other spheres in distribution of opportunities and organizing a hierarchy of distribution between men and women.

Chafetz's process of change in role is always external to the system, no matter what its duration is. Forces of change for her are technological changes, demographic shifts in age, composition of population, changes in the structure of the economy, and the geopolitical forces like war and migration exerting pressures on the system of gender inequality. For ease and clarity as well as in congruence with the existing research, only technological and economic variables will be considered. Chafetz conceptualizes these as "unintentional change processes," and her argument runs as follows:

### **3.2.1 Technological Variables**

Conventionally technology is regarded as a mediator between culture and environment, here environment is meant both physical and non-physical. Work of Bruce and Peyton (1993) reflects that mechanization is a process, which shows situation-specific adjustments and compromises between modern and traditional ways of performing things.

Becher in his work mentioned that every culture has its own characteristics (Becher 1990). The identity of different elements of culture cannot be neglected; their combined identity

gives rise to a distinct culture. Therefore, any change in the overall system also changes its elements and change in elements will change the system. Same as the duality concept given by Giddens, that one is dependent on two and two on one. When talking about change, it may be negative or positive, depending on the condition in a particular system or its level of acceptance or rejection.

Most of the time changes in culture or its element are regarded as degree of change, the resistance. It is referred to as, ability of system to absorb disturbance before changing its own structure, or trigger the auto-recovery of system following disturbance (Adger 2000; Ulanowicz and Westra 2000). This trigger or stimulus is actually feedback mechanism. Berkes and Davidson-Hunt (2003) grouped degree of such change to make it understandable:

1. Minor adjustments while keeping original protocols of function and structure,
2. Degree to which system can readjust, and
3. Enhance and develop the ability or degree of adaptation and learning.

It is very clear that change in ecological system is integral to the functioning of social systems (Holling *et al.*, 1998) (Kelly and Adger 2000; Adger 2003). Replacement of human labor is called mechanization. This can be a process of satisfying (a) the desire of bodily comfort, (b) control on material (c) exhibition of power to produce more with little effort (Levinson *et al.*, 1996). When a machine is used to produce output, it takes the form of technology and this process is called mechanization. Traditionally, technology is considered as advocate between culture and environment (in both physical and non-physical sense). Mechanization also envelope essential disciplines, like the formation, genesis, adjustment, agglomeration and control of apparatus and machines. It includes the whole organization of material and non-material or tangible and intangible techno-facts. It is also closely associated with regularized needs and

aspiration in-view that mechanization serves (Hannay 1981; Mitcham 1994; Winner 1997). These researchers also restrict the definition of mechanization to material artifacts, their human production, and their purposeful use.

Lantz (1999) and Durbin (1984) however, interpret mechanization in wide range of aspects along the lines of an old and well-established tradition. Agricultural mechanization cling and envelope the use of tools and machines for developing agricultural land, crop yield, harvesting, storing the produce and on-farm processing (Durbin 1984; Lantz 1999). It contains three main power sources: human, animal, and mechanical. The construction, dispersion, distribution, improvement, conservation, administration and application of agricultural gadgets, equipment and machines are crowned under this drill and control with regard to the contribution of inputs in mechanization for the farmer in powerful, potent and in most of the cases, reasons for mechanization are economic (Rijk 1999). Convincing manner: The term mechanization is, therefore, used to cloak all strata of mechanization and their dimensions of elegance (Rijk 1999) (Jayasuriya *et al.*, 1999).

This is an established fact that mechanization brings change in culture. This may be either total or incremental transformation or restructuring (Hazell and Haddad 2001). Lawrence sees restructuring as a process of change in which people (users) are being forced to make fundamental changes in their lives, which can have substantial impact on their livelihoods, family, and even health (Lawrence and Vanclay 1994).

Culture varies over time as a result of human actions. In some cases, this is the direct result of planning and purpose; in others, it is indirect, unanticipated and unintended. Intentional changes in laws, styles, or organizational structures come about because of concerted efforts on the part of the people to bring them to reality (Smelser 1962; Carneiro 1973, Weinstein 2005).

According to Sztompka such type of changes is a rule today. Any change in formal government, economic structures, or any other institutional structures is specifically charged as a response to the changing functions of society (Sztompka 2000). Purpose is often a matter of degree to satisfy the need to change. It is very important to address needs on priority and distinguish between need and desire. At one end, we find changes that are a result of explicit intentions and on the other are implicit intentions favoring change. Machines are very important example of such changes. When introduced to the system, they act as explicit intentions. However, if invented or innovated within the system, they serve the implicit intentions<sup>8</sup>.

Since the times of Aristotle, four elements are considered as the main constituents of mechanization:

1. The “stuff” or elements, out of which these concrete machines are made,
2. The concrete or abstract shape given to the used material to form machine,
3. The purpose for which it has been designed, and
4. Impact on human actions after using these produced material facts in form of machines (Heidegger 1962).

It is primarily the fourth aspect with which we are concerned here. Other areas have also been discussed during the course of discussion.

History has shown that the process of mechanization is driven by changes in relative prices, in particular with respect to the cost of labor vis-à-vis the cost of capital. The driving force behind mechanization in agriculture is the farmer's need and effort to increase productivity and net income.

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<sup>8</sup> It should be kept in mind that a person who is developing a machine, the one who is promoting its use, the one who is using it, and the one who provides material support for its development are different people, and their purpose and benefits may at times be at divergence.

Mechanization requires change of mindset to use machines efficiently and effectively. Change is, therefore, prevalent right from the domestic to farm-life and from the public to private spheres. Change in this case is a structural adjustment, which is an inevitable process, a kind of cleansing approved by the union of users (Gow 1996; Bjornlund and McKay 1999). Mechanization reflects situation specific compromises between the old and the new ways of doing things (Bruce 1993, Bruce 1997; Bruce and Hogan 1998).

Once mechanization is introduced or produced in a culture, it acts as a stimulus and triggers change. Culture experiencing change acts as an “organismic whole” just like Bronslaw Malinowski’s concept of culture. This culture is made-up of different parts and these parts are independent units in their functions, but their function assures smooth running of the grand body of system. It is very interesting to note that any change in one unit will affect all other units working for the same “whole”. The structural adjustments will be made to absorb or adjust the change.

The sociological and anthropological understanding of societal development relies heavily on the work of Gerhard Lenski who outlined some of the general arranging structures in human societies as:

1. Basic means of provisions, and
2. Hierarchical arrangement.

Different societies are at different stages of development and this development is not in fixed series. Some societies may also jump stages as a result of the introduction of mechanization from alien societies and culture. Some pastoralist societies also engage in some measure of horticultural food production. Industrial societies have agrarian components (Price 2000).

Different societies have different to overlapping economic and social structures. This happens because of accelerated or retarded socio-economic developments e.g. settled gathers have social and economic hierarchy, which is characteristic of agrarian and industrial society. Similarly, industrial societies also have some components of agrarian societies (Diamond 1998). However, there were certain features, which were present in all societies. These are control on food, sexual division of labor and gender partiality, to name a few.

Modern development has been superficially, conceptualized as aggregate of industrial production technology as Marxian capitalism dignified mechanization as main player in economic development. As Castells (2000) described production as action of people on nature to get output the “product”. This product is not than evenly consumed, the surplus is than stocked or accumulated for the purpose to control supply, or to generate class of supplier. In short, it gives power to the class of investors and on first hand create hierarchy or classes in society. This division of class based, society is as producer, supplier and consumer (Marx and Engels 1906, Harver 1982, 2006). On one side, it seems that the relation in between classes and among class interconnects society though divided in classes. On other side, it also gives birth to “alienation”. Marx first introduced this concept in his famous work on capitalism presented as *Das Kapital* in 1867 (Marx 1999). According to this, producers are alienated from the produce, as they have to sell it to get their input. This transforms the produce by their actions and efforts in to commodity. Buyer and suppliers take it as product or commodity and they do not have affection attached to it as they have not participated in its creation process. This “system” of alienation is furnishing industrial capitalism. As mechanization of agriculture has been marked and evaluated by economic criteria. It is clear that not only these but all social systems are vulnerable to overall

effects of modern development (Halpern and Academic Council on the United Nations 1993); United Nation Environmental program 2000; International Panel on Climate Change 2007).

The introductions of machines that enable economic and social change have all together changed the existing political-economic-social landscape as well as land itself. It also changed health, safety and overall community life and well-being (Blaikie and Brookfield 1987; Shiva 1992; Sachs 2005).

Amartya Sen Nobel Laureate name development as “enhancement of freedom” but this enhancement of freedom should be within law so, that freedom of one may not hit other segment in system (Sen 2000). Like many other things, mechanization has made possible the one click transfer and sharing of information, enhanced communication along the globe and re-designed basic life functions and processes. The form of knowledge, building machines and generating mechanization, while apparently transient or short lived, now comprises a huge share of finished products and services. In older economies, the share of mechanized “goods” was less and their small contribution showed resistance in change. The resistance was especially from those who can use and control such forms of knowledge, and latter from machines and mechanization.

Changes due to mechanization have important effects on gender stratification. Mechanization can alter, Chafetz argues, the workforce requirements, the mobility required, and the capacity to work outside home and its domestic responsibilities. The greater the amount of change along these variables, the greater will be the effects of mechanization on gender stratification. In general, when machines reduce the labor requirements outside home (which, as Chafetz emphasizes, were typically exaggerated by males anyway), less physical mobility was required. When the obligations of child rearing and household can be overcome by mechanization, the opportunities for women will increase, thereby reducing the effects of the

gendered division of labor. Conversely, when strength requirements, mobility, and domestic burdens were all high, or perceived to be so by virtue of gender definitions, then opportunities for women were low. Moreover, mechanical change that renders obsolete the skills of any gender, whether male or female, will work against women because men will enjoy a competitive advantage in seeking new resource-gathering work roles (Turner, 2003).

### **3.2.2 Economic Variables**

Structural changes in the economy, typically driven by both demographic and technological transformations, will also influence gender stratification. An expanding economy will help women gain access to resource-gathering work roles, as long as men are fully employed and vice versa. Deskilling of jobs was an important form of economic change, as technologies (particularly information systems but mechanical ones as well) are used to perform iterative tasks that once required manual skills. Because of men's favored position of power in the division of labor, their jobs are enjoying the favor of safe guard from deskilling, while women at lower level of favors are open to deskilling of jobs.

No doubt, forces inducing change are unintentional but the change in gender stratification is most of the time intentional. Capitalist inducing division of labor and creating classes on the basis of resources in society can serve as an example. In this type of society, women are at a lower level of hierarchy because of minimum access to resources.

In Tapiali village, women access to resources (control on property, produce, jobs, access to credit, technology etc) has been greatly reduced. Even their mobility from farm to household has been checked. In this way her role has changed in the production chain in the village economy.



Confronting existing system of distribution and control on resources creates dilemmas. The loss of control on resources is actually broken of band between women and resource. This creates Durkheimian “Anomie” and women, unintentionally and without realizing the magnitude of loss, change their role from that of a producer to a less significant role of consumer.

Ideologies of the family were directly related to the invisibility of farm women. These are gendered in two ways:

1. Women are working in farm jobs as wives, mothers and widows. This shows that their entry is by specific kinship relations. Their position is defined primarily by spectacles of the 'sexual contract' which involves them little, if any, substantive stake in farm business or land assets (Pateman 1988). Men enter farming primarily through a structure of property inheritance organized through the male line. According to Whatmore (1993) males are considered as successors. Same was observed in Tapiali village, where all the population was Muslim. In Islam, women are entitled to share in inheritance. However, in the village, property in reality is not handed over to females. They are not involved in the property decisions.
2. Monetary and subsistence resources determine the domestic relations and inequalities in power in domestic sphere. As quoted from Folbre and Delphy in the work by Whatmore, (1993) that the discrimination and inequality encompasses unfair division of food between male and female members in house at meal times (Feather *et al.*, 2005) to legal authority over bank accounts, assets and income.

## Chapter 4

### Literature Review Part 2

#### 4.1 Mechanization

Mechanization is a process of using tools (machines) developed by technique. Therefore, the work performed by machines exhibits mechanization and the use of machines to perform work efficiently is mechanization (Tresch 2007).

The main impact of the idea of mechanization, in both its positivist and liberal versions, comes from the assumption that all social structures and systems of social control are crumbling. Mechanized societies no longer can be defined by absolute principles, values, and norms but instead are denoted by change, the triumph of instrumental rationality. Positivists believed that these evolutionary changes would lead to a scientific society governed by political engineers, while liberals predicted that society would be transformed into a market in which all goods and services would be priced according to their utility (Touraine 2003a).

##### 4.1.1 Doctrine of Mechanization

Conceptions of mechanization differ in the way it has been emphasized as one particular element. Those who:

- a. Highlight tangibility, place mechanization into a separate sphere of ontology, considering it as material inventions and position it in group of "hardware" devices.
- b. Emphasize its instrumental form; try to dilute it to a bear function in a fixed means-end relation.
- c. Spotlighting the finality, have to manage with problems of technological uncertainty and analytical flexibility.

- d. Giving importance and weight to "man the tool-maker," and shifting the importance of role as material agency or resistances in the subject-object relation.

Every philosopher of mechanization who follows this strategy of sharpening gets more and more accused of being ontological, functionalist, teleological, or anthropomorphic.

It would produce an endless debate to dig deeper into the meaning of mechanization. According to Werner it is a more rational approach to look in to history of logic to develop idea of mechanization. Mechanization has always been defined in terms of differences in relation to something, at first place with nature and life, then with culture and lastly with society (Rammert 1999). In each case, one considers various ontological spheres or ample and important qualities. These assumptions were confronted with more and more problems, like any ontological or substantial thinking. But even if one uses these differences as merely analytical ones, they seem to be unsuited to catch the character of contemporary technologies and mechanization and the emergence of "techno-mechanized-structures" in society (Bohem 1992, Rammert 1997).

Mechanization is also defined as a process of increasing differentiation of economic, political, and cultural subsystems. However, the idea of society gained a prime importance during the long period that correlated to specific development of modernity, when economy, politics, and culture were still closely interrelated. It banished the power of feudal class and civil society helped promote circulation of goods and services. Government promoted the bond between people and state.

Theory of mechanization must be constructed in a manner to avoid the fallacies of essentialism and constructivism, of subjectivism and objectivism. Werner argues for a relational and pragmatic strategy, which centers around the processes of mechanization and the practices to

institutionalize differences by inscribing particular forms within a specific environment (Rammert 1999).

The idea of a national state as a unifying principle, at a higher level of mechanization, was replaced by the idea of capitalism, because the central agent of social change was no longer the national state but the bourgeoisie. The concept of capitalism was not a purely economic one because it identifies the economic structure with the process of global change. This identification supposes the existence of strong links between "civil society" and the state, between economy and politics. The idea of society as a combination of the national state and capitalism was an effort to link what the process of mechanization tends to separate economic activity, political and military power and cultural values (Vahabzadeh 2003) (Touraine 2003b).

Question arises for the relation shaping mechanization. Commonly the instrumental relation between means and ends (source and product) is stressed in the mainstream philosophy of mechanization. The explanations presuppose that there occur a pre-fixed sequence of relations or that the relations were clearly distinct. However, the contingency and the complexity of modern mechanization no longer allow us to hold these assumptions. This is the reason why some side streams in the philosophy of mechanization were re-structured that approved the process view of mechanization. These views were preferred and got better status because the machines were in a regular process of reconstruction, and always were considered as clear and concrete constellations. This concept of continuous reconstruction of machine is supported by Giddens's (1984) structuration theory, where the agent (man) and structure (machine) were produced and reproduced over time (Rose 1999).

## **4.2 Classical Views on Mechanization**

### **4.2.1 Weber's Views on Mechanization**

Weber was concerned about changes rising from mechanization, rationalization and bureaucratization of society affecting individuals and their happiness. According to Weber, society of the 19<sup>th</sup> century was driven by the passage of rational ideas into culture. These rational ideas transformed society into a bureaucratic one. Bureaucracy was considered as an organizational or institutional management channel rationally rooted in legal authority. Weber believed that bureaucracy was the most logical and balanced form of managing the society. As he explained rationalization as the governing force of society, bureaucracy would increase until it would become almost compatible with society.

Weber viewed this as a depressing result that would influence individuals' happiness, as they would be compelled to live in a highly rational society with strict rules and norms without the possibility of changing it. Because Weber could not conceive other forces affecting the ultimate direction of society, breeches being temporary mistakes into non-bureaucracy arouse by leaders with magnetic personality, he saw no escape from the iron cage of rationality.

### **4.2.2 Marx's Views on Mechanization**

Marx saw mechanization of society as a combination of self-realization and self-actualization catalyzed by meaningful work to bring happiness (self-satisfaction) to individuals. Those involved in meaningful work must own the product of their work and be independent in deciding the fate of produce. In contrast with capitalist society, where one group in capitalist societies “produce”, while another group controls the “produce” and the one controlling the “produce” forms a segregated class rich society. Workers themselves can bring change, reshaping the social exchange relationship resulting in society with culture of free development for all in free

conditions. According to Toynbee (1969), in decaying cultures, progressive “disenfranchization” or depriving one from power and control, results in decreasing sincerity providing various opportunities to change. Marx saw capitalism as leadingly producing increasingly unhappy individuals. As these individuals engaged in production would be alienated from the results of their production and therefore, would not know the worth of their talent and self. Under the umbrella of capitalism along with the alienation from the results of production, the working class was also alienated from each other under capitalism. Capitalists alienate the workers from each other by forcing them to compete for limited job opportunities compounding the unhappiness of the worker<sup>9</sup>.

### **4.2.3 Durkheim’s Views on Mechanization**

Changes in society resulting from mechanization bring unhappiness according to Durkheim. For him, an important ingredient of social life is “social solidarity” which can actually be taken as a “sense of community”. Decrease or increase in social solidarity results in change. Decrease in social solidarity breaks up internal bonds within the system. Similarly increase in solidarity results in chaos “anomie”. Durkheim was of the view that individualism was working against moral order, people are transforming like detached entities like atoms moving in space. The only thing that could hold people together was the imposition of order and coherence of the state (Kivisto 2004).

Durkheim opined that social solidarity in pre-industrial societies was asserted by a mechanistic sense of community and religious bonds. People had little specialization. They were happy as no differentiation found its way. In most of the cases, they even shared the same

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<sup>9</sup> Class struggles in France 1848-50, Marx, January - October 1850 for the *Neue Rheinische Zeitung* Revue; Published as a booklet by Engels in 1895; Source: Selected Works, Vol. 1, Progress Publishers, Moscow 1969; Transcribed by Louis Proyect Marx (1969). Class struggles in France 1848-50, Progress Publishers. Vol. 1.

religion. In mechanized societies, specialization has become a norm. Compartmentalization of life is common in mechanized societies. In pre-industrial societies, social solidarity was maintained by dependence and similarity. While in a mechanized society, interdependence of specialist ensures social solidarity.

Solidarity was commonly associated with political socialism, considered as the driving force behind an ideal classless workforce. Foundational demands of solidarity vary between societies. In simple societies, it may be primarily revolving around kinship and shared values. In societies with increasing complexity, there are various theories contributing to the idea and sense of social solidarity. Durkheim said that social solidarity<sup>10</sup> varies with types of society. As the part of his theory, he introduced the terms "mechanical" and "organic solidarity" in 1893 in his work (Lukes 1973).

#### **4.2.3.1 Mechanical Solidarity**

In a society presenting mechanical solidarity, its bonding and amalgamation results from the homogeneity of members, individuals sense connection through performing same type of task, educational and religious training, and lifestyle. Mechanical solidarity generally works in "traditional" and small-scale societies.

The ties and correlation of mechanical solidarity were rested on, "a more or less organized totality of beliefs and sentiments common to all the members of the group". This gave way in industrial society to potential new forces that were grouped by growing complexity and differentiation, an increased dependence on society and simultaneously, a growing level of individual power (Lukes 1973).

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<sup>10</sup> Solidarity is the amalgamation, and degree and type of combination, shaped by society or group with people and their surroundings. It refers to the bonds in a society called social relations that link people to one another (1973). Collins Dictionary of Sociology: p621

#### **4.2.3.2 Organic Solidarity**

Organic solidarity results from the increased dependence of structures due to specialization of work and the growing intra and inter- support between members in society. Organic here is pointing to the interdependence of the societal segments. Table 3.1 below shows the comparison of organic and mechanical solidarity characteristics, this table has been borrowed from the work of S. Lukes presented in Collins dictionary (Lukes 1973).



**Table 3.1 Characteristics of Mechanical and Organic Solidarity**

<b>Feature</b>	<b>Mechanical solidarity</b>	<b>Organic solidarity</b>
<b>Morphological (structural) basis</b>	Based on resemblances (predominant in less advanced societies). Segmental type (first clan-based, later territorial). Little interdependence (social bonds relatively weak). Relatively low volume of population Relatively low material and moral density.	Based on division of labor (predominately in more advanced societies). Organized type (fusion of markets and growth of cities). Much interdependency (social bonds relatively strong). Relatively high volume of population Relatively high material and moral density.
<b>Types of norms (typified by law)</b>	Rules with repressive sanctions. Prevalence of penal law.	Rules with restitutive sanctions. Prevalence of cooperative law (civil, commercial, procedural, administrative and constitutional law).
<b>Formal features of conscience collective</b>	High volume. High intensity. High determinateness. Collective authority absolute.	Low volume Low intensity Low determinateness More room for individual initiative and reflection.
<b>Content of conscience collective</b>	Highly religious. Transcendental (superior to human interests and beyond discussion). Attaching supreme value to society and interests of society as a whole. Concrete and specific.	Increasingly secular Human-orientated (concerned with human interests and open to discussion). Attaching supreme value to individual dignity, equality of opportunity, work ethic and social justice. Abstract and general

### **4.3 Mechanism and Mechanics, Rapport Forming Mechanization**

The idea of Mechanization cannot be evolved by marking mechanization as material, artificial and instrumental (Rammert 1999). In fact, mechanization is not only assembling of material, manmade artifacts or means-end affiliations, it is also specifically link to the world making machines. It was discovered that the same link is developed which exists between the function performed by language and function served by mechanization (Cassirer 1985, Hoel 2011). Both of these build reality with the help of hypothetical thinking; communicative reality is built by language. In the same manner, mechanization with the help of effective and potent means raises material reality. This has made mechanization as magic in life. However, the technique of magic is different from the techniques of machine, in the background of casual relations and necessary connections ideas. From this point onwards in time, the course of machine development included instrumental barriers from other meanings and connotations, as every society has its own implicit and explicit structural interpretations, the apotheosis of the world and the summarization of aspired effects from non-aspired ones in a black box.

Tieszen has strongly criticized modern science and mechanization. Deriving logical formula and using it technically and scientifically in “Mechanism” is just following rules without their real understanding; following methods without realizing the sense of procedure (Tieszen 2002). Edmond diagnosed a great divide between a physicalist objectivism and a transcendental subjectivism. He presented his views as mechanism developed, increased efficiency and reserved resources, but at the expense of meaningfulness. This pathological form of mechanization turns reality into a resource for possible worlds (Tieszen 2002). Blumberg (1991) also pointed out the ambiguity of mechanism. New world is created with a risk of alienation from the existing world. Blumberg, unlike Husserl considered thinking as part of mechanism (Campe *et al.*, 2000).

## **4.4 Rise of Mechanization**

It is very important to make it clear in mind that we want to mechanize the humanity, or we want to save humanity for the coming times in human society. At this vertex, we have to consider humanization of mechanization and concentrate our efforts in horizontally in same typological dimensions of mechanization in multi dimensions of society. We must think logically in sequence to search some solid points from which we can begin metaphysically a humanization of technology<sup>11</sup>. We must go through the history of technology with the approach of axiom or principles of technology. In this perspective, we can divide the history of mechanization in to five stages or periods. The following are the stages of mechanization:

### **4.4.1 Beginning of Mechanization (1750-1900)**

This was the stage when steam engine was invented by J Watt in 1763. Steam engine was powerful and stronger than human hand. In this stage, relations between humanity and machine developed. Latter locomotive was introduced for public use. This was a grand leap in transportation.

### **4.4.2 Mechanization for Individuals (1900-1950)**

The use of automobiles was individualized that replaced locomotives. Traffic rules were developed and obeyed for greater good of everyone. Transformation from inter-individual responsibility to inter-subjective co-responsibility was absolutely necessary in the moral dimension. The erotological revolution prepared by eco-ethical must be recognized for human survival.

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<sup>11</sup> Technology And Collective Identity: Issues of an Eco-ethica Tomonobu Imamichi

#### **4.4.3 Mechanization as Conditional Capital (1950-1980)**

This period was the age of mechanization as circumstance. It means that mechanization became more and more as environment than separate tools in the environment. This was one of the most amazing and important transformation or alteration of twentieth century. We must understand the logical change of the practical argument, new social crimes related to information, change in the concept of neighbor via telecommunications and new classification of the real world through the efficiency of human activity.

#### **4.4.4 Mechanization as Agent (1980-1990)**

This was the period in which mechanization and machine behaved as agent in various domains, and the resulted in emergence of so-called automation. In this time master-servant relation developed between man and machines for example robots, computers, automation, organ transplants etc. These were the actualizations of mechanization as agents of humanity<sup>12</sup> . No doubt it was always the human desire to use robots and computers like domesticated animals, domestic mechanization was a far more capable and impressive assistant of humanity. At least as regards capacity in the intellectual domain, the human being still cannot oppose mechanization as an agent.

#### **4.4.5 Mechanization as Master (1991-to date )**

Weinsten raise questions for cultural change with so many aspects of collective life, accelerating globalization, or being reformed as a result of rapidly shifting gender relations undergoing re-invention (innovation) (Weinstein 2005)<sup>13</sup>.

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<sup>12</sup> In the Theoretical Framework chapter 2 with detailed discussion on actualization of mechanization on page 47 of same research work

<sup>13</sup> Jay Weinstein, 1996, Social and Cultural Change, Social Science for A Dynamic World. pg-6

In various domains, mechanization becomes the master of human beings. When flying in an airplane, we have no idea of our position, so is impossible to move towards destiny without technological machine, as if mechanization like a lord could decide our life and death. In order to balance our dominion as human beings, we must create new virtues through the aretological efforts of eco-ethica<sup>14</sup> because we must live in mechanical circumstances and with mechanical apparatus. This implies such new virtues as punctuality, philoxenia, tolerance in thought, entrapelia, justice regarding human rights, machinastics, the learning of one foreign language etc.

This change may be social and cultural. Social change is the important transformation of social structures (patterns of social action and interaction) including results and proofs of such structures actualized in norms (rules of conduct), values, cultural products and symbols. The broad definition given here composed both what is the commonly identified social change, which refers mainly to real human behavior, and cultural change, which points mainly to culturally meaningful symbols produced by human beings. Cultural change requires social actors as agents and social change is likely to have cultural counterparts.

#### **4.5 Composition of Mechanization**

The history of logic about mechanization can be seen as an extended work to explain mechanization in comparison to another material. The substances that one addressed changed, but the direction of thought remained always the same. Differences in mechanization can be seen in following aspects.

Beyond these ways of shaping mechanization, there were different "stuffs" out of which machine is made. That does not mean a return to in substantiality in the philosophical sense.

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<sup>14</sup> For details see Mechanization and Collective Identity” issue of an Eco-ethica by Tomonobu Imamichi Imamichi, T. Mechanization as collective Identity, Council for Research in Values and Philosophy.

“Stuff” meaning material is analyzed with respect to its conciliating function in relation to different practices. Machines are regarded as specific forms of realistic control over input-output relations, which were imprint in the media of human activities, physical artifacts and symbolic signs. Combination and ingredients of elements in development of machines and their use were important make a difference (Rammert 1999).

#### **4.5.1 Nature and Mechanization**

The difference between nature and mechanization seems to have the longest tradition. Since Greek times mechanization was segregated from nature under the aspect that mechanization needed competent human interruption to come into being, whereas nature arrange itself spontaneously. In this way, world of artifacts which is actually artificial was characterized from the earthly dimensions of nature. However, the more we realize that our view of nature is also constituted by experimental intervention and with the help of artifacts, the more this defining difference disappears. The more we explain earth by the earthly boundaries of growth, the more we become alert of the built reality of our image of nature. We were trapped in the whirling nature of a materialistic definition. Gidden emphasizes the duality of structure in ‘Structuration Theory’ in 1984. For him, source is the product and product is the source. It means nature produces machine and machine has produced nature.

#### **4.5.2 Life and Mechanization**

The life-ness of organism is compared to solidified body, and how it is generated and degenerated (Giedion 1948; Jünger 1949; Mumford 1971, Heidegger 1962). The gap between mechanical and organic life is sharply narrowing, laboratory life can be a product, which is a combination of life fabric and controlled mechanical structure. Artificial intelligence and

laboratory life were results of machine. But it must be clear that they may produce mechanical objects but not sufficiently encompass and define core of mechanization.

#### **4.5.3 Culture and Mechanization**

Clear distinction between culture and mechanization has been marked. This difference is exhibited in many facets. The world of culture and that of civilization were different. This difference is pronounced in German tradition of Idealist philosophy by Dessauer (1927); as interpreted by Mitcham (1994). Our normal daily talk is based on technical and organized formal rules of dialogue and discussion (Schegloff 1972). The difference between sensible, cultural world and mechanized world of blind following has been diminishing. The essentiality and body of sign and organization of rules enrich the concept of mechanization based on material tools, machines and mechanism.

#### **4.5.4 Society and Mechanization**

Bargaining and agreement in social life is mechanization, as it involves customs conciliating techniques (Latour 1991). When machine is developed consciously or unconsciously, concept and practices of society and culture are incorporated in its functioning and programs. Machines enlighten the functions for which they were developed. According to Rammert (1999), mechanization cannot just be defined by its artificiality, materiality, its mechanical character, non-social character and neutral means.

Along with this, one must also concentrate on the specific function that machines perform. Machines developed in one culture are the products of that culture retaining inbuilt real behavior of that particular culture. These when introduced to another cultural setting act as alien, and produce alienation of Karl Marx. The product, producer and the produce all are alienated

resulting in change of behavior and cultural structure. The behavior of individual culture as social facts experiences change.

Machines were considered neutral and rational compared with biased value laden society. Rammert (1999) highlighted the difference between society and mechanization Inefficient social institutions were in conflict with mechanical efficiency. This new conception was favored by the developers of machines and well accepted and reinforced by those criticizing neutrality and rationality of machines. Winner (1997) talked about addressing the issue at non-political and non-social levels. He identified a difference between social and the mechanical worlds the way they handled problems (Winner 1978). Social way of finding a problem is through negotiation, while mechanical solution emphasizes control. In other words, mechanized solutions were objective while social solutions were subjective. Differences between machines and customs, work and reciprocal communications, system and life replicate this grading of mechanical orders from the social world (Habermas 1984; Latour 1994). It is not possible to comprehend society without its mechanical conciliations.

#### **4.6 Mechanization in Relation With Humanity**

This relation is of transformative nature and can be seen from discussion below:

##### **4.6.1 Work Performance**

The mechanization of humanity has resulted in the diminution of the difficulty of labor and abolishment of inequality in physical conditions. The flip side is the alienation of humanity in favor of the machine and disregard for individual physical differences, which efficient machines has eliminated. The danger of the mechanization of humanity rests in the universality of the machine in which individuality is absorbed in the collectivity (Schmidt-Häuer 1986).



#### **4.6.2 Strengthening of Mental Potency**

Persons having machine like calculator or computer can compute better than one without it. The quality of mental power of man is no doubt great but cannot compete with that of a machine. Machine has facilitated us to an extent that it was no longer necessary to have rational and intellectual abilities for memory and computation.

Attitude of man towards religion with regard to concept divinity generally was shunned by mechanical progress. In older days, cure was thought to be connected to divinity (supernatural) but now cure is available through advancement in medical science. Similarly predicting of storms and organs transplantation, all were related to supranational powers, but with help of machines now these are at the disposal of man. As a result, people now very often believe that miraculous events in both the curative and predictive domains are caused not by divine power, but by scientific methods. Not only mechanization of humanity, but also mechanization of divinity is now the mode for world culture.

#### **4.7 Engendering Mechanization**

Shift from subsistence to a market economy has a dramatically negative impact on women. According to Shiva, Green Revolution focused on increasing the yields of rice and wheat and entailed a shift in inputs from human to technical (Vandana 1988). Women's participation, knowledge and inputs were marginalized, and their role shifted from being primary producers to subsidiary workers to consumers.

Cash crops are the focus as result of mechanization led to a situation where food crop has been directly picked from the farm and dropped in the market. So, the produce is directly sold in market. In this all men control, the income generated. Earlier, most of the produce was brought to home for domestic use as well as for storage. In this condition, women were partial controller

of the resource. They use it as commodity for barter in the village either to get services or for other commodities. Such a system vested more control with women (Carol 1998).

Talking about material mechanization does not mean that there are no non-physical or intangible aspects of mechanization. In fact these aspects bring change in ones frame of mind leading to change in one's role. Change in the role of economic institutions, and political forces will change role of individual.

Keeping in mind the economic profile of common rural population low-cost, suitable and reliable mechanization can help rural women totally or partially satisfy their functional needs. This was with help of mechanization by saving time and energy and providing extra income in form of high farm produce. While promoting mechanization, defining women as a focus group is very important to help their empowerment, which was related with stronger negotiating status in macro and micro spheres of Blumberg. Considering household as micro and community as macro sphere of decision-making (Upadhyay 2004).

#### **4.8 Duality of Mechanization**

According to Orlikowski (1992) and Robey (1991), mechanization in its natural composition, was the social product of subjective human action within particular contexts of traditions and structure. While in its constitutive role, it was simultaneously an objective set of rules and resources engaged in mediating (facilitating and constraining) human action, and therefore sharing the formation, generation, regeneration the creation, and transformation of these structural and cultural contexts. According to theory of structuration, the overall impact of people's living and working within social frameworks was the production and reproduction of culture. The cultural context was created and recreated through the successive action and structure interplay. Showing duality, social structures both favor and constrain the efforts of

individuals, communities and societies. This was also referred to as the duality of structure, seeing that institutional properties of social systems were created by human actions, and in turn shape future actions. It recognizes that 'man actively shapes the world he lives in at the same time as it shapes him (Pang 2004). This support and constrain offered by social structure at a time add duality to it. Mechanization was also dual in its nature, as it helps in generating more work in short time, but constrains effort to produce more in limited time.

#### **4.9 Differences in Mechanization**

Things, which account for differences among machines, are:

##### **4.9.1 Conception of Relations**

The conception of relations makes the difference. By following the ability of human symbol manipulation, one can construct machines having artificial intelligence. If we follow the track, the brain parallel programs of connectionism can be developed. Likewise imagining social interactions and society of mind, one can construct machines of distributed artificial intelligence as culture exhibits the minds program of distributed artificial intelligence.

##### **4.9.2 Choice of One Making Program**

It is the choice of programming individual or authority or constructing machines makes a difference. So far in developing program of social and cultural system, choice of people involved in its development makes a difference. People in the system had a cultural context and their choice of its acceptance or rejection for whatever reason makes a difference e.g. wearing white dress on wedding day in a Christian tradition, while in the subcontinent white dress symbolizes death coffin. Widows in Hindu culture wear white dress to show their widowhood.

### **4.9.3 Machine Once Made is Used Differently in Different Cultures**

Depending on its needs that machine can serve e.g. computer can be used to teach students more efficiently. Likewise computers in an internet café are used to spoil the young. Domestication and cultivation of machines is very important. Machine has no brain of its own; it is the user's mind that creates value for it (Lie 1996).

### **4.10 Socially Pragmatic Concept of Mechanization**

In reality, mechanization has not only brought differences but certain advantages too. Rammert (1999) explained mechanization as a specific form; organized, planned, linked, and certain objects, symbols, and agents so that effects bringing advantages may be apprehended repeatedly and commanded with intention. Mechanization is no more explained necessary specifications: from nature, culture, or society but across these lines of identifications. It characterizes the mechanized form, from the non-mechanized one. It makes a classification between the tightly linked and the loosely linked form. It asserts the difference between mediated and direct experience. This steadily developing idea of mechanization is more suitable for experimental studies. It particularly permits us to analyze the manner of becoming mechanized or of losing the identity of mechanization. One can use it to identify different degrees of mechanizations and their social implications. Rammert (1999) has spelled out *three relations* that constitute mechanization.

#### **4.10.1 Use Relations**

Use relations explain mechanization users' version and this may be helpful in reducing the fear to use machine. We always experience mechanization which is in use. In Tapiali, use-relations were closely related with farm machines: tractors and threshers were no more strangers

to villagers. But they showed hesitation in the use of harvesters and fumigators. People were stranger to them and raising different questions showing their fears. Similarly the use of DVD player was replacing VCR and VCD.

Compared with younger generation (below the age of 35 years), older people were not comfortable in using electronic appliances and mobiles. It was also observed in the field that males were friendlier with new machines compared with females who considered machines as a domain of the men. Females were found hesitant in understanding the working of different machines. This behavior was found because females were socially shy to accept machines independently. They were also not educated and trained vocationally.

#### **4.10.2 Causal Relations**

Causal relation refers to ones between input and expected output. This reduces the idealist influence as well as radical constructivist approach that mechanization can entirely be shaped in a social perspective. In village Tapali, causal relation was detected by comparing the ideas related to different machines before and after their use e.g. use of tractor. Molvie Yaqoob said, “When tractor was introduced, users thought it is key to every solution, we were not aware of its maintenance and running cost”.

#### **4.10.3 Evaluative Relations**

It was developing mechanism of perfection within mechanization. This relation explains innovation in technical sense without considering its qualities or neutral efficiency. The evaluative relation and practical concept of mechanization allows use of opportunity and clash or ambiguity of mechanization without losing its accuracy and rigor. Different cultural practices and local situations give different colors to this concept. This relation was exhibited when researcher saw that many households had changed their appliances plug according to the type of

their sockets. Before 1989, people of village were not introduced to electrical appliances. Very few, whose relatives were living in cities, were familiar with most of the appliances. But using it personally was a different experience (said by Rasul Bibi, a 54 years old lady. Her two brothers were living in Islamabad).

#### **4.11 Pace of Mechanization**

Many Chinese philosophers talked of sameness, which can be produced only by production in the same manner by an organized process. This was only possible by machine. The pace of mechanization is influenced by a number of economic factors: misconceptions regarding role of mechanization, capital scarcity, energy costs, farm size and subsidies. We will discuss them one by one.

Generally it was assumed that more machinery, in particular, tractors, produces gains in output regardless of the economic environment in which it was introduced. Such a view usually confuses the direct effects of mechanization with the indirect productivity effects of factor savings. For example, in an extensively farmed area of developing countries in Africa where hoe cultivation was used yields may be low, while in an intensively farmed tractorized region of Pakistan yields may be much higher. The yield differences may be caused in part by differences in other inputs, such as fertilizers or seeds. They could be the result of improved tillage but this must be interpreted as the result of tilling machines, this can also be achieved by hand. Examples from Java show that cultivation by hand can be as thorough as by an ox or a tractor (Binswanger 1986).

“Capital scarcity and energy are costly. Poor societies have smaller capital stocks than rich ones, and the cost of capital (in terms of labor) is higher. High capital costs retard mechanization in several ways. First, they reduce the profitability of all forms of agricultural

investment, including land improvements, irrigation, animals and buildings. Second, they may cause farmers to allocate whatever investment funds were available away from mechanical inputs. This trend will be stronger the more expensive and long-lived the mechanical inputs were and the easier it was to produce other forms of capital (such as land improvements) by hand. A third effect, discussed in detail in the next section, is that higher capital costs produce a bias in mechanization toward power-intensive operations. Finally, higher capital costs influence the design of machines; if repair costs are relatively low, designs emphasize repair over durability” (Binswanger 1986).

Energy is only one of the many costs of using machines. Capital and maintenance costs are often larger. Since the profitability of machines, their comparative advantage is tied closely to labor costs. Expensive energy is likely to retard mechanization much more scarcity of land relative to labor and thus need not be an independent influence on the pace of mechanization. Mechanization can certainly facilitate the growth of large farms, as it did in the United States after 1940 and later in Western Europe (David 1975).

Because larger farms offer more collateral, they make it easier to borrow to invest in new machinery. In addition, some (but not all) mechanization was subject to genuine economies of scale: it was technically more efficient to design a large rather than a small machine. Even machines invented in countries with abundant labor (and therefore smaller farms) were first developed for the largest farms, because they had the lowest costs of capital relative to labor. The market for machines expanded to smaller farms only when labor costs rose or capital became more abundant. In the history of engineering, technical developments have often been embodied in smaller and smaller machines (Binswanger 1986). Again researcher can quote example of Japan, who has developed many machines for small farms and plots. For certain operations,

mechanization spreads to small farms when machinery can be rented rather than bought. For a rental market to be established, the optimal farm size for owning a machine must be bigger than that of numerous small farms. In addition, it was easier to establish rental markets for operations that do not need to be done on all farms at the same time: threshing and milling were examples. It was thus no accident that rental markets for threshing machines were well established in the 19<sup>th</sup> century in the United States and are now common all over Asia.

“Subsidies may speed up mechanization. Because the direct effects of mechanization on yields were small, however, any effect of subsidies on agricultural output must be an indirect one that arises from the cost reduction made possible by machines. But when mechanization was not spontaneously driven by some form of labor scarcity, the impact on production costs was not large; the output effects of subsidies, therefore, cannot be large either. When mechanization was caused by subsidies, reductions in agricultural workforce can be substantial. Unlike, workers who lose their jobs will find only inferior alternatives, and some may remain unemployed; this redeployment of labor was not a productive benefit, but a loss. Nor was there any potential relief from drudgery for the redeployed workers, since their inferior work options may in fact entail more drudgery”

It may be noted that in USA, Philippine and UK rental markets were well established. All farm machinery right from tractors, tillers, harvesters, threshers and millers were available for rent. These renters were professionals and were very keen in improving the equipment and properly maintain the already owned “stuff”. This practice encouraged the farmers to use machines to work efficiently as it was easy to bear the operational cost (rent) of machine rather to purchase it.



#### **4.12 Social Impact of Mechanization**

The following discussion shows that that mechanization has brought social change. In the village, increased dependency, shift to non-agriculture economy, domestication of females, loss of food nutrients, diminishing leadership and dying skills were found as few of the gifts of mechanization. Martin and Olmstead (1985) have found that mechanization has displaced farm workers, eliminated small farmers, hurt consumers, impaired the quality of rural life, and impeded collective bargaining.

Industrialization displaced many people from land and forced them to find work in factories in town or cities. This abolished on-farm slavery, triggered sifting of people from farm to non-farm activities, and moved them from villages to cities. Changes in social facts, like strong family ties, self-sufficiency and access to land were replaced with the weakening of family unit, (joint to nuclear), dependency on trade, barter to monetary economy and limited or short term access to land. This led to accumulation of wealth in the merchant class (non-farming activity). Displaced population working in non-farm sector generated this wealth. This introduced alienation in the working class which shadowed alienation in the merchant class but in a different perspective.

Mechanization leads to greater social economic division. Laborers are viewed as commodities and expendable. Mechanization leads to alienation because it can create jobs that require no specialist knowledge. Advances in mechanization are generally not equitably shared within society. People with money have more opportunity to acquire machines, which enables them to acquire even more wealth. This facilitates accumulation of wealth in a certain group or class. From a gender perspective, it was found accumulated in the male group in village Tapiali.

Agricultural mechanization occupies a special place in the hearts and minds of people concerned with development. However, mechanization as an effective partner of progress and

socioeconomic well-being still has a long way to go. A better understanding of its many consequences and complexity can be likened to mix and match of the different hues and shades of a rainbow that makes definite observations truly difficult (Lantin and Faigmane 1985).

There is no fixed method to ensure the transfer and shift of any technology as the situation and conditions vary in each case. Need to be mechanized was the prime initiative in considering the transfer and spread of mechanization; another was the identification of appropriate machine or set of machines for the satisfaction of need.

Mechanization of agriculture is a worldwide trend. Mechanization and technological inputs are highly interrelated, former perhaps being the most critical one. Unfortunately, the history of agricultural policy in many developing countries, including Pakistan and India, is replete with controversies when it comes to mechanization. Mechanization was dubbed as anti-labor, anti-employment, anti-poor, and hence needs to be discouraged at any cost. Over the years, the scare among policy makers about mechanization has receded in its intensity but the phobia has not disappeared altogether. Many economists have also contributed to the predicament of policy makers in this regard. Part of it was ideological and visibly anti-big farmer oriented. In this perspective, mechanization was identified with large farms and big farmers. According to Rao (2003), the social cost and benefits of existing pattern of mechanization were positive. He has concluded in his study that the existing pattern of mechanization did not add to unemployment in the region, where the thrust was to expand agricultural output. In this case, machines were used in response to worthwhile techno-economic considerations and to counteract the high cost of draught power (Mansuri and Rao 2004). As the machines helped to save resources, hitherto allotted to maintain draught animals, they increased output by raising crop intensity and yield per acre leading to a net increase in farm employment. Their use may,

therefore, be economically more beneficial in the context of shortages and high prices of agricultural commodities. Findings on Tapiali have not favored this conclusion drawn by Rao in 2003 in his study (Mansuri and Rao 2004).

The affordability of small farmer was very much important and justification of processing based on farm size. This was the result of one of the main misconceptions regarding mechanization which was clearly confused with tractorization. Small and simple tools must be implemented at affordable price to improve farm operations on small farms, like sowing weeding or operations must be prioritized for immediate mechanization. Based on improved power machines such as seed planters, harvesting tools, cutters, weeders must be provided at affordable prices to small farmers.

#### **4.13 Aims of Mechanization in Agriculture**

Binswanger and his colleagues (Binswanger *et al.*, 1995) have mentioned that the prime goal of mechanization was to reduce pressure on land and produce enough food to support population. Increase in population was an important factor for increased mechanization. Mechanization must be applied to improve and sustain agricultural productivity. Mechanization along with developing new and more efficient means will bring agricultural growth at par with population growth. In Pakistan, for example, it was estimated that large existing productivity gaps in major crops indicate an opportunity to boost productivity by as much as 30-40 per cent over short to medium term. The benefits of mechanization are unequally distributed among those having land access, material availability and other inputs and those who were without these<sup>15</sup>.

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<sup>15</sup> Changing role and objectives of rural development in South Asia, 2005, Chapter 2. Center for South Asian Rural development.

Talking about mechanization in rural society and not representing mechanization in agriculture will be tantamount to presenting a fake picture of rural society (Rao 2003; Mansuri and Rao 2004). Mechanization itself is a capitalist activity, as it needs capital-making process mechanized (research in high yield seeds, tools, soils, fertilizer etc.), selection of seeds, sowing, harvesting and grain storage. Marx demonstrated how the process of development of capitalism in agriculture results in a 'structural transformation'. On the one hand, the peasantry is dissolved into an urban-based economy, and on the other, a rural-based capitalist agriculture replaces peasant production (tenant-based farming). These two factors underscore the growing differentiation of the peasantry and the transformation of relations of production in agriculture (Rao 2003).

#### **4.14 United Nation and Mechanization**

United Nation was working to improve the life of rural women in every part of world especially in developing countries. In author's view, United Nations must work in perspective to find duality of factors supporting and constraining lives of rural women.

Rural women issue was on agenda of UN since 1995. UN requested the members to update her on the following issues:

- a. Access to land, capital/credit, and mechanization;
- b. Access to gainful employment;
- c. Support for non-agricultural activities;
- d. Access to markets;
- e. At least a minimum level of social infrastructure;
- f. Availability of basic health and family planning services;
- g. Access to education, including adult education, aimed at eliminating illiteracy;

- h. Access to water, electricity, and energy resources;  
Social support measures, e.g., child-care facilities and social security;
- i. Access to decision-making at all levels;
- j. Empowerment of women;

General Assembly, Economic and Social Council in 1995 announced, “There was considerable evidence that, as was the case with the global economy as a whole and with developing countries in general, rural societies were beginning to undergo fundamental changes. The importance of rural women in the next century will rest more on their impact on the economy and society than on their numbers. It will be related to their contribution to food security and to economic growth, as well as to the maintenance of social cohesion”.

“Rural women the world over were an integral and vital force in the development processes that were the key to socio-economic progress. Rural women include farmers, as well as domestic servants. They form the backbone of the agricultural labor force across much of the developing world and produce an estimated 35 to 45 percent of the gross domestic product and well over half of the developing world's food. Yet, more than half a billion rural women were poor and lack access to resources and markets. In fact, their number was estimated to have increased by 50 percent over the past 20 years and, at the present time, they outnumber poor men”.

“The situation of rural women was beginning to be affected by the growing interdependence of the global economy, by urbanization and by the increasing concern with food security”<sup>16</sup>

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<sup>16</sup> United Nation 1995, General Assembly Economic and Social Council, Fifteenth Session.

#### 4.15 Concept of Process and Sources of Change

De Sanctis and Poole (1990) borrowed the idea of structuration from Giddens to propose machines as agents bringing change in social structure. Borrowing from Giddens's structuration theory, Orlikowski (1992) applies her critique of the duality of structure to mechanization and identifies prior views of mechanization as either objective force or as socially constructed product - as a false dichotomy (for greater discussion, see, section Duality of Mechanization). She compares this to previous models (technological imperative, strategic choice, and mechanization as a trigger) and considers the importance of meaning, power, norms, and interpretive flexibility within the theory of structuration (Orlikowski 1992). The 'practice lens' permits one to examine how people, as they interact with a machine in their ongoing practices, enact structures which reshape their emergent and situated use of that mechanization. Though Orlikowski's work is focused on multinationals and corporations, it is equally applicable to mechanized cultures which have emerged in smaller community-based organizations, and can be further adapted through the lens of sensitivity to engendered differences in approaches to changes in the governance of mechanization (McKenzie *et al.*, 2006, Stillman *et al.*, , 2007).

The term changes have been used in the study of politics, history and economics and encompass topics such as the favorable outcome or failure of various political systems, democratization, development, economic growth and globalization. The term is usually used to changes that are beneficial to society. It may result in negative side-effects or results that reduce the value or eliminate existing ways of life that were regarded positive. Among many forms of creating social change were theater for social change, direct action, protesting, advocacy, community organizing, community practice, revolution, and political activism.

This section deals with the change in role and culture. The change in culture is related to change in role and vice versa. Sewell (1992) in his research has tried to provide answer to the question "Why were structural changes possible?" He argues that changes arise from the multiplicity of structures (William 1992). Societies are based on practices that are derived from many distinct structures, which exist at different levels, operate in different modalities, and were themselves based on widely varying types and quantities of resources. However, these distinct structures also intersect. In the structure of capitalist society, there were both the production modes based on private property and profit and the mode of labor organization based on the solidarity of worker.

Due to their shifting and flexible nature, these changes can be applied to a wide and not fully predictable range of cases outside the context in which they were initially learned. However, the accumulated resources were not easy to predict (e.g. investment, military tactics etc.).

White (1978) states that there were three sub-systems in structures:

- a. Mechanized material culture used to exploit environment (most important).
- b. Sociological- interactive behavior of individuals.
- c. Ideological- non- material.

He said that the mechanized sub-system conditioned the other two, so that the development of a culture depends on mechanical advances and the amount of energy harnessed per head (White 1978). In White's view, hero of our development was mechanization.

Restructuring means basic and vital alteration in the economic basis of society, from which radical social change evolves. When talking about rural restructuring it was often

confused by apparent differences between long and short term trends, and of course, different meanings and symbols in the tradition as well as interpretations of economic statistics<sup>17</sup>.

Gray in his paper, mentioned the declining share of agriculture in Australian national wealth because of declining returns (Gray 1994). Same was the case in our country, shortage of wheat grains and flour was the sum of poor management on the part of government and declining returns in agriculture despite investment in the mechanization of agriculture.

Increase in number of abundant farm was, however, only one face of the restructuring process that engages changes in almost all aspects of the lives of rural people. Declining farm numbers and unreliable farm incomes trigger changes in the process people organize their lives and their relationships with family and community. Moreover, the economic changes at the farm level can be characterized to much broader economic and social forces which they themselves needs explanation.

Gow's concept of change was in structural adjustment which was an inevitable process, a kind of cleansing approved by the famer's Union. It was expected to have economically more sound agriculture sector (Gow 1994; Lawrence 1994; Gow 1996). Lawrence focused more on explaining the difficulty experienced by people in agriculture in trying to attain a sound base. The change or restructuring viewed by these two authors looked beyond structural adjustment to the social relationships upon which it was based (Lawrence 1994).

Report of the United Nations prepared in 1995 providing assurance to rural women with respect to access to land, credit, formal sector of labor and market was needed. All these were basic rights given to Muslim women. It means in Tapiali women must have with these rights. In reality, the picture was entirely different; resources were in the hands of males, women access to

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<sup>17</sup> The changing structure of rural communities Ian Gray Centre for Rural Social Research, Charles Sturt university. This article was first published in Rural Society 4(3/4) December 1994.



credit and land was not recorded. Similarly, their access to economic formal sector of economy was at its initial stages.

#### **4.16 Stages of Change**

Murdock (1961) does not present a theory of change, but rather describes the process of cultural change. According to Murdock, culture was a system of collective habits. The collective habits may be habits of actions, i.e. customs, or habits of thoughts or collective ideas (Murdock 1961). This concept is similar to Durkheim's collective consciousness. These habits were learned collectively. Some of the habits, for example, language may be shared throughout the society, while others may be limited to certain classes or groups. People have shared habits because some people experienced similar conditions and events, as the learning environment was same so learnt habits were similar. More importantly, habits adapted in one generation to satisfy needs, are found to be adopted in next each generation. Furthermore, social pressure was exercised in order to ensure that people conformed to the habits which the social group considered to be right and appropriate. The adoption of appropriate habits equipped individuals to deal with various social situations, and to develop reliable expectations of how others may respond<sup>18</sup>.

Since each society was different in the manner it develops and experiences different geographic and social conditions, the collective habits differ for each society. Consequently, changes in social behavior or culture generally have their origins in "some significant alteration in the life condition of a society". If the situation of the society changes, old behavior patterns may be discouraged and new patterns may emerge.

Typical events that results in change may include demographic changes, changes in physical and geographical environment, movement to a different environment, contact with

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<sup>18</sup> Maria 1998 notes on social change, unpublished

people of different cultures, natural or social disasters, wars, discoveries, even particular leaders. Moving to different physical or non-physical environment, cross-cultural diversity resulting in diffusion, natural or social catastrophes and inventions may bring about a radical change over the years.

Murdock (1961) opines that change takes place at a specific time and place and the consequences will depend on form in which change has appeared. It was very much possible that the same event was different in different frames. According to him, cultural change can be outlined as:

- a. Innovation,
- b. Variations,
- c. Inventions,
- d. Entirely new,
- e. Diffusion,
- f. Social acceptance,
- g. Selective elimination, and
- h. Integration,

On the first hand, formation of new habits by an individual, if accepted and practiced by other members of society (in the same culture), was called innovation. Innovation may be minor change in already practiced habits. This change may be partial at any given time. Total alteration may occur over longer periods. These innovations may be “inventions” transferring behavior from one situation to other or mixing old ways in new.

Murdock (1961) committed that most of the innovations were inventions. These may occur in same or similar culture at a time. Entirely new habits develop by a trial and error

process as already in-practice habits were not satisfying the needs of people in particular situations. Therefore, new solution was found to address the problems. Finding solution to any type of crises in culture and society was the development of new habits.

Cultural borrowing and diffusion is important according to Murdock. According to him, almost every culture is surviving due to these borrowings. Most often, societies borrow from immediate neighbors, trade, missionary activities, political or military conquest and inter-marriage. Borrowing only occurs when a society does not already have a trait or habit that fulfills its need. Borrowing is not necessarily exact, but commonly includes modifications to fit the current cultural situation and needs.

Social sharing was very important. Change must be shared for its social acceptance. Change if not serving the need for which it was introduced will experience change by “selective elevation” proposed by Murdock (1961) or through “natural selection” as in Darwinian evolution. Many of the “changes” after change were retained, but now serve a different function (e.g. use of candles from source of light to ceremonial symbols). Shared habits after acceptance find their place in already practiced habits resulting in semi-perfect to perfectly integrated and adopted whole. Modification of habits varies with culture. Murdock concludes that the net effect of various processes of cultural change is to adapt the collective habits of human societies progressively over time in line with the changing conditions of human existence.

Benedict’s work on culture endorse that the process of change is complex, and cannot be based and built hypothetically and by deduction. The habits of any particular culture are deeply rooted and it is difficult to change them (Benedict 1961). There may be times when some simple and obvious thing or idea may not be invented or adopted, even when there was a great need for it, and very complex things or ideas may be developed in simple societies.

## **4.17 Factors of Change**

Gene Shackman (2001) worked on social change. Literature identifies a number of factors identified as responsible for change and categorized as:

- a. Systematic factors, and
- b. Non-systematic factors

### **4.17.1 Systemic Factors**

Systemic factors are those which bring about system – wide changes. These changes affect each and every one who lives in that social system. These include the following factors of change:

#### **4.17.1.1 Mechanization and Capitalism**

Capitalist system, according to Marx is based on search and maximization for profit through commodity production. Growth is obtained through the expropriation of surplus value (profit) gained from workers. The capitalist system has a structural tendency that leads to declining rates of profit (Giddens 1971). Profits and productivity can be increased through technological improvement and increased mechanization. However, the average rates of profits for all will still decline though spending more on capital may increase the productivity of labor (Giddens 1971). This belief in increased productivity through capital investment leads to greater degree of mechanization.

#### **4.17.1.2 Institutional Framework Approach to Mechanization**

Eisenstadt <sup>19</sup> has described the dynamics of mechanization. He has also specified those factors under which successful mechanization can occur (Eisenstadt 1986). These are social

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<sup>19</sup> Tradition, Change and Mechanization.

mobilization, structural differentiation, and development of free resources, specialization and diversity of social organization, and the development of regulatory and allocative mechanisms in the economic, political and other institutional spheres. Eisenstadt (1983) sees mechanization as partially systematic and partially indeterminate. Thus, while there are certain factors required for mechanization, there is also a great variety in the specific forms, society may take and how the mechanization process occurs. The differences in the mechanization process may be to some extent explained by the already achieved level of a society's development, the temporal sequence, and the actions of the modernizing elite.

#### **4.17.1.3 North's Institutions Concept**

North (2009) is concerned with the dynamics of political, social, and economic changes. These changes inadvertently promote technology and mechanization. In particular, he writes about institutions as the carrier of the process of economic change. Institutions being society's formal rules (constitutions, statute and common laws, regulations, etc.), informal constraints (norms of behavior, conventions, and internally imposed codes of conduct) and the enforcement characteristics of each are created to reduce uncertainty in the pursuit of goals in economic, political and social exchanges and to provide underlying structure to exchange and human organization. Organizations economic, political and social are the actors, and new institutions or technology will emerge when it is perceived that they can improve their competitive position by such innovation. Both the structure and individual inter-dependently change producing and reproducing over time. Since mechanization is perceived as an outcome of an innovative and entrepreneurial spirit, it finds increasing space in a modernizing world.

#### **4.17.2 Non-Systemic Factors**

According to Shackman (2001), non-systematic factors are:

#### **4.17.2.1 Geography**

Though geography is generally seen as a coincidental factor, Hibbs and Olsson (2004) indicate that it has played a key role in the transition from hunter-gatherers to agriculture because it provided natural resources that made possible institution building to support further development. Had the transition to agriculture based society not happened, mechanization would not have been occurred. In parts of earth like North Western Europe, geographical location led to the development of independent cities, possibility of capital accumulation, and a partially dependent bourgeoisie (Chirot and Merton 1986). This resulted in the development of systems of rights and responsibilities, legal regulations for fiscal and economic exchange, and standard rules for transactions Chirot and Merton, (1986), which were positive ore requisites for the development of capitalism (Collins 1986). On the other side, the geography of China led to dependence on large scale irrigation, which needed strong centralized authority, and cities developed as dependent on monarchic authorities. As a result, the rule was by patrimony rather than by an egalitarian legal system. This impeded long term continuous growth without which entrepreneurial organization of capital and therefore, advent of mechanization was not possible. The former was not appropriate for entrepreneurial organization of capital (Collins 1986).

#### **4.17.2.2 Discovery of the New World**

The discovery of new worlds gave support to the development of capitalism, which as a result gave margins for an increase in overseas trade. To fulfill the demand of trade new manufacturing and production hubs were established keeping in mind to place them away from traditional feudal forms of social systems and organizations.

#### **4.17.2.3 Capitalism and the Growth Process**

It is not necessarily inevitable that innovation is part of some logically flowing system dynamic of the capitalist development. Thus, some societies developed innovations, which allowed them to prosper and grow, while others did not and were consigned to the dustbin of history. More recently, many see technology or innovations as a driving force of modern growth (Castells 1996). In this case, they consider technology and mechanization as part of a systematic process of capitalism. This is also evident from the fact that technology and mechanization, in the form of the invention of heavy plough and improved harnessing of horses, was one of the main factors which allowed northwestern Europe to develop in the middle ages. More recently, railroad was an engine of change, as it lowered transportation costs, more effectively connected remote regions with more advanced areas and “brought modernization everywhere it went” (Chirot 1994).

#### **4.17.2.4 Clash of Wills**

Clash of wills is also an important non-systematic source of change. Bendix (1984) points out that it is “the clash of wills which is necessary for the emergence of the present”. This clash of wills is connected to the political structures of countries and states. It is important to know, how they enter the modern industrial age. Bendix (1964) explained how important political management was in “reconciling tradition and modernity”. transition in Japan is the case example. Most of the development inspiration and sources in Japan came from outside the country; issue was to integrate them in the traditional society by individual and collective decisions and the political management. The example of other countries in this regard is not much different either. Nevins and Commager (1986) analyze the American Revolution and

conclude that it was led by people who were well organized, while their opposition, the loyalists, was not, and it was the organization of the revolutionaries which helped them succeed.

#### **4.17.2.5 Mechanization and Social Organization**

Different factors like, how a society is organized, its relations with neighbors or its previous level of development, also affect the path and pace of modernization and mechanization. According to Eisenstadt (1973), in the beginning of modernization the material and social position of people matters a lot. It provides foundational raise for future building of mechanization and modernization. People in different social organizations and structures modernize in their own manner. Similarly, the process may vary depending on the economic resources already present. More backward economies may experience heavy stress and discontinuity. Secondly, the time sequencing of the process creates different prints of modernization and mechanization. Western modernization is headed with cultural and economic betterment pattern. On the other hand, in Latin American, Asian and African countries, political modernization occurred first. Finally, the practices of the "modernizing elite", who headed modernization, may affect the nature and context of the whole process. Different elite groups have their own choices for different policies of social or economic development. Absence of an elite group may delay or altogether prevent the process of modernization and mechanization in many of the cases.

#### **4.18 Combination of Socio-Economic and Political Frames**

The social, economic and political forces are very important in channelizing change. Ehrlich (1999) and Tilly (1997) conclude that socio-economic and political changes are interrelated and there is also a close interaction between economy and state.



#### **4.18.1 Politics, Society and Change**

Ehrlich (1999) has worked on relationship between economic growth, social values and level of democracy. The results of their study showed that economic development and democratic movements and dominant self- expressive rights for the citizens support all those who favor that doom of modernization is rested on social, economic and political forces and processes. If in past democracy was valued high, its position will be high in modern society in relation to other values like higher GNP, and more self-expressive values in the present.

Human strive for self-expression. Democratization or institutional Human Development reduces stress on the level of formal rules by granting citizens with 'negative' and 'positive' freedom rights. In totality, one can say that, improved chances in societal structures favored the economic resources, expressive values and freedom rights for better human choices.

According to Forgas (1988, 2000), hegemony is a relationship of power, where social group exercises power due to its social position, or due to their leadership status and dominance in culture, over subordinate groups in various ways. According to Gramsci, public institutions like the political government, independent judiciary and the police, forming a dominant social group or ruling class, shape the State. These three institutions were used to legally apply specific ideas and set rules on civil society, regardless of the wishes of those who make up civil society (Bates 1975, Cox 2002). Gramsci gave private status to civil society same as the institutions like the family, trade unions and the church. Thus, accepted reality is formed when subordinate groups ascertain with the ideas, values and beliefs put forward by a dominant group to such a level that these becomes as accepted the ideas, as the norm or common sense. In this way dominant groups, helped by social institutions strengthen their ideas, are able to direct social and political consciousness. It was further discussed that subordinate group's automatic agreement to

the norms of social life supported by controlling groups. This occurs because a controlling group holds status of power and leadership within the social order.

This game of control and subordination could be seen in village Tapiali. Males were not only socially empowered, but also added greater power through machines to gain further control on resources. Females not realizing the original game were performing the role of subordinates. They were also surrendering their control on resources in a fallacy of freedom from work created by capitalists, making them a class lower level to males. Thus, they relinquished control to males by a different strategy; none of this was related to mechanization.

#### **4.18.2 Economy and Change**

Tilly (1997) explained the relationship between state and economy in different ways. These pertained to political activities of the state affecting the economy and state acting as an instrument of exploitation. Farr and his colleagues showed that past economic freedom pronouncedly provides the platform to the current level of real per capita GDP. In addition, economic well-being in past predicts current economic freedom (Farr *et al.*, 1998). Thus, economic well-being and economic freedom were bilateral, one contributing to the other.

Changes in the global economy brought about changes in the role of rural women<sup>20</sup>. This was one of the broader perspectives in field findings in Tapiali village. These changes were more pronounced in fragile economies like Pakistan. These changes also have particular effects on rural women, depending on where they live.

Women, if they are to be part of progress in society, need economic independence. In Tapiali, development of society has been confused with mechanization growth. No doubt, work both on the farm and in the household have been mechanized (here our concern was not with

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<sup>20</sup> Women in a Changing Global Economy: 1994 World Survey on the Role of Women in Development, United Nations.

degree of mechanization) but the dependence of women has increased because women share in production activity has been reduced (see findings in chapter 6 and 7 of the work as findings)

Traditionally, the role of agriculture in economic development has been viewed as that of establishing a framework for industrialization by providing factor inputs and low-priced food. More than three fourth of developing countries' population depends directly on agriculture for their livelihood. Agricultural development is, therefore, the sine qua non of national economic development. Agriculture is also important in the sense that its failure to keep pace with industrialization can act as a constraint on sustainable industrial growth and the development of other sectors, because it constitutes an important source of effective demand for industry<sup>21</sup>.

The neglect of agriculture, a by-product of decades of inward-oriented mechanization in developing countries, has been a cause of severe internal imbalances and widespread poverty, inequality and unemployment. The process of redressing bias against agriculture created by such policies has sometimes led to a worsening of gender bias in agricultural economic activity. This was mainly because of the lack of awareness in gender perspective while making the policies for economic adjustment. Gender balance and command on productive resources is adversely affected by the failure and negligence for gender barriers while allocating resources with or within systems. The design in agricultural production policies heavily favored men in shift the relative income-earning ability in their part of balance. Persistent inadequacies in women's access to land, credit, extension services and mechanization suggest that men rather than women have been able to benefit from incentives under expanded commercial agriculture. Women own-

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<sup>21</sup> Ibid

account farmers, agricultural laborers and subsistence producers have largely remained in low productivity and low-income activities<sup>22</sup>.

Food provision was the responsibility of women in traditional societies and even today, food security is related to women. The transformation of societies towards non-agriculture base provides opportunities as well as problems. The strategic role of rural areas in the production of food becomes more important as urban populations increases in size thus relying further on the rural areas for food. Food production can be a source of economic growth as an increasing share of production will be marketed rather than self-consumed. Moreover, increase in cash income of the rural population can provide a stimulus for the urban economy through increase in the consumption of basic goods. Owing to the fact that in a large number of developing countries, women predominate in food production and marketing, this should provide enhanced opportunities for rural women.

In the village Tapiali, women participated in the production process and changed their role from a producer to that of a consumer. Change with respect to development strategies to food, agriculture and population can be seen after experiencing industrialization and mechanization. These concerns give shape to sustainable food security. Change introduced in the form of machines has changed production pattern and control on produce. This change in Tapiali village proved loss of women's control on grains and increased dependency on males. Women also lost influence on family nutrition which she used to have by providing home-made milk products.

As compared to urban areas, the rural household was a production unit as well as one whose primary economic function was the management of consumption. Women, men and

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<sup>22</sup> Women in a Changing Global Economy: 1994 World Survey on the Role of Women in Development, United Nations.

children in the household were expected to contribute to household income by working the household's land as salaried labor and by other means. The effectiveness of the household as an economic unit depends in large measure on the intra-household relations between women and men. As Waring noted in 1988, family resources and decisions impinge not only on rates of fertility, mortality, and migration, but also on the transfer of activities from the unpaid, largely unmeasured household sector to the market sector, which was a fundamental determinant of the rate of growth of Gross National Product<sup>23</sup> (Waring 1988).

Any approach to food security needs to take into account the role of rural women, their status and opportunities related to food production, consumption and supply. Although rural women were at the end of the distribution chain for productive resources and social services, they were at the start of the food production chain.

Role of woman as a food producer must not be neglected. Women were the predominant producers of food for domestic consumption. They performed this function while facing considerable constraints. An examination of these factors can provide a basis for determining how best to overcome the constraints and thereby help increase the effectiveness of women in addressing the issue of food security. Economic power of women can be used to change the economic structure of rural economy by giving them due share in production. In countries like Pakistan, women's economic participation is a reality (even though data may indicate otherwise), both within and outside their homes, in the formal and informal sector and in the urban and in rural areas. Some 72.2 percent of the women are agricultural workers. Gender imbalances in access to resources impact negatively on women's ability to play vital custodial roles in sustainable environment practices (Alizai 1995).

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<sup>23</sup> General Assembly Economic and Social Council 15<sup>th</sup> substantive session of 1995. Agenda item 107, agenda item 5(e) advancement of women social, humanitarian and human rights questions: reports of subsidiary bodies, conferences and related questions: advancement of women improvement of the situation of women in rural areas.

### 4.18.3 Changes due to Mechanization Progress

Many anthropologists have formulated social theories explaining social and cultural evolution. Some like Pease and White (2004), Gerhard Lenski (2005) and Morgan<sup>24</sup> announced that development of human civilization was primarily driven by mechanization. In social theory of evolution Morgan has divided evolution of society in three stages (savagery, barbarism and civilization). Milestones of mechanization can be identified by following the same concept of evolution. In the first stage fire, pottery and bow was built which was the 1st stage of social evolution in the savage era. The second stage, at par with barbarism, deals with metals, agriculture and animal domestication. In the third stage, which is considered as last stage of social evolution alphabets and writing, were developed.

White (1978) points out that energy can be used as a parameter to measure the function of culture. According to White, controlling energy was the major function of culture. White differentiates five stages of human development:

- STAGE1      Use energy of muscles.
- STAGE2      Use energy of domesticated animals.
- STAGE3      Use energy of plants.
- STAGE 4      Use energy of natural resources.
- STAGE 5      Harnessing nuclear energy.

White (1978) introduced a formula  $P=ET$ , where E is a measure of energy consumed, and T the measure of efficiency of technical factors utilizing energy. Culture growth can be evaluated

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<sup>24</sup> Lewis Henry Morgan. 1871. Systems of Consanguinity and Affinity of the Human Family, Smithsonian Contributions to Knowledge. Washington DC.

by the energy amount used per year by every individual in that particular culture. The increase in consumption is instrumental to show the increased efficiency of work<sup>25</sup>.

There was no doubt that mechanization brings about social change. This can be witnessed in the case of industrial revolution, abolishing slavery and migration from villages to cities. Advances in mechanization are generally not equitably shared within society. People with money have more opportunity to acquire mechanization, which enables them to acquire even more wealth.

Mechanization leads to greater social economic division. Laborers are viewed as commodities and expendable. Mechanization leads to alienation because it can create jobs that require no specialist knowledge (chapter 2 for detail discussion).

Changes in agricultural practices were giving way to changes in social life. The mechanized agriculture system consumes fossil fuel, water, and topsoil at unsustainable rates. It contributes not only to numerous forms of environmental degradation, including air and water pollution, soil depletion, diminishing biodiversity, environmental and public health concerns but also destroys social life. In terms of human health, both rich and poor countries could benefit from policies that high-protein foods must be equally distributed. In highly industrial agriculture intense use of pesticides raise the risk of cancers in users both in form of workers and users. These have shown worst effects on body immunity and endocrine glands and more along with these is reproductive dysfunction.

Mechanized agriculture highly depends on high cost inputs from off the farm in form of machines, seeds and medicines (e.g., pesticides and fertilizer). Many of these create wastes that disturb the natural environment. It consumes large quantities of different types of fossil fuel which is not renewable. This is inclined towards the accumulation of production, kicking out

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<sup>25</sup> Ostrogoth 1997, Measuring mechanization progress.

small producers and eliminating rural communities. This also displaces labor, both paid and unpaid, resulting in changes in the life style of those who were displaced, and also of those who introduced mechanization. As now, they have to manage heavy economic input in the form of high yield seeds, fertilizer, pesticides etc.

Industrial agriculture's tendency toward larger, more mechanized farms has also exacted a social toll. Studies have shown that farm consolidation leads to the deterioration of rural communities (Strange 1988).

University of California anthropologist, Dean Mac Cannell, has found a strong association between land and capital concentration in agriculture. According to his findings the concentration of these has minimized the incomes of middle class economic status families. This also resulted in social and economic inequalities among ethnic groups, expansion in poverty vertically as well as horizontally, low education levels, etc. (Congress 1986).

Change due to mechanization has engaged the development and adaptation of green revolution, driven mainly to the operations in agriculture favoring uses of machines and vibrant role of chemical inputs in form of pesticides and fertilizers.

Stable and fairly flexible economic and political system ensures efficient use of resources, and a social system compatible with growth, for example, having values and customs which were favorable toward capital development and accumulation and using capital for its long term as well as short term development both in social and economic sector.

#### **4.19 Agricultural Mechanization and Change**

Middle of 19<sup>th</sup> century is considered as starting of mechanization in agriculture, but major and noticeable advancements were made in 20<sup>th</sup> century. Human and animal power was almost entirely replaced by machines for farming operations in developed nations. As next step now,



agriculture is experiencing transformation in developing countries. During the 20<sup>th</sup> century with the use of farm machines like tractors, cultivators and harvesters, tremendous raise in food and fiber has been recorded. In Developed countries during the process, however, massive shift in lifestyle from rural to urban has been experienced. It also altered nature of work, economy to consumer, role of women in society and last but not the least the size and form of family.

The roles of women in rural areas are multiplying, as economic and policy changes impact rural economies, services and lifestyles. Some of these are the result of wider global influences, others resulting from economic transformation of the rural sector over the last decade or so, and still others were the result of broad social and demographic trends. Women's skills of negotiation and conflict resolution in family help them to set their position in family as well as business. These skills also help them establish agriculture on sustainable grounds. An analysis of agricultural mechanization shows how contemporary changes in mechanization in agriculture and non-agricultural activities in the rural areas have changed the economic and social landscape. These in return modified the lives of rural women. For the last two decades, exceptions and perspectives of rural women have changed. It is very important to note that it has not only changed women's perception about mechanization, but a general shift in how mechanization is viewed at is also changing its implications regarding women.

Economic change has introduced a new social position for rural women and required re-negotiation of their status and role with men. There are a number of "pull" and "push" factors regarding change in the activities of rural women. Diversification was experienced as economic changes have left women with limited options. They have more diversity in terms of land use, gender roles, employment patterns and demographics of rural population. In other cases, women have actively sought changes in their lifestyle, while some women, frustrated at restrictions, led

the way into new avenues of activity. Since it has become acceptable for women to participate in the paid workforce, or establish and run a business, many have done so.

Most of non-farm rural women folk are also experiencing change with respect to the demands on their time and energy. It was important to fund simple technologies for collecting water and fuel (two very basic necessities) develop and supply labor saving agricultural equipment and thus lessen women's stress, allowing them more free time and subsequently improving the quality of life for the entire family.

Rural women can be empowered only if they have:

- (i) Access to ownership of land and property,
- (ii) Access to training and mechanization,
- (iii) Access to credit and markets,
- (iv) Equality in wages and quantum of employment,
- (v) Access to safe water, sanitation and fuel,
- (vi) Improved domestic mechanization,
- (vii) Reliable and efficient family planning services which are client-oriented and within easy reach,
- (viii) Expansion of girls' education and retention in school, and
- (ix) Autonomy over their reproductive life.

In this age of mechanization, rural women are now subject to greater degree of stress than before. Broader skill base is now available and they have to upgrade to compete in the market. This will also help them in reducing stress in changing rural environment. While rural people themselves were making adjustments to enable them to cope with the new and transformed status and role of women and men, these adjustments can be assisted by the right kind of community and institutional support. Here government has a role to play. With appropriate recognition of the

contribution made by rural women to the social and economic growth of household, farm and community, there will be greater understanding of the need for new kinds of infrastructural and cultural support to assist both men and women to adjust and adapt to their modified and extended roles in society.

The researcher believes that society will be better off with these much-needed adjustments, as women tend to be more concerned with environmental and social issues than men were. These skills and interests are also now recognized as being of particular importance for the achievement of sustainable agriculture.

Trust depends on such “soft” factors as culture and expectations, as well as such “hard” factors as power, money, and law. Ultimately, however, trust results from the experience of people and organizations working together and seeing that they can have confidence in their partners and that their joint efforts produce results that matter. The manner in which collaborative initiatives develop can be an important determinant in building trust. Thus, participants in collaborative were sensitive to whether the conveners and other participants really were inclusive, listen, seek to understand their interests and culture, share information and power, negotiate win-win solutions, and refrain from imposing themselves as a dominating force. These were the kinds of factors that build trust, confidence, and ultimately the legitimacy of cross-sector collaborations. Culture and society was made up of components working in terms of trust. Any event or actor creating mistrust was retarding the whole system. In this way, bonds of affiliation break, new bonds develop; new roles will emerge either by alteration or transformation or elimination of structure and actors.

## Chapter 5

### Ethnographic and Demographic Settings of the Locale

#### 5.1 Locale of Study

The Locales of study are not just places but are social settings of interaction with the people, it is therefore, critical for any research to closely examine the locale where the study is to be undertaken. The role of locale is more critical in anthropology compared with other disciplines because of the intensive and in-depth scrutiny of social relationships and interactions involved in the subject.

Garfinkel (1986) has demonstrated that settings are used chronically by social actors to sustain meaning in communicative acts. But settings are also regionalized in ways that heavily influence, and are consequently influenced by the serial character of. Regionalization also has strong psychological and social resonance in respect of the 'enclosure' from the perspective of some types of activities and people and the 'disclosure' of others. In other words, locale denotes the exogenous and endogenous characteristics of social milieu present (Giddens 1984).

Locality, however, is only the starting point of our analysis, as once its physical boundaries are demarcated, the emphasis shifts from territory to social life. Community boundaries are dynamic in that they are created and persistently recreated through the interactions and perceptions of local people, as they go about their daily lives. It is with this background that the remaining part of the chapter portrays the locale of Tapiali.

## 5.2 History

In the 18th century, Kahuta along with much of the subcontinent became part of British India. The old tehsil was described in the "Imperial Gazetteer of India"<sup>26</sup> as follows:

Kahuta, eastern tehsil of Rawalpindi district, Punjab lying in the lower himalayas, with an area of 457 square miles. Its eastern border rests upon the Jhelum River. The whole of the tehsil except the south-west corner lies in the hills, which in the north reach an elevation of over 6,000 feet. The population in 1911 was 94,719, compared with 91,371 in 1891. It contains two hundred and thirty one villages, of which Kahuta was the headquarters.

## 5.3 Geographic Profile

Village Tapiali was located four kilometer from the main town Kahuta with an area of 457 square miles. Geographically, the area was situated in Potohar Plateau in the foothills of Murree lying in the Lower Himalayas, between 33° 18' and 33° 48' N. and 73° 15' and 73° 39' E. On its eastern border was River Jhelum. The whole of the tehsil, except its south-western corner, lies in the hills, while the north reached an elevation of over 6,000 feet.

## 5.4 Administrative Profile

The village Tapiali was in tehsil Kahuta, district Rawalpindi. The Tehsil had been administratively, divided into 13 Union Councils<sup>27</sup>. Out of these, Union Council No.47 and 48 included Kahuta city, while the rest of eleven union councils were made-up of villages<sup>28</sup>. Tapiali was one of the villages in Union Council Doberan Khurd.

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<sup>26</sup> Kahūta - Imperial Gazetteer of India, v. 14, p. 273

<sup>27</sup> District Management Information System, 2006.

<sup>28</sup> District Government of Rawalpindi

## **5.5 Name of The Village**

There were two traditions for the name of village Tapiali. One was that it was a combination of two words of local potahwari language “Tapa” meaning small hillock. The topography of the village confirmed that there was no plain entrance to village before the construction of new road. One entering the village, one had to pass by number of hillocks passing over them by jumping from one hillock to another. Locally “Tapna” meant jumping. Therefore, it seems logical that “Tapaali” means “one with jumps.” Gradually, over time it sounded as “Tapiali”. Second tradition related to its name was that males of family who settled this village use to wear “Cap” locally called “Topi”. So, with this reference, it was called “Tapi-ali”. With daily use this word took the shape of “Tapiali”, the present name of the village.

## **5.6 The Village Tapiali**

The Village had a combination of linear and cluster pattern of settlement. The main village was located between two parallel Himalayan ridges, standing in north and south of the village. In east west direction it formed a corridor joining Kashmir hills. This passage served as route for Rajas of Kashmir visiting near town Kahuta that was one of important posts for controlling Kashmir during British Rule till 1947. Even after independence in 1947, Kahuta was strategically a very important town. Geographically the village land was stepped in a manner that northern platform was raised and Southern areas are few feet lower than the raised part. At the junction of both the platforms, village settlement existed. Village experience east-west slope meaning eastern part of village was raised as compare to western side. The village main road entered from south-west of village by a natural pass in the southern mountains.

The main road of the village winded from the south-west of the village by a natural pass in the southern mountains. This road was ten feet wide and was the only road in Tapiali. The

village was well-connected through a number of streets, all terminating in the center of the village. A graveyard was also at the center of the village Tapiali. On one side of the graveyard was the central mosque, constructed at the time of settlement in the village.

Electricity came in the village in year 1989. This changed the life pattern there. Now a large number of electrical items could be seen in the village households. These varied according to the financial status of the house. A list has been prepared which is reproduced below:

**Table 5-1: Electrical Items in the Village Households**

<b>Electrical Items</b>	<b>Number</b>
Electricity	115
Sewing Machine	38
Telephone	60
TV	89
Dish Antennae	2
Fridge	72
Washing Machine	37
Kerosene oil stove	10
Fire Wood	61
Gas Cylinder	23
Air Cooler	19

Source: Village survey for Research 2007

## **5.7 Settlement Pattern and Housing Style**

Settlement in the village was a combination of linear and cluster pattern of settlement. Main village was located in a linear manner on the junction of northern and southern platform. In the foot of northern and southern hills, cluster settlements existed. In northern section “Gugli” named after the local tree “gugal” was found in abundance in early times after the settlement of the village. In the southern platform, “Dagyari” cluster was found. Most of the houses in the

village were cemented and very few mud houses existed. These mud houses belonged to mochies, (cobbler families). This ethnic group of mochies was invited by “Kala Khan” the founder father of village. He was the one who settled the village five generations ago. He invited mochies (cobblers), lohar (black smiths), and molvies (clergy) to village and gave them land to start their economic social life in the village. Mochies and Lohars were settled at margins of village at that time, while molvies were settled in middle of village near the central Mosque.

## 5.8 Demographic Profile

Total population of village was 1569 persons. The population profile had been given in the following table:

**Table 5-2: Population Profile of Village Tapiali**

Age	Male	Female	Total
<1	22	21	43
1-5	40	40	80
6-10	80	80	160
11-15	46	31	77
16-20	90	100	190
21-25	130	143	273
26-30	56	53	109
31-35	50	49	99
36-40	41	50	91
41-45	42	37	79
46-50	70	57	127
51-55	32	30	62
56-60	30	26	56
61-65	21	30	51
>65	30	42	72
Total	780	789	1569
Percentage	49.71	50.29	100

Source: Survey by the Author

### 5.8.1 Sub-Division in Rajput's Within Village Tapiali

The village population comprised of different castes. Rajputs, Kiyani, Abbasi, and Satti were property owners. The majority was of Rajputs as history tells, had settled the rest of the



castes for their help. The main population of village consisted of Junjua Rajputs who were divided into groups or divisions, locally called “Baand” (division). They had inherited land from the head of the village who had settled the village Tapiali.

There were four such groups or baands in Tapiali:

- a. Lambae (Tall in height).
- b. Attae aalay (group living on hills or boulder).
- c. Aadha aalay (group having half of total share in division).
- d. Mandree (Small in height).

The other castegroups included Molvies (clergy), Mochies (cobblers), Lohar (blacksmith) and Kumhar (potter). The demographic distribution of castes is as under:

**Table 5-3: Demographic Distribution of House hold by Castes in the village**

<b>Ethnic Groups</b>	<b>Number</b>	<b>Percentage</b>
Rajputs	165	82.8
Molvies	15	7.46
Mochi	13	6.48
Lohar	08	3.98
<b>Total</b>	<b>201</b>	<b>100</b>

Source: Village Survey by the Author

Because of low social status in the village and restricted economic opportunities, many mochie had migrated to the nearby city of Rawalpindi and providing service there. Still few old family members were residing in the village. For this reason they paid regular visits to village homes on weekends and during vacations. They were socially connected to their old friends and relatives in Tapiali. In the cluster of Dagyari, a few houses of “Mistries” and “lohars” had been located but most of them had migrated to the nearby town Kahuta.

### 5.8.2 Stratification in the Village Life

Though Islam believes in the equality of human beings, social customs and traditions divided people of the village into groups. These groups worked in their specific economic sphere. Their work conditions and socio-economic status was determined through the ethnic group they belonged.

While Rajputs enjoyed the status of the elite, others (Molvies, Mochies, Lohar and Kumhar) were treated as *kammis* (low status). They were engaged in different trades and catered for the needs of the landlord gentry. Molvies were respected more because they help people in village in their religious matters. The head of molvi families came from Gujar Khan, a nearby *tehsil*. These families were more educated and well off as compared to mochie of the village.

All of them play their important role in the social and economic life of the village. Mochies and Lohars had settled at the margins of village, while the Molvies were in the middle of the village due to their association with the Mosque located in the center of the village. They also had small pieces of land provided by the head of the village at the time of settlement. Mochies and Lohars were the working guilds of the village. Most of the houses in the village were cemented and very few mud houses existed. The latter belonged to Mochies (cobblers families).

The

Table 5-4: Caste – Wise Economic Activities of the Heads of Households in Tapilai village below shows the caste – wise employment profiles of each caste group in the village. We found that Rajputs had a major share in the army, government jobs, were working abroad and were teachers. They were also the only ones who were jobless. This is because they would not like to do something, which is below their dignity. This when discussed with them was explained

by them and as mentioned in number of case studies in the same research work in latter chapters as sense of pride in their being a Rajput – member of a superior caste. They also take pride as being landowner no matter what the size of land is and what its productivity level and worth.

**Table 5-4: Caste – Wise Economic Activities of the Heads of Households in Tapiali Village.**

<b>Occupation</b>	<b>Rajputs</b>	<b>Molvies</b>	<b>Mochies</b>	<b>Lohars</b>	<b>Total</b>
Daily Wagers	5	1	2	2	10
Drivers	14	2	0	0	16
Army (Serving)	2	0	0	0	2
Army (Retd)	15	5	1	0	21
Govt. Job	8	2	0	0	10
Business	1	0	0	0	1
Foreign	11	1	4	5	21
Teacher	8	0	0	0	8
Agriculture	13	3	3	1	20
Jobless	12	0	0	0	12
Others	76	1	3	0	80
<b>Total</b>	<b>165</b>	<b>15</b>	<b>13</b>	<b>8</b>	<b>201</b>

Source: Village Survey by the Author

Similarly, data has been collected about the earnings of females in each caste group in the formal sector.

**Table 5-5: Caste – Wise Female Employment in the Formal Sector**

<b>Occupation</b>	<b>Rajputs</b>	<b>Molvies</b>	<b>Mochies</b>	<b>Lohar</b>	<b>Total</b>
Daily wager	0	0	3	4	7
Drivers	0	0	0	0	0
Army (Serving)	0	0	0	0	0
Army (retd)	0	0	0	0	0
Job (Misc.)	2	2	0	0	4
Business	1	0	0	0	1
Foreign	0	0	0	0	0
Teacher	12	6	0	0	18
Agriculture	0	0	0	0	0

Source: Village Survey by the Author

Table above shows that mochie and lohars were the poorest of the poor since their women were only working on daily wages, most probably in the households of Rajputs. Out of the 18 lady teachers, 12 belonged to Rajput families, while the rest were from Molvie group. Both were placed at first and second position respectively in the village hierarchy.

Since the Rajputs had the opportunity to avail better employment opportunities, they were also able to earn better. The table below is a sufficient proof of that.

**Table 5-6: Caste – Wise Income of Heads of Households**

<b>Income in Rs.</b>	<b>Rajputs</b>	<b>Molvies</b>	<b>Mochies</b>	<b>Lohar</b>	<b>Total</b>
<6000	19	4	6	1	30
6100-10000	34	3	1	0	38
11000-15000	33	1	0	0	34
16000-20000	28	2	1	2	33
21000-25000	21	2	1	0	24
26000-30000	3	1	1	0	5
31000-35000	6	0	1	1	8
36000-40000	1	2	2	1	6
41000-45000	12	0	0	2	14
>45000	8	0	0	1	9
<b>Total</b>	<b>165</b>	<b>15</b>	<b>13</b>	<b>8</b>	<b>201</b>

Source: Village Survey by the Author

We find that eight Rajputs families were earning more than Rs. 45,000, while only Lohar could manage that. The latter was the one who was working outside the country. Rajputs being the landed aristocracy enjoyed a better income, though not all of them fell under this category. The table shows that almost fifty percent of them earned less than 15,000 per month.

**Table 5-7: Caste-Wise Income of Earning Partners in Household (Other Than Heads Of The Households)**

<b>Income in Rs</b>	<b>Rajputs</b>	<b>Molvies</b>	<b>Mochies</b>	<b>Lohar</b>	<b>Total</b>
<5000	13	3	6	1	23
5100-6000	15	2	0	0	17
6100-10000	30	0	0	0	30
10100-15000	41	0	0	0	41
15100-20000	24	0	0	0	24
20100-25000	12	0	0	0	12
>25100	30	3	4	5	42
<b>Total</b>	<b>165</b>	<b>8</b>	<b>10</b>	<b>6</b>	<b>189</b>

Source: Village Survey by the Author

In the other than Heads of Households category, Rajputs provided the greater support to the family head. Majority of them earned Rs.15,000 or more. Some family members of molvies, mochies and lohars also earned good sum of money. They were those who were either working abroad or had migrated to cities and were well settled there.

## **5.9 Social Setting**

### **5.9.1 Marriage**

The institution of marriage regulated the sexual behavior of individuals. “Marriage may be defined as publicly recognized and culturally sanctioned union between a male and female which was intended to be enduring, to give primary sexual rights in each other to the couple, and to fulfill further social functions” (Encyclopedia of Anthropology, Harper and Row, 197 p 257).

Many societies treat marriage as an exchange between individuals or groups. Commonly observed exchange in village was dowry by parents of bride and Haq mehr from the boy's side. Resources were accumulated from both sides of the bride and groom to help them settle in life. They were residing at groom's parents after marriage. Marriage was an attribute of many social, biological, cultural, economic and legal factors. Monogamy was the prevalent form of marriage. However, very few instances of polygamy were also found in the village but it was for the desire to have children since there was not child from the first wife.

### **5.9.2 Family**

Family has been defined as “a married couple or other group of adult kin folk who cooperate economically and for the upbringing of children; and all or most of whom share a common dwelling (Gough 1948). In Tapiali, family was the primary unit of production. The size and type of family is important in rural life, since it has a bearing on its economic, social and political role in the village.

Marital status was socially ascribed character of population marital status was classified into three categories.

- Married
- widow/ widower and
- Divorced or separated.

In the village, not even a single incidence of divorce could be known personally or registered in the Union Council till March, 2007. No doubt, clashes existed in couples at personal and family levels; the family heads amicably resolved them. Only three males were living separated life and two of them had their wives living in the same village.

The following table categorizes households on the basis of their size:

**Table 5-8: Family Groups by Size**

Family size	No. of Households	Percentage	Category
2-6	78	39	Small
7-11	111	55	Medium
12-16	12	6	Large
<b>Total</b>	<b>201</b>	<b>100</b>	

Source: Village Survey by the Author

The distinction of families between small, medium and large is subjective and is based on the perception by those living in village Tapiali. From the data collected, we see that medium sized families were 55 percent of the total households. Large size families made up 6 percent of total families, while small sized families contributed 39 percent to the family size.

### 5.9.2.1 Family Types

The concept of family type in traditional village in terms of family composition was extended or joint. Family composition pattern in Tapiali has been tabulated as under:

**Table 5-9: Family Types in Tapiali village**

Type	No of Household	Percent
Joint	90	45
Nuclear	109	54
Other	02	01

Source: Village Survey by the Author

Nuclear family was a prominent family type with 54 percent of families in this group. Joint family type consisted of 90 household making 45 percent of such families. This shows that almost half of the households lived in nuclear family set up.

It was found in Tapiali that two or more brothers were living in the same compound but they had separate economic units. Each brother was the deciding authority for his own economic unit family. In the village out of 201 houses, only 14 houses were headed by females. Field work in the village revealed the following reasons when women headed the family:

- a. Death of a male head;
- b. Absence of husband or son who is abroad and female is temporarily heading the household in his absence.

In case of the latter, male heads came back periodically as they were serving outside the country or in different cities of Pakistan from where they could not come back home daily.

### **5.10 Education Profile**

As per the official statistics of 1998 census, the village literacy rate was 82.4 percent as almost all families send their children to educational institutions irrespective of their financial position. According to 1998 census, the percentage of children attending schools in the village was the second highest in Kahuta *tehsil*, while the female literacy rate was higher than males in spite of meager opportunities available for them. According to the data collected from the village, out of Seven hundred and eighty males, six hundred and forty four 644 were educated and their percentage was 82.56, whereas six hundred and eighty four females were educated out of seven hundred and eighty and the percentage was 86.69 that was a living example of the society's transition to modernization, while the overall literacy rate of the village was 84.64 percent as explored by the researcher during the socio-economic survey in the village.

There were two government primary schools in the village: one for boys and the other for girls. For high school, boys and girls went either to Kahuta or to Hanesar which is Five to six kilometers away from the village. The boys' school became operational before the independence of Pakistan in 1947. Then it was a primary school. Boys from this school were working and had served in Pakistan army as officers JCO's, NCO's in the education and private sector etc.

Girls had equal opportunity to study in schools, but were constrained due to administrative problems at the village primary schools. The importance of education for girls



was also evident from the fact that though attending a co-education school was not approved in a conservative society of a village; a large number of girls still attended boy's primary school in the villages. Many of the boys and girls also attended English medium schools in near town Kahuta or Jurma, which is less than a kilometer away from the village. Students, both male and female, also visited the nearby city of Rawalpindi for college education.

### **5.11 Economic Profile**

The Rajput families of the village *Tapiali* were sharing the kin ship ties being offspring's of common forefathers and all were enjoying the close relationships being relatives, they were also having their relatives outside the village. Males were primarily engaged in farming, while some of them were engaged in off-farming activities to earn their livelihood mostly in the neighboring urban centers and abroad. They participate in farm activities as and when visit the village infrequently. Their females being the integral part of the family also participate in farm activity to help their husbands and brothers, though males in their household chores never helped them. In the patriarchal system of *Tapiali* village, despite working all the year round, women labor was not recognized by the society and were considered dependents on their husbands, who control financial resources of the family; they were viewed as appendages to men and tools to carry the family tree.

The wealth and economic resources of family were in the control of the head of family; while the women were not empowered in terms of having full power over the resources even in the changing socio-economic environment in the village. The table below provides the statistics relating to giving pocket money by the husbands to their wives to sustain their personal needs. At the same time it is interesting to note that only 16 males out of 201 households were engaged in

daily groceries either completely or partially. In remaining 185 households females performed these duties.

**Table 5-10: Pocket Money for Household Females**

Pocket money given	Pocket money not given	Provision of daily use commodities by the males	Total households	Percentage
06	179	16	201	100

Source: Village Survey for Research

The inhabitants of Tapiali were engaged in various types of economic activities. They ranged from agriculture to employment outside the country. The detail can be seen in the table

Table 5-4: Caste – Wise Economic Activities of the Heads of Households.

**Table 5-11: Economic Activities of Heads of Household**

Occupations	No.	Percentage
Daily wagers	17	8
Drivers	16	8
Army service	16	8
Working abroad	21	10
Teacher	06	3
Business	01	0
Govt. jobs	12	6
Jobless	12	6
Agriculture	20	10
Others	80	40
<b>Total</b>	<b>201</b>	<b>100</b>

Source: Village Survey by the Author

The table above shows that only 10 percent of the heads of households were engaged in agriculture and the remaining were involved in some other economic activities. This refutes the general impression that villagers are primarily engaged in agricultural activities. This does not seem to be the case in this village.

The heads of households were not the only bread winners for the family. In many cases, they got help from others to defray the family expenditures. These helpers were mostly engaged in non-farming activities except 10 who were working in agriculture. It has been recorded that 30 females were working in the formal sector of the economy. The occupation of other members in the household collected in socio-economic survey conducted during study has been tabulated in Table 5-12: Economic Activities of Earning Partners in Household (Other than Heads of the Households)

**Table 5-12: Economic Activities of Earning Partners in Household (Other than Heads of the Households)**

<b>Occupation</b>	<b>Male</b>	<b>Female</b>
Daily wagers	75	07
Drivers	29	-
Army	05	-
Job (different services)	61	4
Business	04	1
Foreign	42	-
Army Retd	22	-
Teacher	8	18
Agriculture	10	-
<b>Total</b>	<b>256</b>	

Source: Village Survey by the Author

We find that there were very limited options available to women of the village when it came to finding an employment. They were either daily wagers or working as teachers.

## **5.12 Agricultural Activities**

The village *Tapiali* was initially an agricultural rural settlement having an area of 825 acres and the economy was primarily agriculture based depending on rain water, but due to non-availability of sufficient water, the agriculture produce could not be exploited because there was no canal system developed by the government to facilitate the farming sector. The water was

available through monsoon rains in the months of July and August but unpredictable both in terms of quantity and timing. *Kharif* and *Rabi* crops were cultivated in summer and winter seasons respectively. Wheat and maize were grown in regular pattern. Different pulses and grams were also cultivated though to a lesser degree. Small scale kitchen gardens (Bara) were also present in the village, but they were entirely for family use and were not many in numbers. Wheat was the staple diet of the people and whatever little left after personal use was sold in the market.

Oral history of the village revealed that previously village was sufficient in its entire food production for domestic use as wheat, maize, pulses, grains, tobacco, fruits (apples, peaches, pears, apricot, strawberries, banana, oranges and black berries) were produced in abundance, even fennel and thyme were produced to full fill local population needs. It was thought as curse for the family to buy these products from market before the mechanization. But the production gradually decreased with the shortage of water, shifting the focus of young generation to other means of earnings and non-adoption of mechanized tools, recommended variety of seeds and pesticides. The people of the village were forced to buy grain and other daily use agricultural products from the market due to downfall of the agriculture sector of the village.

The village *Tapiali* being a rural area was having the characteristics for a viable agriculture, but it was either ignored for want of extreme labor or for its inefficient productivity.

The village had two types of land:

- a. Baasa (gives one crop a year).
- b. Lapara (can be cultivated the whole year round).

Thirty percent of land in the village was Baasa, while the rest was Lapara. Based on landholding size, people shared the village collective forest (*shamilat*), from where they cut

firewood and also graze their animals. In 2007, the size of agriculture land owned by household as recorded during the survey conducted for this study was as under:

**Table 5-13: Size of Land Holdings in village Tapiali**

Areas in Kanals	No. of households	Percentage
≤ 10	69	34
11-20	32	16.2
21-30	29	14.4
31-40	27	13.4
41-50	35	17
>50	09	5
<b>Total</b>	<b>201</b>	<b>100</b>

Source: Village Survey by the Author

Most of the families had land more than they actually cultivated. Key informant, Rasheeda Begum, said, **“twenty years back, all the fields in the village were covered with crop, but this was not the case anymore”**. During fieldwork, concerted efforts were made to find out reasons for the existence of fallow land.

**Table 5-14: Reasons for not Cultivating Land**

Reasons for Not Cultivating Land	No. of responses	Percentage
High capital input	115	29.04
Lack of interest	110	27.78
Low economic output	93	23.48
Lethargy	70	17.68
Alternative means of income	8	2.02
<b>Total</b>	<b>396</b>	

Source: Village Survey by the Author

The Table 5-14: Reasons for not Cultivating Land shows that the primary cause for fallow lands was high capital input and low economic output, which led to lack of interest in agriculture.

### 5.12.1 Role of Women in Farm Activities

All female farm workers performed task of grass cutting, weeding and grain storage. The task of crop cutting was now shared with daily wagers. Chaff was also sold along with grains mostly from the farms. Livestock in the Tapiali village were raised for milk and meat. Poultry and goats were very important to the rural women in Tapiali for they were often the only source of income fully under their control.

Women made a considerable contribution to livestock production and that contribution was more visible than their work in crop production. Before mechanization women who had been involved in caring and rearing of livestock and poultry in Tapiali carried out wide range of tasks such as making feed concentrates, feeding, collecting fodder, grazing, cleaning animals and their sheds, making dung cakes, collecting manure for organic fertilizer, as well as milking, processing and marketing of animal products (making ghee, selling eggs, etc.). Now their aim of rearing animal has changed as discussed before, so their efforts in livestock have reduced. No doubt, livestock was their responsibility. Agriculture was becoming progressively mechanized but traditional female farm operations were still out of mechanization in the Village. Many women engaged in family farms were still reported as economically inactive.

There were one hundred and seven households reporting the working of females on farms irrespective of their nature of work on the farm. This shows that Fifty three percent of the households having women farm workers. All these were informally working on the family farms:

**Table 5-15: Female Farm Workers**

<b>Female farm workers</b>	<b>Non-farm workers</b>	<b>Total household</b>
107	-	107
-	94	94

Source: Village Survey by the Author 2007

### 5.12.2 Age of Female Farm Workers

Females between age group 26-30 and 46-50 were more active on the farms. In this age group, they had other responsibilities of family like child bearing, taking care of already existing children, taking care of elders in the family and taking care of male members of the family. This shows that one of their prime task was care giving. Women of this age group were also economically active “professionally” but in reality very few were working in the formal sector. It was clear from the gathered records that economically active group age between 15-60 years all were working on the farms as invisible workers. Details can be seen from the Table 5-16: Age of Female Farm Workers :

**Table 5-16: Age of Female Farm Workers**

Age	No. of females
15-20	10
21-25	16
26-30	18
31-35	29
36-40	13
41-45	26
46-50	29
51-55	16
56-60	10
>60	6

Source: Village Survey by the Author

Most of the wives were working on the farms, followed by daughters in law, mothers and finally daughters. The details can be seen as in Table 5-17: Female Farm Worker Relation with Head.

**Table 5-17: Female Farm Worker Relation with Head**

<b>Relation with head of Family</b>	<b>Number</b>
Wife	58
Daughter	21
Daughter-in-Law	49
Mother	45

Source: Village Survey by the Author 2007

Similarly, the number of female earning partners within family employed in the formal sector of the village is Table 5-18: Female Earning Partners within Family in Formal Sector

**Table 5-18: Female Earning Partners within Family in Formal Sector**

<b>Relation with head</b>	<b>No. of persons</b>
Daughter	12
daughter-in-law	5
Wife	8
Sister	5

Source: Village Survey for Research

All had social reasons for that, as wives were life partners and concerned with the fulfillment of needs of the family along with her husband. Through very few had monetary control on the production, but they were socially bound to help husbands in traditional female farm operations. Then second in number were daughters in law. They were also socially bound to work in field not only because their invisible participation was traditionally required, but also to assist their mothers in law on the farms. Third active relation on the farms was mothers. It was very interesting to know their reason: they wanted to contribute to economic activity, and personally, most of them felt that they were affiliated with the task. Though they were aged or did not perform hard tasks but still planted seasonal vegetables with hoe, cleared the grains, prepared chilies for storage, made pickles, advised young females to store, and prepare dry food



for winters like *panjeeri*, *Daal*, (sweets) etc. The last two were only prepared when one gave birth to a child or was sick complaining of bone aches.

### 5.13 Extent of Mechanization in the Village

Though subsistence agriculture was common, the farm economy had experienced mechanization. Farm machines in common use were tractors and threshers. However, due to economies of scale, the farmers were not able to own tractors and threshers. These were mostly used on a rental basis. Farm machines like tractors and threshers were common on farms, in sowing and harvesting seasons. It is also important to note that operations such as weeding, grain storage, chaff storage, manuring (partially) were considered as female preserve and were still not mechanized. The physical and cultural landscape of the village had changed due to the advanced use of mechanization. Use of artificial fertilizer and pesticides had also been recorded in the region.

### 5.14 Animal Husbandry

Animal husbandry was an integral part of rural agrarian economy of the area.. Animals added income in terms of both kind and money and were mainly the responsibility of females. Cows, buffaloes, oxen, goats, hens, donkeys and mules were common in the village. Common grazing land and grasses from crops served as their food.

**Table 5-19: Livestock in Tapiali Village**

Type of livestock	Total No. of Households	Percentage
Oxen	163	30
Buffaloes	26	5
Cows	76	14
Goats	98	18
Hens	186	35

Source: Village Survey by the Author 2007

Milk of buffalo, cow and goat were used within the household and extra milk was sold in the nearby city. The survey indicated that forty seven percent of the village households (ninety-four in number) fulfilled their milk needs from the domestic production of milk. Out of these ninety-four, Seventy-two households, thirty-six percent of the totals could produce additional milk for sale in the market. But this milk was not enough to feed the village population. So, they had made alternative arrangements like tetra-packs and powdered milk to cater for their needs.

### **5.15 Natural Vegetation**

Due to rainfall dependent economy, the village had varying mix of vegetation including forests. The forest of Tapiali joining Punjar formed important forest reserve of Pakistan. *Kahu, Phulahi, Drek, Talhi, Toot, Baer, Pipal, and Kikar* trees were common. Grasses cover hills and plains of the village. *Kachnar, Sanatha, Blakar* could also been seen everywhere. Different fruit trees such as walnuts, Banana, apples, peaches, pear, mangoes (*Aachari Aam*) and almond were also present, whereas planted Mokari, Bhanga were common shrubs of the village. In the forest, Jackals, peacock, quail and partridge were common. Domesticated animals included buffaloes, cow, ox, bull, donkey, mules, goats, hens etc.

### **5.16 Non-Agriculture Activities**

Village economy was not totally, dependent on agriculture. The alternative sources of non-agriculture activities included business, employment outside the country, government and private jobs

In the village, only one head of household was involved in business. He had a small general store on main road in village Duphri. According to him, he earned better now compared to when he was farming due to low productivity in agriculture.

In most of the cases, those households were financially better off whose members were employed outside the country. Most of these members had arranged job of their family members in the same country in which they were working and this raised the income of the whole family. With very few exceptions, families of such earners were not engaged in agriculture. The reasons they gave for this action were:

- Socially it was not possible for the females to arrange tractors and threshers.
- Women were busy in the household chores and also had to manage many of the tasks outside house (e.g. going to near town Kahuta to purchase different things needed on a daily basis).
- Crop needed care and time and they did not have the energy for that.

They also had to undertake social engagements and attend to their relatives outside the village in the absence of their husbands; sending children to school on time; preparing food and looking after other things. So, no time was left to practice agriculture.

### **Case study 1**

Ishrat Bibi was 41 years middle-aged woman. She told that her father was very rich farmer of the village and she saw her mother and grandmother doing farming operations specialized for females in the village. She got married in the family of farmers. She was also actively helping her father-in-law in female specialized farm activities along with her mother-in-law. Their family was the prosperous family of the village. Her husband got job in the Pakistan Army, and he went out the village and she was living with her in-laws in the village, with time her father and mother-in-law gave up farming due to their age factor. As she was alone in the family to take care of the whole family matters with the help of her father-in-law initially, but with time due to his age she was alone to take care of kids, socialization of family. Bread

winning was now totally at his husband's responsibility, and he is very well supporting the whole family. They have made new house in the village and two shops in near town. She has left not only farming but also related activities like animal husbandry. She has to work on the farm and related activities and take care of other family matters outside the house and even within it.

There was no option left for her so she was dragged away from the farm due to her heavy non-farm schedule.

She said, **“It is not a matter of one or two days or a week. It is a six months package, for this you are bounded with the farm. It is very difficult to work on two fronts; better choice for me was leaving farming.”**

Still, there were a few families who practiced agriculture because they had elderly members motivating them to cultivate, or they did not like the flour purchased from the market. All such families had helping hands to manage farming operations.

Most of the adult male population (forty percent) was engaged in non-descript and non-definable jobs. They were mostly part timers or did odd jobs. Their economic condition was quite bad and they mostly remained from hand to mouth.

Females were working in the family fields as invisible workers. They were increasingly playing their role in the formal sector of the economy. Economic base of the village was fastly changing from farm to non-farm activities.

### **5.17 Source of Drinking Water and Water for Daily Use**

Water is both a basic human need and an important productive resource. It helps to improve domestic hygiene and health and enhances childcare as well as crop and/or animal care

(Zawarteveen 1997). Access to clean water was likely to have a marked effect on the amount of time women have for other productive activities or for reproductive activities such as childcare<sup>29</sup>.

More than 1 billion people live in poverty around the world, and a great majority of them were women. Women's poverty results in widespread violations of their human rights. When a woman faces a lack of access to adequate housing, food, or health care, her human rights were violated. When she lives in an unsafe and unhealthy environment or lacks access to clean water, she was not enjoying her fundamental human rights to a life of dignity and to an adequate standard of living<sup>30</sup>.

As there was no water scheme providing water in the houses of Tapiali village. One hundred and fifteen households used well water for drinking and eighty six got water from tube wells. The latter were located in people's own houses or in their neighborhood. The follows table gives the details:

**Table 5-20: Source of Drinking Water**

<b>Water source</b>	<b>No. Of household</b>
Wells	115
Hand Pumps	86
<b>TOTAL</b>	<b>201</b>

Source: Village Survey By Author

It was primarily the duty of females to arrange water for the family. They carried water on their heads for miles. Three females used to carry drinking water for their own use as well as water for general needs. They were using their time resource for the family. Females of households responsible for fetching water spent three to four hours daily, which was 1095-1460

<sup>29</sup> para 35, Economic and Social Council Substantive session of 1999 Item 14 (a) of the provisional agenda

<sup>30</sup> Women, Human Rights & Poverty, The People's Movement for Human Rights Education (PDHRE) / NY Office. e-mail: pdhre@igc.apc.org

hours in a year. Sometimes they had to carry water on their heads more than one time every day. Fifty seven percent of households of Tapiali village arranged water from outside as drinking water was not available from most of the tube wells. The tube wells ran dry in high summer seasons in most of the households. Details can be seen in the Table 5-21:

**Table 5-21: Water for Daily Use**

Sources of water	Within House	Mix means	Outside the hose
Household	86	71	115

Source: Village Survey by the Author

### 5.18 Employment Profile

It was very difficult to estimate employment in rural areas. As economic activities were organized at household level e.g. selling milk, rearing animals, cutting wood etc., it was difficult to distinguish between visible workers and invisible workers and between economic and non-economic household activities. In general, a person above sixty years of age in the village was considered too old to work as a full time worker. If he was still active, he was regarded as a part timer. Similarly, a person below the age of 15 years was considered too young to take-up work seriously. He was also called a non-earner. The demographic profile of economically active male and female population in Tapiali village is as in Table 5-22:

**Table 5-22: Economically Active Population in Tapiali**

Age groups	Male	Female	Total	Percent
15-60	541	545	1086	69
1-15	188	172	360	23
60+	51	72	123	8
Total	780	789	1569	100

Source: Village Survey by the Author

The table above showed that sixty nine percent of the population was economically active. Data collected from the village indicated that thirty females out of seven hundred and eighty nine were paid workers. Out of fourteen female heads of household, only ten were economically active, while the rest were relying on the absent male heads of family to support them financially. Two hundred and fifty six males other than heads of households were supporting their families economically. These were either sons or unmarried brothers of the family members.

Analysis of the population profile at Table 5-22 above enables us to calculate dependency ratio for the relevant village population. This has been done by using the following formula:

$$\text{Dependency Ratio} = \frac{\text{Population between 1 – 15 yrs} + \text{Population greater than 60 yrs}}{\text{Total Population}}$$

The ratio comes to 31 percent of the total population<sup>31</sup>. The economically active group (between 15 – 60 years) numbers 1086 which was 69 percent of the total population<sup>32</sup>.

Out of the total economically active population, dependency ratio for males and females was thirty-four and thirty-five percent respectively. But in reality, all the working females except one hundred and seventy three were invisible farm workers and thirty were in the informal sector of the economy. The rest were dependent on the males. Similarly, in case of males of working age, only four hundred and fifty-seven of males were actually earning. So, in reality thirty females and four hundred and fifty seven males were working in the formal sector. This group of thirty females and four hundred and fifty seven males were sharing the economic burden of total population of the village.

<sup>31</sup>  $(172 + 72) + (188 + 51) = \frac{483}{1569} = 31\%$

<sup>32</sup>  $(541 + 545) = \frac{1086}{1569} = 69.22\%$

### **5.19 Climate**

Tapiali has five seasons: winter, spring, summer, rains and autumn. No record of weather was available for the village but in general, classification, this area belonged to sub-tropical continental lowlands. The summer season was at its extreme in June and July. The rainy starts by the end of July and lasted until the end of September. Winters ran up till March, and after that is the beginning of spring season.

### **5.20 Flora**

Flora is the natural plant growth as well as domesticated plants those can possibly be grown in the local environment. Mixed vegetation was found in the village, on hills around the village. Pine and *Kahu* were common. (*Kahu* is a sister plant of Olive). The forest of Tapiali joining Punjar forms important forest reserve of Pakistan. In the forest, *Kahu*, *Phulahi*, *Drek*, *Talhi*, *Toot*, *Baer*, *Pipal*, and *Kikar* trees could be seen. Grasses covered the hills and plains of the village. *Kachnar*, *Sanatha*, *Blakar* were common shrubs, while different fruit trees such as walnuts, banana, apples, peaches, pear, mangoes (*aachari Aam*) and almond were present. Where ever planted, *mokari* and *bharg* were the usual shrubs of the village.

### **5.21 Fauna**

Fauna is the zoological life possibly habituating in the local environment. Tigers and Leopards used to be very common in forest of Tapiali village. However, as result of intensive hunting and reduction of forest cover, they were hardly seen. In the forest, jackals, peacocks, quails and partridges were common and could be easily seen during the season. Domesticated animals includes buffaloes, cow, ox, bull, donkey, mules, goats and hens etc.



## 5.22 Sports and Crafts

Sports and games were the source of entertainment in village Tapiali. In the village, according to the oral history told by villagers, different sports were common for male. These were kabadi, swimming, guli danda, pithogarm, marbles and khandori. Girls usually went for swimming, played pithogaram and like to play on the swings hanging from the trees. Now a day, the village boys were no longer interested in playing these games regularly. They had other opportunities like T.V. movies, video games and could go easily to near town Kahuta because of improved transportation system.

### Case study 2

Abdullah was 17 years old his father is working outside the village, comes back after every month to give them money, and stays for 1-2 days with them. After a year, he .comes on one-month leave from the employer and at that time, he used to stay with the family for long time. His mother was taking care for farm animals and he helped her, as he was the eldest son in family of five kids. His brothers and sisters are going to school and her mother is taking care of the family as his father is working outside the village. He has recently completed his high school. When was asked for his hobbies, he told **“whenever I find time in any part of the day before sunset, I go to Kahuta; it is just a matter of 20 minutes. There I meet my friends from different villages; we roam the in bazaar and chat”**. He also added, **“I like cricket but I cannot play it daily. I use to be the captain of my school cricket team. Now there are many games on mobiles and video game handsets”**.

Females now pass their time not in learning skills, which were very common before such as knitting, crochet, embroidery and preparing and preserving foods like panjeri daal, achar, muraba. They rather prefer to watch T.V, read digests (glamour and fashion magazines), use

mobiles or go to near town Kahuta. It has been observed that females in group leave for town and young girls were accompanied by family member or near relative. Their visit to town was with some purpose, like visiting a doctor or necessary shopping. None of them could give enjoyment and recreation as a reason for the visit.

### Case study 3

Seventy-five years Khan Begum was full time farm worker. She told that since her childhood, she saw her mother and other females in the village preparing different craft projects like crochets, knitting, embroidery, jute products. She added that these activities were performed along with farm operations and food preservation. She also told that riddle, story and joke playing were the oral entertainments along with physical sports like swimming, pakran pakrai (run and catch), geetay (stones) .etc. Now no one in her family was performing full time farming. Her daughters have totally left farming after their marriages. Her daughter in law is out of the farm because her husband was working outside the village, and she has lot of other responsibilities of the family. So it's difficult to continue such activities (these were the ideas of her daughter in law which she added when her mother in law was extending her views). She commented in her detailed interview for the presently performed females activities, said, **“It’s a sign of relief for them, as they had nothing to do on farms. This relief has made them “free” and now they feel “boredom”. They had plenty of time and new ideas for killing available “free” time and spending money”**.

For crafts and skills, she told the researcher that, “there was a time, when women were very busy all day. Getting early in morning before sunrise, milking animals, setting them to forest, managing the milk, preparing breakfast for family, taking the breakfast for the males working in field, coming back to home cleaning the house and animal court yard. Taking the

ding to fields on way back prepare the lunch. After which they have nothing to do till Asaar prayer (afternoon prayer) time. During this time, they relax and do knitting, crochet, and embroidery. By sunset animals are back and they prepare dinner and the day is over". She said, "We also worked in fields cutting grasses, weeding the crop, storing the grains and chaff". She mentioned methods of preparing ghee and other milk products at household level.

In the village, it was observed that most of females of less than 22 years of age had a readymade excuse for not working: burden of studies. Their mothers provided them shelter for their excuse. In fact, they themselves initiated this.

### **5.23 Festivals**

There was a shrine of *Baba Fazal* in the middle of the village located in the central graveyard where devotees and general public come to offer *Fateha* for the saint and for getting the blessing of Allah through the shrine by performing different kinds of rituals. On 4<sup>th</sup> Shabaan (8th month of Islamic lunar calendar), Urs of the saint was celebrated at small scale by arranging one or two food and sweets shops around the shrine. The annual festival of Urs was arranged by *molvies* (Muslim clergy) of the village who were the disciples of *Baba Fazal* and his shrine was famous among the masses for its miracles based on myths and superstitions:

- It was a common belief of the that *kaas*, a water stream flowing in the opposite direction was ordered by the saint Baba Fazal to change its course because it was converting into a tributary of river Jhelum that could damage the village and its neighboring settlements.
- There was a very common myth prevalent from centuries that the shrine of *Baba Fazal* was providing spiritual healing to the Malaria patients.
- According to miracle of the shrine, a pregnant lioness visits the shrine in moonless nights to pay tribute to the saint. The researcher herself witnessed the lioness roaring and walking

around the boundary wall of the shrine, but it could not be established that the wild animal was pregnant or not because it was not possible to judge being an ordinary academic researcher.

- According to the fourth miracle of the shrine as told by the respondents and other visitors of the shrine that any innocent charged for a crime by the police if visits the shrine every Thursday could prove his innocence against the crime in which he was charged.
- The fifth miracle of the shrine was relating to the robbery and looting the village households. A thief either from the village or from outside, if commits a robbery, could not take the amount of money or costly jewelry out of the village. The researcher visited the Nazim Raja Gulbahar to verify the contents of the miracle, where the elder sister of Raja Gulbahar told that it was experienced by their family as narrated by their grandmother that one of her servants who was raised from his childhood by her, stole a pouch of gold coins and disappeared, after few days, a man from the village found him wandering in the forest having lost his eyesight and with deteriorating physical condition, he did not know the real story of theft, he brought him to their house. The servant handed over the pouch himself and told, *“Some un-seen power was not allowing me to go outside the village after trying different routes and lost in the forest, my eyesight was going weaker and weaker day by day and finally I became blind while my physical condition deteriorated and I could not properly walk”*. That was the real occurrence explained by a noble and educated lady about the miracles of the saint and shrine.

A similar kind of episode was reported by *Molvie Shah Sahib*, a 54 years old man and said that few years back a boy of nearby village tried to rob a government installed water pump from the village and he faced the same situation. The vehicle in which he was carrying the pump

for taking it to the market for sale all of a sudden became out of order and refused to move forward while the reverse gear was intact, he moved the vehicle backwards just to leave the village but that was not possible for him, he was scared of the situation and left the vehicle and water pump there and ran away. The villagers were of the view that it was the miracle of Baba Fazal that no one was permitted to take anything out of the village illegally.

## Chapter 6

### Mechanization in Village Creating New Scenario

#### 6.1 Introduction

None of the modern technologies to increase agricultural production and productivity in developing countries has attracted as much controversy as the agricultural mechanization technologies did.

The importance of technology to agricultural development especially in less developed countries is widely recognized. This is predicated on the observed impact of this technology and its potential and actual contributions to the development of agriculture. In developing countries like Pakistan where a greater proportion of the population lives in rural areas, agricultural technology could also provide a potential means of increasing production and subsequently raising incomes of farmers as well as their standard of living. It is common to observe among Pakistan farmers that they have relatively small sizes of farms, family labor is the predominant production factor; there is relative use of capital investment inputs as fertilizer, improved seeds, chemicals or farm machineries. However, traditional method of farming predominates in most localities, resulting from a perennial low input-low output relationship. An attendant low productivity constitutes the hall mark of traditional agriculture as practiced in Pakistan; and farming based entirely upon traditional agriculture is inevitably poor. It has been established by many authors that the involvement of rural women in agricultural production has been of significance to the country's economic development. Empirical evidence has revealed that women perform such works as hoeing, sowing, and weeding, harvesting, processing and other activities related to agricultural production. The socio-economic and cultural activities of

Pakistan rural women could vary across regions. The predominant occupation of rural women, especially Pakistan is farming. Women agriculturalists are associated with traditional subsistence and low-yield food crops, poverty, lack of influence and the inability to adopt crop and husbandry innovations. Pakistan is blessed with great agricultural potentials necessary for the production of agricultural crops. Among the many crops produced in this country are wheat, cotton, rice, maize, groundnut, fruits and vegetables. Women in the area are known to significantly participate in the production of these crops. A number of production technologies are made available to farmers in this area for improved production. It is therefore, the focus of this study to determine the relationship existing between socio-economic characteristics of rural women farmers and their adoption of agricultural technologies in Southern Ebonyi State, Pakistan. Specifically, the objectives are to determine the level of adoption of agricultural technologies by the respondents; establish the relationship between the socio-economic characteristics of respondents and adoption of technologies.

## **6.2 Mechanization Experiences in Asia**

Broadly speaking the Asian experience of farm mechanization followed the global pattern, general agile and quick changes has affected small farmers in South Asian countries since 1960s. Inaugural was with Green Revolution having dynamic and significant connotation. The incentive for Green Revolution was the technological enhancement in high-yielding seed varieties, accompanied by use of fertilizer resulting in many fold increase in farm production. The biological technologies in effect provided the motivation for mechanization. In the beginning, these technologies were a charm and considered most suited for irrigated farming systems “better-off” farmers first adopted these. Afterwards refocused and included the small farmers in more liable, rain fed areas.

### **6.3 Agricultural Mechanization**

We know the critical issue in the mechanization of the village is the mechanization of agriculture. All spheres of life in the village were undergoing a change of its own. The village presents an interesting case in this regard, because, unlike other Rainfed areas of Pakistan, the introduction of mechanized agriculture came quite late and through very informal processes. Thus, we are able to conduct a pertinent and timely examination of the process in the village, currently in the critical stage after introduction but prior to, and without assuming, widespread use and unanimous acceptance. To clarify, although mechanization generally refers to the introduction of any type of machinery into the agricultural setting, most pertinent to the village were the influx of tractors and threshers. Thus, when we speak of agricultural mechanization, it is primarily the process of *Tractorization and Thresherization* that is taking place.

### **6.4 Agriculture in Tapiali**

Agriculture has been called “an argument with nature” (Batie 2001) for its promotion of a limited number of plant species in contrast to nature’s tendency toward diversity. In the village, this argument is a difficult one, given the harsh realities of generally rain dependant produce, and unpredictable rains. Generally in past and in few of the cases in present, farmers subsist by cultivating enough land to feed their families and by selling any leftover portion, ideally 30 to 60 percent of the crop, to obtain other necessities (Sanders *et al.*, 1990).

Two crops were harvested in the village, maize and wheat at time of village survey in 2007. But according to different case studies and in depth interviews pulses and other cereals like barley and millets were harvested along with wheat and maize before tractorization) whereas, wheat was the staple food, used to feed most families. Hundred percent of cultivated land is dedicated to two crops. Maize is often cultivated on fewer farms as compare to wheat.



There appears a clear divide among those who can harvest, who are harvesting and who cannot harvest. Because of heavy inputs in form of rents for machines, and diversification of livelihood are among the many reasons for creating this divide. Apparently, in the village, there were three classes, one of harvesters, second of non-harvesters and third of potential harvesters. The rise of agricultural mechanization (in the case of the village tractors and threshers) has been typically attributed to the promotional efforts of the industrialized powers (Sanders *et al.*, 1990). These targeted efforts have led, and continue to lead, to the importation of machinery whose appropriateness to the country's landscape (especially in Rainfed areas of potowar) has never been wholly considered (Ahmed and Kinsey 1984). Tractors and threshers were presented to bring certain advantages, such as increased labor productivity, contract work and rental opportunities for owners and reduced drudgery (Ijaz 2007), there are also significant drawbacks to these machines use in Rainfed hilly potowar areas. The cost of a tractor is typically several times an average farmer's annual income, and this discriminatory factor has been compounded by fuel and maintenance costs and unpredictable rainy season. Furthermore, tractors and threshers lead to the exploitation of women, since it is the role of women to weed and harvest the fields at the end stage of cultivation (Tersiguel 1995). Running and maintenance of tractors and threshers also require increased training, cause greater soil erosion, and demand large areas of land. On small sized farms, it is difficult to operate heavy agricultural machines. It also creates problems of land ownership, in cases where the boundaries of adjacent farms were destroyed or damaged during the mechanized operations on the farm. Thus, it is not evident that the tractors and threshers are the most appropriate tool for the farmers in the village.

## 6.5 Mechanization Particular to the Village

Within the village, the rise of mechanization has been very slow relative to the process in other regions of the country, as Punjab plains had been the target of development projects since the flourishing Indus valley civilizations (3300–1700 BCE, flowered 2600–1900 BCE)(Posseehl 2002) . Mohenjo-Daro and Harappa were two important centers in their own times (Kennedy 2000). Though the area is part of Soanian civilization (ca. 500,000 to 1,250,000 BC) (Rendell *et al.*, 1989), which is mother of civilizations in subcontinent.

### Case study 4

Just as importantly, the traditional farming tools have an element of traditional prestige, since every farmer's ancestors tilled in the same fashion—farmers thus believe that they are practicing true farming (Blench and Dendo 2006). With time, these traditional instruments of prestige in next generation lost their importance and were replaced by machines. Muhammad Ilyas, 66 years old was full time farmer when he was young. He completed his diploma in electrical engineering in 1961. He worked for the WAPDA(Water and Power Development Authority) but left his job which was really highly paid job as his first salary was three hundred and seventy three Pakistani rupees than. He left the job after two years and came back. He said there I was subordinate to my boss, and on my farms, I was boss of myself. My father owned half of the total land in the village, and we were never dictated and were given due par in all village and family decisions. Our parents were strict for our study and brought-up and never encouraged us to pass our limitations. We could not imagine misbehaving with anybody in the village. Our family was and is enjoying due respect in the village. May be this was one of the reasons to leave my job, and we were well-off farmers in the village. When I left my job, my grandfather was very happy, as I was his eldest grandchild. He while remembering his past told

that he got five pair of bullocks and “junth” ( Yoke), haal (plough), and all related farm operation equipments and tools for the farming operations. His family owned number of fine specie buffaloes (He told that his family had Neeli bar, Sahiwaal and panj kaliaynni specie buffaloes), cows and goats. Their family also got five horses and two donkeys. He was very happy to own all this. His muscular power in combination with the tools produced enough resources from the farm not only to support family needs but also to add to family annual savings. He told that, village farmers have continued to farm as they had for generations depending on the strength of the animals to plough the fields. They also used other tools namely sickle, hoe, fork, chajj, and karahi, for different farming operations. These instruments were considered both reliable and flexible, allowing farmers to till almost any terrain and size of farm. As in the village, farm size is different, depending on the family inheritance (In same study- on village profile see section 5.8.1 mentioning the village lineage pattern). He said with time we switched to machines because of the modern trend of farm machines in 1970’s. This created an image of abundance of work force in family. My youngest brother has shifted to Germany because of this false image. Everybody was shifting to machines for ploughing and threshing farm operations, “it was fashion of that time”. Immediately displaced labor was shifted to nonfarm jobs but with time it was considered to hire machine and perform farming operations and no doubt the real issue was the cost of machines. He laughed and said, **“You can eat your bullock when of no work but cannot eat tractor when it turns in to junk. It is very interesting that in our village, nobody have its own tractor, so you cannot even get “pattisa” for that<sup>33</sup>”**. He said people as were not getting enough out of their farm to support their family growing needs and they have apparently, got the option to squeeze or resize the farming practice along with nonfarm jobs.

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<sup>33</sup> *It is not only in the village, but common practice of rural Pakistan that, reusable plastic bottles, metal junk and now even clothes can be exchanged for goods for daily use like plastic pots or least of worth for sweet like “pattisa”.*

He told, **“Mein haraan aan ka ina (new generation of farmers) ni maat mari gaai kaparaiyaan cheeszaan na mana karnay. karay naa tractor or thresher naal jaan bachanay. Yu appni qableeat , meraas or tarkay sun inkari aa.”**

“I am astonished that they are feeling pride for what they do not own, they rent the tractor or thresher to save their souls. They deny their inheritance of talent and ownership”.

Initially the animal driven plough remains heavily relied upon and the presence of tractors remain sparse. Because of the heavy inputs in form of rents and cost of machines if purchased has reduced their use along with number of other factors. In the village, people left animal traction plough, in charm of more production but after not fulfillment of their hopes, they have not returned to traditional methods. Their way back was blocked or went blurt, due to diversification of livelihood and number of others factors.

To support a farming culture based around mechanization, three conditions must be present:

- i. Sufficient levels of income,
- ii. Market opportunities, and
- iii. A sound cash crop.

The income levels in the village have been improving steadily, but the families were leaving agriculture and economic base of village is experiencing the shift from agriculture-based economy to non-agro based economy, but the rise in income of family was the result of non-farm services.

Interestingly, agricultural mechanization in Tapijali has also been accompanied by a shift in the identity of the farmer. Paradoxically, the *true* farmers want to leave farming, and in reality have left farming, their farm produce is only for their family food and very little which is , if

available is sold to compensate mechanized inputs, while non-farm income is supporting the family primarily. Young generation is not able to estimate the worth to produce from the farm other than subsistence. It is very hard from their end that no one wants to be full time farmer seeing the discrepancy between their own efforts and the output from the farm. May be, with community development approach which is in fact Sen's capability development, initially few lead to the possibility of farming as an investment.

## **6.6 Tensions between Land Tenure and Agriculture Mechanization**

In this section, it has been tried to understand the relation between agrarian land tenure and agricultural mechanization. Tensions arise on several fronts. First, the increasing presence of tractors affects labor and production in Tapiali village, since new farming, techniques had dictate changing land needs. Second, tractors create pressure for land acquisition, which raised direct conflicts with policies of land ownership rights by the government and inheritance law. Third, market tensions aroused between the need for competition and the need for alternative activities in the economy. Finally, political pressures from the international powers exist that may make the combination of tractorization and current land tenure policies untenable for the future.

### **6.6.1 Effects of Tractor on Labor and Production**

Land needs changed with mechanization; farmers using tractor must till larger areas to ensure sufficient incentive for their investment in mechanization. The tensions created as result of this expansion might be less severe, if the change leads to less labor exploitation and improved food production. Unfortunately, this has not been the case.

Clearly defined social roles in the history of the village dictated that males would plough the fields and females were assigned with the duty of weeding and harvesting. As tractors

prepare vast area of land with less labor consuming short time, approximately two acres in an hour. In this situation, males were free to find new economic venues for them. They were also left with additional time and most of them were displaced and their short-term tilling employment on family farm was eliminated. It is not only their family farm job was lost; it also created an alienation in Marxian term from farm, family, and farm produce. In intangible terms, they were emotionally alienated from family, community and their relations were mitigated in fabric of the village's society. As in the village, no harvesting equipment had been so far introduced, which was primarily the females' job. Mechanization has lightened the work of males and in reality pushed them from their work sphere, but apparently sharing and reducing the burden on shoulders of males. Facilitating the males in their physical labor and providing them with extra time saved because of mechanized ploughing by tractor. Majority of males found part time or full time non-farm job and as matter of substance the alternate non-farm income of individual or family and heavy input on the farm in form of machines (as in the village farm machine used were rented from outside the village) ,males lost their interest and power to plough. Perhaps more significant, however, is the exploitation of women that tractors provoked (Tersiguel 1995). Almost strict separation of tasks between men and women precludes the possibility of reallocating to men the extra harvesting duty that tractor-tilled fields created. However, as males are no more engaged in family farm ploughing by physical involvement for number of days, rather they preferred to rent tractor and females have to work extra in the house to prepare food items for the tractor operators. As the tractors were rented on hourly bases and their high rental, cost motivated the males to reduce the land to be ploughed. This in return reduced the food production from the family farm.

As for production, though tractors allow for increased output, there is no evidence that tractor farming has a positive effect on agricultural yields (Binswanger and Pingali 1989). In the village it has been observed that farmers were not faring though improved production per unit of land is a function of better quality tillage, and tractors provided no advantage here vis-à-vis animal plough farming. Thus, agricultural input has increased, and the output in form of food crops in fact decreased as a percentage of cultivable land. Total food production may or may not increase in absolute terms, but the disproportionate shift towards non-farming activities, whose economic benefits revert solely to the village social and economic base at collective level. It represents a relative loss to a society, which is now struggling to satisfy food needs by market bought food and compromising on nutrition of family as well as community.

### **6.6.2 Pressures on Land Acquisition**

In the village, all land is divided among the families on the basis of lineage and law of Islamic inheritance (for details village lineage pattern can be visited in chapter No 5 of same study). The apparent problem within village is the small size of farm as well as dispersed fields in different parts of village by the same household. “Substantial access to land” persists the case in the village Tapiali. However, there are no clear incentives existing for tractor owners to expand their holdings exponentially, and, under essentially open access conditions. It is also worth to remember that heavy inputs in form of rent of machines (tractor and thresher), fertilizers and certified seeds.

#### **Case study 5**

Muhammad Murtaza 79 years old farmer known by the name of “Maawan” (mamoo/uncle) Murtaza by everybody in the village except those who are above 60 years. He

was also full time farmer and was one of the well-off farmer in the village. He told how he used his physical power in combination with animal power to produce maximum from the farm for the family. He said it was considered insult for the family to leave any parcel of land without crop and unattended. They care for the land and produce as their family and owner. More they care more they get from the land just like **“Daakho ji piyaar hi piyaar kichnaa”**, he was saying love gets love. My farms produce money for me as well as pride; I raised my kids and sent them to school. I arranged the marriages of my daughters in honorable manner and gave them heavy dowry. My land helped me to keep my pride and fulfill my responsibilities. He said , **“Allah sun baad maraah daand mara sahara sa”**, (After God I trusted my bullocks). He told that with the introduction of farm machines in the country and in the region, few in the village opted machines just as symbol of pride or as trendsetters. He commented in his detailed interview, **“shuru wich saray hi madraan machine peechay paai gay, sarayan hi ooi rah napi kinddi, haakay hi piyu nay putar ja aa. Innan parwah ii nahi kitti ka iinan na palah kis wich aa”**

“People initially shifted to modernized, mechanized agriculture, everybody followed the suite as they are all sons of same father. They were not bothered for what is suitable to them”.

In biradari everybody is at same level of social power and to maintain that equivalence they found solution to rent tractor and started ploughing. In this way, they proved their modernity. In the beginning, they were not that much considerate about input and output balance. Many farmers were liberated from farm activity due to time efficiency by machine as they perform more work in less time and farmer now is with more free time saved by using machine for particular farm job. Few of them were liberated as access worker. Many of those who were displaced because of efficient power of tractor, found new jobs in non-farming sector.



In this way, they were adding money to the family income. However, all those who left farming at that time were young. There were many other farm jobs, which were still not mechanized and they need manual power. Almost all of those activities on the farm were female responsibility. As males found it easy initially to switch to tractors to save their physical labor but with time, they found it heavy on the pocket. Because, those who do not have alternative source of income to support these extra expenses, are now in nowhere, instead of going back to animal power ploughing, they decided to reduce the farm-land to be cultivated by leaving parcel of land to compensate the rent cost. Their decision made the conditions worst as now they have ample time and workers to work on less land. Males were using machines to do their work. They were also with the control on economic resources of the family, to compensate the input cost they try to sell as much grain as possible. This resulted in number of changes in economic and social role of women in the village (This has been discussed in detail in chapter 7 and chapter 8 Economic Impact of Mechanization on Women of same work as findings of the research).

After all, even though arable land may be plentiful in the village, the land that farmers value most is the land joining their own land to expand the land piece so, that the rent of tractor could be minimized, when it is moving from one piece of land to other.

Thus, depending on the proximity of adjacent field, land may seem to “run out” much sooner than it actually does.

### **6.6.3 Market Tensions**

The tensions created by market forces are also significant, particularly because agricultural mechanization can contribute positively to economic growth and development in a village like Tapiali and overall adding in the economic uplift of country. As mentioned earlier, economic growth for country requires commercial growth in the agricultural sector, as this

process will spur increased investment. The result of such type of competition is an increasing dedication to conditions of market-based competition. In this sense, efficient farmers are forcing out less efficient ones, which leads to fewer but larger farms (Solbrig and Di Castri 2001).

Tension arises here on two levels. First, the pressures of competition are in conflict with the fragmentary nature of traditional land tenure. The lineage-based model for land distribution is not economically efficient, but it remains a socially harmonious practice. Second and critical is the tension that arises for farmers who are “free” to pursue other activities, but who have no realistic alternative for making a living. Competitive market forces are arguably part of a shrewd process that ultimately results in higher per capita incomes and improved standards of living. At the same time, however, successful competition was predicated on the existence of alternative market activities (Paarlber *et al.*, 2001). If the alternatives exist, then competitive forces would be of great value to the village; if they do not, then the security of a large portion of the population is critically threatened.

#### **6.6.4 Socio-Political Tensions**

A final set of tensions worth exploring arises through the socio-political climate in the village and in larger context in the country. Country needs several years of relative calm to enjoy tacit international and national support for its policies.

This gave birth to different classes in the village like, of machine users and non-users, strong female and male job division of labor on farm, resource controller and deprived.

In the village farm machine users were all males; while females were using tools to perform their farm operations so they made the group of non-users (see Table 6-1: Farm Machines and Tools Use and Ownership). In the village, practice of ploughing using animal power had been abandon. Males sold the farm produce directly from the farm and very precise

amount of grains were brought for the family grain (wheat and maize) food for the year. Mostly family produce was just to fulfill the annual needs of the family as for rest of needs they have alternative non-farm income sources. This has deprived the females from their control or partial control on produce (this has been discussed in detail in 7 and chapter 8 of the same research as findings of the work).

This results in development of new classes or remodeling of already existing classes in the village. As aftereffect, new struggle has developed due to mechanization and shift in economic base has changed the skeleton of the village's social and economic fabric. Population growth is another phenomenon that contributes to the tension between agricultural mechanization and land tenure rights in the village. As due to Islamic law of inheritance, family land is divided among family in every generation and the parcel of land decreases due to successive division and re-division of same land. Village's population has been grown and an increasing population will naturally have greater demands for land. Therefore, the question arises who is pushed away from the traditional role in the village. This tension will not become easier to resolve, as the resultant transformation was at multiple levels, which is both voluntary and involuntary.

## **6.7 What do these tensions imply?**

Despite mechanization, cultivated land per family has reduced because of heavy inputs in the farming and alternative livelihood opportunities. There is still plentiful arable land in the village. Open conflicts resulting from the effects of mechanization on the farm and at domestic level were not easy to understand. As many have direct linkages and out of all few were travelling in form of roots from one sphere to other sphere of rural life. This work focuses to

reveal the conditions resulting in conflict with mechanization and the tensions likely to arise due mechanization in the agricultural and domestic sector in the village.

Tractors and threshers due to high rental value has reduced the cultivable land, have exploitative effects and pushed cultivation away from family food production, thus reducing the relative social and economic value of the expanded areas they require. Tractors also create tensions concerning land holding size (individual farm parcel size), since they promote leaving away the cultivable land. Tractors and threshers effected as, pushing small farmers out of subsistence farming and into a void where very few market alternatives exist. Finally, tractors and threshers might contribute negatively to class struggles at a time when the village's population found it easy to leave for non-farming activities. In most of the cases, they shifted their nature of contribution without migrating from village. They migrated from one contributing sphere to other without realizing the importance of their contribution in the economic and social fabric of rural life, and without realizing their need and competence in the new sphere. This is not to say that there is no place for tractors in the village only that a potential for future conflict exists at the crossroads of agricultural mechanization and changing roles at the village level.

On the side of agricultural mechanization, there has generally been little national or institutional guidance from the government in the village Tapiali to maximize and harmonize the efficiency of mechanization. Similarly, the government has adopted a hands-off approach to the enforcement of the policies, setting official guidelines but allowing traditional village leaders to apply the rules in ways that differ little from customary systems .They must promote the importance of individual and as unit for working of rural economic and socio-cultural system. The recommendations below, meant to ease the tension between mechanization and

transformation before conflict develops, suggest a more active role for the government either directly or by involving the community within the village and region.

1. Promote smaller, more efficient machinery in the agricultural sector. Small size tractors, as well as motorized tillers, and threshers would be affordable to small farmers and place technological limits on leaving the cultivable area. This constraint would slow the shift to massive tractor farms, ensuring a more gradual change in farming and allowing land tenure policies, as well as social perceptions of land rights, to adapt appropriately. It will also ensure the participation of all possible contributors from the family and the society.
2. Introduce harvesting equipment that could contribute to the end stages of cultivation, thus liberating exploitation of labor especially females. Machinery that facilitates harvesting would correct the labor imbalance that incomplete mechanization creates when it reduces labor requirements in the tilling stages and demands extra work from women in the later stages.

Bassett pointed that any reform of land tenure system should be built on the strengths of the indigenous system, because a blind move towards mechanization will not ensure increased production and may lead to widespread social disapproval (Bassett 1993). With this in mind, we proposed two recommendations that could establish the conditions for increasing resources in a socially acceptable manner:

1. Begin formalizing holdings, but in a manner respectful of traditional systems. The policy of combining same family land in one place in the village can facilitate mechanization. Owners themselves must make uncultivated land cultivable; they can share the produce with tenants from within, or outside the village, with the consent of community if owners are not turning up. This potentially cultivable land left without cultivation could be

offered or leased to interested newcomers, where availability permits; this must be within traditional limits. These newcomers can be females.

2. Tie the land areas to food production requirements. Rather than allowing wealthy farmers to occupy growing swaths of land solely for the production of wheat or maize, policies could require that a portion of the land be devoted to cereals like millet and sorghum, pulses and fruits as mentioned by all older (above 50 years ) people in the village in their interviews. Returns to the farmer would be lower in few of the crops like millet and sorghum, but food security problems would not be an issue any more as in past. But in terms of overall returns will be balanced by end of one cropping year (comprising of all winter/Rabi and summer/kharif crops).

The rise of agricultural mechanization in the farms and domestic mechanization in village had occurred, with or without policies to guide it. For this reason, it is obligatory to address this issue, as it's never too late to solve any conflict that already exists or likely to arise because of this. Threats to abandoned cultivable land need immediate attention. Women as imperative partner in production chain and their contribution in ensuring food security needs urgent attention now, but this might not remain the case forever. It is wise, then, to confront the mechanization tensions in their incipient stages.

We considered the rise of agricultural mechanization in the village. Till 2007, farmers were using rental farm machines and no farmer was using animal ploughing method in the fields. However, tractor use is growing quickly, and the effects that tractors have on increase in agricultural production have given rise to tensions between mechanization and input cost, economic and social transformation of roles of all those who are involved in production processes in rural life.

All the evidences showed that the rapid influx of tractors was not sustainable for the economy of rural production. As the cost of tractor and land holding size was not supporting family ownership of tractor or thresher for family farm use only. The rental machines have raised the cost of input in farming making it less attractive or reducing the incentive in form of production from the farm. In rain fed areas subsistence farming remains the predominant source of employment, and where traditional land tenure is defined by flexible, lineage-based norms, a significant influx of tractors will conflict with the land tenure system.

## **6.8 Female Economic Activity**

The process of mechanization has set limits for the economic independence of women in their traditional and conventional jobs (Tinker 1976) (Bramsen *et al.*, 1976). Mechanization and technology has offered number of challenges to their customary jobs in the rural life realm. The introduction of machines has magnified the difference in gender roles and amplified status of males simultaneously lowering that of females. The void may increase by introducing scientific and engineering machines and technology without familiarizing to the females of the village. This non-introduced segment will not be integrated into modern economy. As a result, the village's life skeleton will go into transformation as discussed in same chapter of research and in detail in chapter 7 and chapter 8 and of the same work. It is a fact that females are playing vital role in the development of agriculture, sustaining the natural environment here author means both physical and non-physical, and most important is the food security of the family at micro level and at macro level, the community, region, country and no doubt the world. Females have been excluded from the training programs on new and modern methods of crop sowing, reaping, harvesting, food production and use of machines and technologies. Memberships in cooperatives or financial support providing organizations are restricted to heads of households and in rural

society it's male in most of the cases. Another problem is the land ownership which is mainly the males asserts and females are deprived of that no matter in religion they have right in inheritance cultivation (Navachinda and Pitak 1990).

In rural areas females spend most of their time in activities like fetching water for family use, and fuel wood gathering. If time saving machines were introduced in farm and outside, the farm in the domestic sphere for women might enable them to invest less as input and produce more as output. This time can even use to improve the nutrition of family and children. All the machine and technology use trainings are meant for crops conventionally grown by men. Some cultural, ethnic and religious factors play important role in preventing females to get such training and this is very true in patriarchal societies (Swai 2009). Females have no access to agricultural machines and technology in the farm and machines which have been introduced is not serving their needs (Cain *et al.*, 1979). This is also very true for the village Tapiali. Women are still using tools to perform their farm jobs (see Table 6-1: Farm Machines and Tools Use and Ownership in the same chapter to see the difference in the use of tools and machines by males and females in the village).

Various studies on urbanization processes showed that men have moved from informal job sector to formal job sector. As far as women potential pool in the village tends to remain in unpaid sector (Tinker 1976). Lack of information about the process of development might be important obstacle, checking the limits of their potentialities. Time saving devices can improve livelihood of the family (Syed 1994).

Women participation in the production of major crops is obvious, but the intensity of their work depends on the type of crop and the specific activities related to it (Zia 1998). In the village women has specific on farm jobs (see table 6-5: Gendered allocation of farm operations and



table 6-6: Gender Wise Time Spent In Farming Activity in the same chapter of the research work).

In various studies it has been shown that the female contribution in Rain fed (rain fed areas) of Pothwar is more than males in certain farming operations in terms of number of hours spent for the specific job (see Table 6-6 : Gender Wise Time Spent In Farming Activity in the same chapter of the same study).

In the study by Freedman and Wai in the Rain fed areas of Punjab has identified women contribution in almost 62 farming operations the major contribution in seed preparation, collection and application of farmyard manure, husking maize and grain storage (Freedman *et al.*, 1988).

In the rain fed agriculture system where farm produce is not enough to fulfill the subsistence needs of the household diversification of livelihood has been recorded (Masood 1988). Males were responsible for the preparation of field for crop cultivation, they were also responsible for the threshing for both these tasks they were using machines. They monopolize the mechanical work, while women tasks were tool based and they were just performing the job of care takers not the owners of the crop and spending time on the farm throughout the cropping season (Mumtaz, *et al.*, 2003).

Shaheed and Mumtaz (Shaheed 1998; Mumtaz *et al.*, 2003) concluded that rural women are major contributors in four sub-sectors of the rural economy,

- i. Crop production,
- ii. Livestock production,
- iii. Cottage industry, and

- iv. Household and family maintenance activities such as transporting water, fuel and fodder, to and from the home, food preparation and preservation , caring for children, the elderly and the disabled persons in the family .

The difference in workloads is clearly more for rural women, who are the world's principal food producers. Fetching water and collecting fuel wood for cooking and fodder for domestic animals come in the daily routine work of rural Pakistani women (Leacock 1972).

## **6.9 Unremunerated but Unconsciously Voluntary Work**

Lack of systematic and in-depth studies on the role of women in the development process, similarly their problems and issues that affect their integration is a severe barrier to plan comprehensive development, (Zafarullah and Rahman 2002). This lack of information is due to number of factors, like the aims of surveys conducted, how they were conducted. How the surveys have been planned? Most important is, why should the respondents in any research study volunteer to disclose the facts of their lives to perfect strangers, especially when it is focusing their personal life and family matters. Secondly, no survey can enchant the role of a individual in agricultural activity unless it is a survey of her or his total life in this work, throughout the year because many of the jobs are time and season specific. In addition, various activities are going on at one and the same time. Absence of women enumerators is an additional problem (Forsythe 1998, Fischer 1991). A major farming activity that women perform is their regular routine jobs for the family and is not considered as their economic contribution. Rather, is considered as their moral obligation to support the family. Such eye washing presented situations paint a very idealistic picture and rob off the grounds for sound planning that could ensure the desired enrichment in the status of women. Thus, keeping in the view of picture it can be said that women are biological deprived rather they are sociologically expelled.

It is worth mentioning that many goods and services predominantly produced by females were undercounted in national accounts or were estimated with such rough assumptions that the resulting figures were unusable for policy makers example child and family care, selling of animal fat (ghee) and poultry products like desi ( home raised) chicken and eggs and other dairy products (Zia 1998).

Household work is primarily unremunerated work, which is a critical form of women's work, but is almost universally non-quantified (Anker and Anker 1989). Women shoulders bear burden of food security of the family in many parts of the world. They are considered responsible for planting, ploughing and harvesting the fields. The added responsibility of them is, gathering fuel wood, fetching water, cooking, breastfeeding, and family nurturing. Although women are the main actors in feeding the world and fighting against hunger and poverty, but all the mentioned work is unpaid especially if it is for their family. They have little or no access to resources in the field of agriculture.

There are number of factors considered responsible to shadow the nature and extent of women's economic contribution to household, community and country. Strong cultural norms accompanied with factors like early marriages, high fertility rate, low level of education, poor health facilities, lack of opportunities for formal training and social prejudices against women's economic contribution not only undermine but usually obstruct their economic activities (Agarwal 1994).

Women's contribution is very exhaustive from household chores to formal economic domain. They are highly participating members of the society. It is not easy to standardize their actual position, without exploring their roles and apprehension in all spheres of life. The role of women is not limited to just primary household keeping. They since their young ages were

participating in economic activities through keeping livestock, poultry and development of handicrafts besides doing a number of other jobs (Omari 1989).

## **6.10 Impact of Technology**

### **6.10.1 Technology and Gender Role in Agriculture**

One of the major observations from the study is that farmers are concentrating on subsistence grains for the part of food supply as staple food is wheat in the area and are and has diversified their income. Major shift of family income from farm to non-farm income has been recorded due to heavy inputs in farm mechanization as mentioned by farmers during the interviews. This trend has very negative effects on the rain fed agriculture systems because it has replaced the trend to produce maximum grains of all types from family farm (wheat, barley, corn, pulses, etc.). Non-farm income of the family was their saving and very little of non-farm income was spent on food items, as farmers produce vegetables from farm and suitable fruits were also obtained from the farm. Major part of the basic crops that used to come home straight from the field was used as family food. The farmer now try to sell the maximum part of the crop from the field to compensate the input to the farm and very little is brought to the house rationed to just fulfill family food needs. In many cases, farmers are now only cultivating to feed their own family grain needs. Even few prefer to buy the grains from the market or from other farmers in the village. There are even few, who prefer to buy processed grain directly from market in form of flour. This has given more income control to males in family and reducing or completely taking away the participatory control of females in decision of grains farm produce. Moreover families have become more food insecure in case of less produce from farm, or when not cultivating the farm, or when the non-farm income is not from permanent source. Women as food provider of the family are more concerned about this situation. Therefore, the women's

control over family food is decreasing on one hand, which is affecting the nutrition of the family and control over income on the other hand.

To have more and quick produce, men are using many machines, modern agricultural practices and advanced knowledge of seeds and fertilizers on the farms. These modern machines have replaced family labor, especially female labor in most of its forms. Today, women are less associated with fields and are deprived of the feeling of being a part of the agricultural system. Men consider themselves the owners of the land as well as machines. This capitalist trend is increasing in rain fed agriculture. It is creating alienation in the produce, producer and consumer. In this way, women are not getting any share/benefit, either in the form of cash or kind rather they are losing their traditional jobs and rights to land, produce and many social and economic rights to decide.

Moreover, despite women's contributions, the new technologies are projected as "masculine activity". It may be a reason why women have developed a fear and alienation from technology. In this situation, women are kept at a distance or even away from technology and machines. They use technologies and machines like hand sickle, spade etc. for farming activities, which are outmoded and inappropriate in most of the cases.

To analyze the influence of mechanization on the male and female farmers in agriculture, the Table 6-1: Farm Machines and Tools Use and Ownership shows the use of machines and tools used by male and females at their farms while performing their farm activities. They were asked about the features of the tools and machines they use at their farms and do they know the functions of the machines and tools they use. The answers are recorded in yes or no category and presented here in simple percentages. The data presents the poor conditions of rural women as they only use tools for farming activities and their knowledge about other farm machines is very

limited they have their own tools. In contrary males have more knowledge about the machines and they use rented farm machines for their farming activities.

**Table 6-1: Farm Machines and Tools Use and Ownership**

Machines and Tools	Users	Males information		Females information		Ownership
		Yes	No	Yes	No	
Tractor	Males	100	0	100	0	Rented
Thresher	Males	100	0	100	0	Rented
Cultivator	Males	78	22	5	95	Not used
Seed driller	Males	57	43	7	93	Not used
Harvester	Males	82	18	1	99	Not used
Hoe	Females	100	0	100	0	Owned
Sickle	Females	100	0	100	0	Owned
Spade	Females	100	0	100	0	Owned
Tringle	Females	100	0	100	0	Owned
Scraper	Females	100	0	100	0	Owned

Source: village survey by author 2007

It is clear from the data collected from the village survey as tabulated in the Table 6-1, all the males are using all type of machinery at their land and surprisingly all the machine used by males was rented while the females were the owners of their own tools. Males were using machines no matter they rented those, because they were having control of economic asserts, they got access to all kind of resources including the machines. They are more mobile as compared to women. They can operate all kinds of agricultural machinery due to their education, knowledge and training. This is obvious from the Table 6-1: Farm Machines and Tools Use and Ownership, as more men were using the machinery as compared to the women who are using tools. It also shows that females are having less access to knowledge of machines rather their

tools are in their ownership rather the ownership of family. This also shows that their access to knowledge about the machines is limited or they have negligible information about different machines. They have skills in using tools. There were various reasons why females were not using machines. As they did not own any assets, so they had no control over resources, so as no access to knowledge and training. Moreover, the men did not consider themselves dependent on women's farm labor. This situation has lowered the status of women. Through these ways, the women have been deprived off from their traditional roles not only in agriculture but overall in society and they felt isolated in terms of economic and household decision-making as well.

### 6.10.2 Access to the Knowledge of Agriculture

To assess the access to the knowledge of agricultural machineries women and men were asked about the sources of their knowledge. The answers recorded in Yes or no and presented in percentages but in either case, they gave the reasons as well. The responses have been compiled in the table in form of percentages.

**Table 6-2: Access to Knowledge**

Access to knowledge	Male		Female	
	Yes	No	Yes	No
General education	100	0	100	0
Technical training	3	97	0	100
Agriculture education	40	60	9	91
Agricultural machinery	100	0	11	89

Source: Village Survey By Author 2007

Only eleven women said that they have the knowledge of agricultural machinery given in the table in form of percentages.

Table 6-2: Access to Knowledge, out of these eleven percent of women, four percent women had the knowledge from their neighbor as compared to thirty-one percent males. This is less due to purdah but more for many other barriers like, lack the access to the knowledge, illiteracy, no access to the extension services and social constraints as well. They were not allowed to sit with others and especially to sit in the company of men, who actually have knowledge of these machineries. They elaborated their answer as are given in the Table 6-3 Access to Knowledge about Agricultural Mechanization in form of percentages.

**Table 6-3 Access to Knowledge about Agricultural Mechanization**

<b>If yes than the source</b>	<b>Male</b>	<b>Female</b>
By watching others	<b>30</b>	<b>3</b>
Family member	<b>13</b>	<b>3</b>
By training	<b>03</b>	<b>0</b>
From neighbor	<b>31</b>	<b>4</b>
Any other	<b>23</b>	<b>1</b>
<b>Total</b>	<b>100</b>	<b>11</b>

**Source:** village survey 2007

Women had no training of farm machinery as they are getting general education and no special programs for such training had ever conducted in area. This is also accompanied by the reason as female activities in farming are tool based, they do not have access to resources as economic matters, and farm decisions are male domain. Thirty percent of males have learned about these machineries by watching others as compared to only three percent women. This is because the male members have the opportunity to walk around and see what is happening. But women on the other cannot go around and learn freely.

The results conclude that women learn about performing a number of related operations primarily from their mother, or other women. In many instances, women claimed to learn how to perform operations by talking to older persons in the village. Here respondents do not make a



distinction between the genders. Because they think that, as the older people are mature enough, so there is no harm to sit with them. (It has been discussed in detail in chapter 7 and chapter 8 of the same study).

### 6.10.3 Reasons for Lack of Access

The respondents, who did not have access to knowledge, were further asked the reasons for their answer, shown in the Table 6-4 Reasons for lack of access They have produced these reasons as mentioned in table. This shows the waste of human power and the transfer of tradition source of human potential segment. This also shows the deprivation of women in many segments of flow of knowledge. Women were presented as "change agents." Transmitting knowledge or changing the attitudes of other members of the family and the community.

**Table 6-4: Reasons For Lack of Access to Machines and Technology**

<b>Reasons for no access( if said no access)</b>	<b>Number of females</b>
No confidence	06
Do not like	10
Not allowed	29
Difficult	22
Do not know	20
Any other	02
<b>Total</b>	<b>89</b>

Source: Village Survey By Author 2007

Out of samples of each male and female eighty-nine percent of women were not having access to knowledge of agricultural machinery as compared to males having 100 percent access to knowledge no matter of what type or of the quality The analysis of the females answers for not using this machinery give mix type of results. Like twenty-two percent women considered it as difficult task. In detail interviews, they explained the reasons of their difficulty as social barriers, economic barriers and lack of facilities in nearby.

Only six percent of the respondents said that they are shy to use machines and amazingly they were middle-aged women who said that they are well versed with their hand tools and now they do not feel to learn new techniques as for them it is too late to learn it. The male dominance and social constraints became obvious when twenty-nine percent women said that they were not allowed to take this training. The reasons explained for this were as, few are of the opinion that there are no special trainings for females so it's difficult for them, and others said that it might be expensive for the family to bear the expense of training. There were also the groups presenting the opinion for the gender biases in the family that males are preferred for such technical trainings as they support the family in winning the bread. Another group presented their ideas, as now males are no more interested in farming and its waste of energy to get such training. As their males will not support them starting farming again on such a level to bear heavy inputs as well as they are now engaged in non-farming jobs. All these reasons show that females are dependent on males of family for the decisions for carriers. It is very interesting to mention here that all the population less than 15 years and above 5 years of age were attending school no matter public or private. Females of the village are more educated than males and males when asked that whether they will allow the females for further education they always said yes.

#### **6.10.4 Allocation of Farm Operations during Cropping Season Taking Help of Tools and Machines**

Here are given some more results to show gender status in the use of machines and technology in agriculture on farm and off farm operations. Since access to the technologies both in the modern sector and the agricultural sector is unequal between men and women. Therefore, the women are usually left with no technology, low technology or out of dated technology. As already mentioned in Table 6-1: Farm Machines and Tools Use and Ownership and in the detail

in chapter 7 and chapter 8 of same research work that, the women were using manual tools to perform their farm jobs. To see in reality the use of farm machines and tools by the males and females in farm during farm operations during wheat and maize crops is organized in Table 6-5.

**Table 6-5: Gendered allocation of farm operations**

<b>Farm operations</b>	<b>Crop</b>	<b>Used tool or Machine</b>	<b>Male</b>	<b>Female</b>
Ploughing	Wheat	Tractor	Yes	No
	Maize	Tractor	Yes	No
Seeding	Wheat	Hands	No	Yes
	Maize	Hands	No	Yes
Weeding	Wheat	Sickle and Hoe	No	Yes
	Maize	Sickle and Hoe	No	Yes
Fertilization	Wheat	Hands	Yes	Yes
	Maize	Hands	No	Yes
Manuring	Wheat	Hands	No	Yes
	Maize	Hands	No	Yes
Crop cutting	Wheat	Sickle	Yes	Yes
	Maize	Sickle	No	Yes
Threshing	Wheat	Thresher	Yes	No
	Maize	Hands	No	Yes
Husking	Wheat	Tringle	No	Yes
	Maize		No	Yes
Grain storage	Wheat	Hands, baskets and containers	No	Yes
	Maize	Hands, baskets and containers	No	Yes
Chaff storage	Wheat	Hands	Yes	Yes
	Maize	Hands	No	Yes
Daily care of crop	Wheat	Spade ,sickle and hoe	No	Yes
	Maize	Spade ,sickle and hoe	No	Yes
Grains selling	Wheat		Yes	No
	Maize		Yes	No

Source: village survey by Author 2007

It is very clear from the fact sheet that women are not using machines. The reasons they produce for not using machines are, they have not seen machines for the activities they perform in the farm, heavy inputs for the machines is unaffordable , their males cannot stay at home all the day to look after the machine operator as they suppose that they (machines) are operated by males only. For the last reason few were willing to get training for machine handling.

### 6.10.5 Gender Wise Distribution of Working Hours on the Farm

In the cropping season numbers of hours spent in farming operations are also shown in Table 6-6 for the activity both male and female perform in terms of time spent in farming operations during cropping season.

**Table 6-6 : Gender Wise Time Spent In Farming Activity**

Activity on farm	Hours wise participation in farming activities													
	<50		51-100		101-150		151-200		201-250		251-300		>301	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
<b>Ploughing*</b>	Yes	No												
<b>Seeding*</b>	Yes	Yes												
<b>Weeding</b>	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
<b>Fertilization</b>	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	-
<b>Manuring</b>	No	Yes	No	Yes	No	Yes	-	-	-	-	-	-	-	-
<b>Harvesting</b>	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	No	yes	No	Yes
<b>Husking</b>	Yes	Yes	yes	-	-	-	-	-	-	-	-	-	-	-
<b>Grain storage*</b>	Yes	Yes	-	-	-	-	-	-	-	-	-	-	-	-
<b>Chaff storage*</b>	No	Yes	No	yes	-	-	-	-	-	-	-	-	-	-
<b>Daily care</b>	Yes		No		No		No	Yes	No		No		No	Yes

Source: village survey by the Author 2007

\*Shows activities which are time limited in specific time of cropping operation

It is clear from the table that female activities are spread throughout the cropping operation, which is roughly of six months duration, and male activities are more limited to specific time of cropping operation. In the study, the question was raised with respondents about the farming activities in the same family for three generations to evaluate the time spend in farming activities in past and present. It has been summarized in Table 6-7.

**Table 6-7: Women participation in farming activities since three generations in same household**

<b>Generations (G)</b>	<b>Number of hours per day</b>
Grandmothers(G 1)	7 hours
Mothers(G 2)	4 hours
Daughters(G 3)	2 hours

Source: village survey by Author 2007

The reduction in time spent on the farm in subsequent generations of females of same household has decreased not due to mechanization alone but due to abandoning of farming due to heavy inputs by males. In the village, patriarchal system females do not decide for farming (see details of farming decisions in Table 5-14: Reasons for not Cultivating Land). We can even say that diversification of livelihoods due to heavy inputs in farming also added in the situation.

### **6.10.6 Methods of Reaping**

In the village due to many reasons, reaping is still done by using human manual power with sickle. Reasons for this are the location of farms in different areas of the village, small size of farm due to system of inheritance. Last but not the least is the heavy cost of cultivators, as it will also add in input cost. The difference is that the most of farmers now hire the labor if he is short of manual power. This has multiple effects and affects in the community. This also creates alienation for produce by the farmer, and those who are reaping that crop has no affection for the

produce as they were only concerned with the task of reaping, Further these hired were may be daily wagers, or may be given contractor for the whole farm to reap. In both cases, their intention will be different. In first case, they will slightly delay reaping as to increase their working days. Therefore, they can charge more for working more days. In the second case, they will try to finish the work as soon as possible to start another contract with new farmer. In this case, they may not cut the stalk in maximum approximation to roots. This will decrease the chaff, as it is also worthy for the farmer. The farmers use this chaff as animal's food, or may be used in the mud for the pavements of walls or the floors or roofs, which are still not cemented. Another profit that it brings to farmer is it, might be sold to add up output to compensate the input cost and raise the family Income. (As in Table 6-5 of same study).

It has been shown that reaping is the female job and very few males participate in reaping or for reaping, they may hire the labor. Similarly, the females spend more hours in reaping and post reaping activities as shown in the Table 6-5 of same study.

We ignore this historical fact with open eyes that women invented a range of plants domestication tools, innovated and reshaped many ideas in present day agriculture.

The technique and systematic strategy of food gathering and preservation, cloth weaving, no doubt are among their many innovative contributions. However, with mechanization of agriculture, they were pushed out of their capacity sphere; they are still using their tools instead of machines and spending more hours in farm activities. They were also losing their control on produce, as their work is not considered as input contribution. The males decide for the fate of crop without their consent to larger extent. Even it has been noted in many cases that women wants to go for farming but the males have no willingness for number of reasons, as heavy inputs, non-farm engagements and alternative sources of income.

### **6.10.7 Methods of Cleaning the Produce**

The cleaning of all crops was a women activity. No technology has been invented for this purpose so far. Therefore, the women were using basket or wooden fork for this task. These are locally made tools. Women buy and use other locally made tools and implements like sickle, spade, pick, axe, winnower and basket. In spite of all these hardships the poor women in the village prefer working in the field instead of working as wage laborer for some off farm work. This is because they own their work on land and have very strong association with it.

### **6.10.8 Thrust Areas in Agriculture**

Since women were never involved in scientific and technological processes. Moreover, the modern science and technology do not aid their work domain. Those who decide to produce these machines do not involve women or consult them on the assumption that women's lives are divorced from scientific and technical innovations. This means to keep women out of the mainstream of new machines and technologies in the new deals of this century. This exclusion would mean that they could never participate in scientific and technical machineries at the government, private and grass-root levels and they will be deprived forever from scientific and technical knowledge in the economy of the country.

## **6.11 Women Perceptions about Technology**

The core of village agricultural technology still consists of the Khurpa, Kai, sickle, and spade (a local tool). These are the traditional simple tools that have been used since times. Yet many women cannot afford to have them. It may be mentioned here that most of the tools (plough, ladder and sickle) are gender specific; only men use them to work in the field. Women commonly use a spade to work in the crop fields and in vegetable gardens. The lighter the spade

the better it is. They use hand tools for weeding. These tools are age old and take more time. A little improvement can make the job easy and efficient.

Very few respondents said that we do not know about the resources required for technology adoption. While rest of them showed their interest to have education. Training, capital, knowledge and modern equipment's to improve the farming systems. Especially, the women commented that farms have become more mechanized, labor requirements have decreased, and that has resulted in the decrease of women's role as well. They said that they work and produce on land but do not own the land and the produce. Therefore, they had a very vague idea about what kind of resource they needed for adoption of technology. With the introduction of market economics, the situation has further deteriorated. The harvest is sold by and through men, who control income. Land is owned by men and they enjoy the fruits of the land. Thus, men automatically become visible and women become invisible. They further said that we work in whatever way to produce the crops but it is not taken into account. Therefore, we want to have all the above-mentioned facilities, so that the women's status can be improved in the social set up. They further added that it is very important, to motivate and convince our male members for having all these trainings and facilities. Because it is a male dominated society and we, the females cannot do anything without the permission of our male members. So consultation of male and female farmers in the process of technology development is very important.

## **6.12 Rethinking Agricultural Mechanization**

1960's has been a period of rapid change in the country: globalization and market liberalization have occurred side by side with economic structural adjustment and government decentralization. But after 1971 government has adopted the policy of nationalization. In 1980's



again the policy of partial decentralization and privatization has adopted. These have interfaced with urbanization trends and a growing number of middle-income consumers with increasing demands for better quality and value-added products. Agriculture is therefore required to be more commercial and more market-oriented. Globalization has resulted in opportunities and challenges for farmers but within the context of structural readjustment. With structural adjustment, government role has shifted to private sector and the public sector has been compelled to increasingly, withdraw responsibility for providing agricultural support services, and in some cases, even rural infrastructure. It has been expected by the private sector to perform the new role assumed from government, which facilitates this process by creating an enabling economic environment for businesses to thrive. All this favors mechanization rather forces to be mechanized.

When talking about the mechanization in Rain fed areas of Punjab (particularly in Potahwar region), do not ignore the key problem. The success of past mechanization initiatives extended when introducing animal traction from hand hoeing. New wisely developed incentives for mechanization will bring desired results of more yields per hectare and food sufficiency as Pakistan is considered as agriculture based country. In the area it has been the strong observation rather the issues markedly highlighted by the individuals were the cost of input , either in form of rents of machines or the cost of fertilizers or certified seeds. The village was famous for its lush green ever cropping fields with multiple crops per year and also for its food sufficiency. But due to these factors and as result of these factors they are buying food from the market and many fields are waiting to be cultivated.

The reality, however, is that mechanization is not only an issue of substituting labor with animate or motorized power in land preparation – although very visible, this is only one of its

dimensions. Even in the specific context of mechanization and technological change, there are many mechanization options and opportunities in addition and complementary to mechanization of land preparation. This often was overlooked in Rain fed areas, when government imported tractors and set up government tractor loan schemes. Because, size of land is really important issue and accordingly the size of farm machine. This will reduce the cost of input and efficiency expected can be meeting.

In addition, mechanization is not an “all or nothing” process. Levels and types of improved mechanical technologies need to be compatible with local economic, social and agronomic conditions. For example, tractor power is likely to be best suited to the moist and flood valleys (Pingali *et al.*, 1987), while mechanization of agro-processing may be more important in the more humid areas where perennial crops dominate farming systems.

Moreover, we must not replace animal with tractor cultivation in the village, as few fields in the past were cultivated deep in jungle where there is no track for the tractor to reach. Now when tractors have replaced animal cultivation all those cultivable fields were left without cultivation due to non-availability of ploughing power.

Animal cultivation will continue to be necessary where:

1. Topography makes tractor ploughing difficult, e.g. highland slopes;
2. Tree crops can be grown, which make it possible in other ways to obtain a satisfactory output;

In brief, it is desirable to think of agricultural mechanization not as a short-term commitment to replace human labor with machinery and equipment, but rather, as a longer term developmental process that involves various mixes of farm power sources over time. No single source of farm power (human, animal, mechanical) is mutually exclusive, and the most effective

results ensue from a combination of these, synchronized and targeted to address specific local problems. The key challenge, however, is to create incentives and enabling conditions so that farmers and managers of non-farm enterprises can mechanize those difficult, arduous and power-intensive operations that constrain productivity growth and are difficult to perform, when relying entirely on human muscle power. They should be provided with innovative sized machines so that the cost/rent must not raise the input more than output.

We now turn to reasons why mechanization, understood as a multifaceted longer-term developmental process, should have an important place in the future vision for agricultural development and economic growth in Pakistan. As far as Rain fed areas of Pakistan (Potahwar region) or the total cultivated land is concerned, we must realize key issue, which is not mechanization. Our key focus should be improving productivity. However, this improvement in productivity must not be at cost of deprivation of the participant, by making segregation of have and have-nots.

### **6.13 Improving Productivity and Growth**

The task facing the agricultural sector in is huge. The agricultural sector in Pakistan requires not only to produce enough food to feed its increasing population (a large percentage of which will be living in urban areas), but also to provide the main source of foreign exchange earnings for the country. As is too well known, the agricultural sector has not been performing well enough to make the required contributions to the economic development of country; we are still buying wheat and sugar to feed our population. Agricultural imports remained as high share of total imports; after oil and machinery, and showed no downward trend rather is increasing.

The point of view, that mechanization is essential to the development of agriculture and adding in overall economic growth of country cannot be totally accepted or rejected. However

worldwide trends in mechanization showed that there exists a strong correlation between mechanization and economic stability and development of country (Shetto 2007). The countries those have achieved unparalleled economic growth over the past few decades and have succeeded in solving their food problems have also moved to higher levels of mechanization of their agriculture. Countries that have stagnated economically, with significant numbers of their citizens steeped deeper in poverty, have also lagged behind in agricultural mechanization (Kahan *et al.*, 2008).

Apparently there are three reasons for connecting mechanization with transformation in agriculture:

1. The experience from the areas/ regions where mechanization has raised production and profitability of farmers, there advantages of mechanization must be seen in connectivity of other inputs like new improve biological varieties and pest control and above all the ecological balance of the village. To run machines power is needed so arrangements of power supply should be sufficient enough to reap maximum benefits of machines. Even more important is how all these are used in connection together integrated and organized to make them a profitable choice.
2. In the dialogue in decade between 1970 and 1980s, the choice of transformation versus incremental change was the focus. Now with experiences it showed that there must be hybrid of these. This will help to include rather than to exclude. As in the village, it is inclined towards exclusion.
3. Keeping in mind above two points, there is need of realistic approach as mentioned of hybrid model. Boost should be focused to other pre and post-harvest sectors to make the balance between input and output.

In short, the process of agricultural mechanization can be seen as a catalyst for enabling agricultural development and structural change that is necessary, but not at expense of reduction in agricultural productivity. In addition, net shift to dependence on market based food for fulfilling family basic food requirements.

#### **6.14 Gendering Agriculture**

Although the changes in agriculture, seems to create new sources of opportunities for livelihoods and food security, they also pose significant uncertainties. Equity concerns are being, raised. Poor and small producers, or co-producers as in the case of village who were women, may be excluded from the lucrative high-value markets because they may not be able to compete in terms of costs and prices with larger producers. In case, of women in the village, as they do not have direct control on monetary resources as well as immobile asserts like land. They were expelled out from their indirect control on produce (this has been discussed in detail in chapter 7 and chapter 8 of the same research work), as to balance the input males sale maximum of the produce directly from the farm.

However, at the same time, process of globalization has led to transition of economies. These have favored the producers who have more resources and the information, education, and capacity to cope with increasingly stringent market demands. Thus, these changes may increase the vulnerability of individuals with few resources, especially poor and especially women, who in patriarchal rural society traditionally had limited access to crucial services and opportunities because of persistent cultural, social, and political biases. This is most appropriate time to fill the existing voids in society and economy. Focused efforts are required to use fully the strengths and diversity among the rural people and their institutions, to manage innovatively the risks and challenges associated with rapid changes in the sector, and to ensure that growth reaches poor

women and men. For example, women play a major role in agriculture, food security, flow of nutrients and sustainability of food supply, but these roles are often unrecognized. The design of many development policies and projects continues to assume wrongly that farmers and rural workers are mainly men. Lack or recognition of the roles, differences, and inequalities set a serious threat to the effectiveness of the agricultural development agenda.

### **6.15 Why Gender Equality is Important in Agriculture**

Gender equality is critical for agricultural development and betterment of country's economy. It latter ensures the improvement in living standards and human values in society. Gender issues when considering development are: First, from perspective of economy and efficiency gender dimensions provide an important and central viewpoint. This is particularly true in the agriculture sector, where gender inequalities in control and access over resources are already present, weakening a sustainable and inclusive development of the sector. Second, integrity or distributional problems are related to gender differences in outcomes. Gender differences, rested on the socially constructed relationship between male and female, influence the distribution of resources between them and author many disparities in development outcomes. Third, gender roles and relations influence and transform food security and household welfare, important indicators of human development. Last, but not least, gender equality is a basic human right, one that has value in and of itself. Just like the duality concept of Gidden as explained in the theoretical framework of the same research.

### **6.16 Stereotyping in Agriculture by Gendering Agricultural Artifacts**

The ruling profile of females being docile, fragile and weak and males being presented as rough, strong, powerful and tough. This image of both also exists or has been created in the tools

used while performing agricultural activity. It has been pointed out that even in language and literature, weak things and expressions are feminine. In an article, Anti-Feminism in Urdu by Jafferi published in *Alam-e Niswan (Women's world)*. Jafferi notes that the article already mentioned “attempts to discover the subconscious sexism of the speakers through their use of different parts of speech like noun, proper names and the taboo words,”. The book, *Feminism Confronts Technology*, by Judy Wajcman's in 1991 is the first major study in which she challenged that machines, tools and technology are gender biased. She notes, “The masculine culture of technology is fundamental to the way in which the gender division of labor is being reproduced today”. In village, Tapiali an analysis of names of tools used in farming operations were in support with the gendering of artifacts. Most of the traditional tools of farming like *hal* (plough) has mannish attribute while the tool in daily used by females in the daily farm work is *draati* (sickle) has womanish attribute. The machine now used to drag plough is *tractor*. It also has mannish character and performs muscular tasks. Similarly, the word *thresher* is also showing mannish attribute, on the other hand another modern implement is the *trolley* used to carry burden, they are used after tractor to carry load. They always need power from outside to move ahead, they are just dampers and hooked behind the tractor, which already mentioned is showing male character, so trolley is performing a womanish job. Another tool is *rake* (tringali), it's a fork like instrument to separate or mix the stalks, chaff, grains, etc, and this also shows masculine nature. Next in the line are tray boards (*chajj*) and molded board plough (*karrah*), both show muscular character shaped. Another tool used mainly by females is spade ,when it is of small size it's called *khurpi* (showing womanish nature) and it is big in size, its *khurpa* (showing mannish character). The issue here is if it is the size of specific artifact or machine to make its character mannish or womanish, or the genderization of implements is due to the biological roles

males or females perform in actual life. It is quite understandable that culture and the biology plays role in characterization of agricultural machines in the taxonomy of their work performance.

The more solid or voluminous looking an object is, the chances of its categorization as male increases. Its grandness is symbol of its masculinity. The image of women is as weak, lacking in competence, low skilled in handling of technology and machines. Primary reason behind this is the grouping of implements by the gender of their user.

Wajcman in her work on feminism and technology notes:

“The very definition of technology has a male bias. This emphasis on technologies dominated by men conspires in turn to diminish the significance of women’s technologies, such as horticulture, cooking, and childcare, and so reproduces the stereotype of women as technologically ignorant and incapable” (Wajcman 1991).

It looks that the naming of agricultural tools/ machines and their uses also follow the same sequence and relation that exists between strength and fragility, competence and incompetence connected to customary gender themes. When naming agricultural artifacts and machines in the village, the ones that are more huge and powerful are gendered as masculine and also correspond to male roles in actual life, for example, ploughing and planting done by tractor. Once males do the sowing, and when crop starts sprouting after germination period, women were considered responsible for the care and nurturance of the crop. Similarly, at time of harvesting, also at post-harvest period, she takes care until the crop is ready to market, just as they do in bringing up a human crop their children.



### **6.17 Gendered implements in Agriculture: Mechanized (mannish/gallant/high status) vs. Manual (womanish/timid/low status)**

The present farm technology scenario in Tapiali represents two lines of agricultural technologies, mechanized (Type a): mainly for traction, planting and threshing like tractor, and thresher. Other is the manual (Type b): primarily for harvesting and post-harvest processing and storage. Looking at their main users, these two lines of machines and technologies can also easily be classified as men's technologies and women's technologies, as outlined in Table 6-8: Gendered Taxonomy and Faculty of Implements in The Village Tapiali and Table 6-5: Gendered allocation of farm operations. The farm implements are so gendered, in a way that they can easily be grouped as implements for males and for females. Mechanized technologies and those gallant, powerful, in general, placed in muscular or mannish domain whereas manual, less technical could be tagged to womanish domain in a wider sense, although, males can also use them. In this connection Cockburn and Ormrod's case (1993) of 'brown goods' and 'white goods' in the study of *Gender and Technology In The Making* is worth mentioning. The term 'brown goods' in general refers to relaxing and entertainment or the high-tech goods, stores having all such goods were more male stores. Whereas 'white goods' are for domestic work or as the authors put it "where you buy what is deemed to be necessary," were available on family markets (Cockburn and Ormrod 1993). In discussing the curious relationship of technology and gender, they note, "There is a prevalence of bald prejudice: women are expected and believed to understand and control engineered technologies less competently than men" (Cockburn, 1983).

No Female was ever seen using mechanized technology under any circumstances, whereas instances were referred where in adverse circumstances women did crossover into conventional male domain activities, like for example manual plowing with a pair of bullocks.

Four women out of the all households had driven bull-drawn plow (*haal*) at some point in their lives (this was reported in G1 only), not a single case was found of any woman using a tractor under any circumstances (In all G1, G2, G3.). This presents a hard margin of breach in the area of modern mechanized agricultural technologies as compared to conventional technologies, which might be characterized to women's low skill level and technical talent to handle the high skilled mechanized farm technology.

In Table 6-8: Gendered Taxonomy and Faculty of Implements in The Village Tapiali manual technologies have been termed as female's technologies, because they were seen to be in areas of women's work in farming and possess qualities that convey low social and economic value.

**Table 6-8: Gendered Taxonomy and Faculty of Implements in The Village Tapiali**

Name of the Tool/Machine	Masculine/Feminine	Faculty Of Tool/Machine
Haal (plough)	Masculine	Ploughing
Tractor	Masculine	Ploughing/traction/power operations
Trolley	Feminine	Carrying load
Draatri (sickle)	Feminine	Cutting/hoeing
Thresher	Masculine	Processing of wheat kernels
Tringali ( fork/rake)	Masculine	Mixing/processing
Karrah ( board plough)	Masculine	Leveling of furrows
Khurpi (small spade)	Feminine	Weeding
Khurpa ( large spade)	Masculine	Small scale digging
Chajj ( tray)	Masculine	Cleaning/gathering
Panjali/junjth( yok)	Feminine	Keep the animals together during ploughing/crushing

Source: village survey by Author 2007

Men as a rule use prestigious modern capital-intensive technologies that are high skilled, high-powered and related to men's high socio-economic status and keeping their upper hand on women as sole guardians of superior technical knowledge. The discourse developed here shows

that farming tools and machines are gendered may be because of collective consciousness on basis of the faculty and activity they produce. This is not only true for the traditional artifacts helping in farming operations modern machines are also stereotyped.

### **6.18 The Social and Symbolic Functions of Farm Technology**

Apart from its usual physical functions, farm mechanization in a usual village set-up, where the economy is based on agricultural, performs a variety of other important social and symbolic functions. Under various circumstances, mechanization plays multi-faceted socio-cultural, creative and innovative functions for which it was not designed for. Here comes what the SCOT approach<sup>34</sup> (social construction of technology) calls the ‘interpretative flexibility’ aspect of a particular technology (Pinch and Bijker 1987). Kline and Pinch in their discussion presented that “different social groups associate different meaning to artifacts, as agents of change, leading to interpretative flexibility appearing over the artifact” (Kline and Pinch 1996). The tractor, for example, as the most expensive machine used at present in Rainfed areas (ranging from about 300,000 for used to 925,000 Pakistani rupees for a brand new tractor), has variable functions. These are ecological, infra structural and cultural in nature, innovated by different social groups like farmers, lohars (ironsmiths) and mechanics who directly or indirectly use or benefit from tractor.

In villages, normally the carpeted road reaches to a specific point and after that, people have to walk. In such cases, villagers frequently use tractor for both travelling and haulage. On occasions where people have to travel in form of group like visiting the death ceremony, marriage, or any festival outside the village they use trolley attached to tractor for such

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<sup>34</sup> The reason behind using a SCOT approach is that it provides a model to examine the roles of social groups in determining the choice and forms of technology. SCOT was helpful to show how radically different features and machines and technology are explained by radically different interpretations of social groups.

transportation. Similarly, goods are also transported in same manner. On social gatherings like weddings, marriage processions (*Junjh*, in local language and *baraat* in national language) are also transported within small distances on tractor trolleys.

In Rainfed areas, Potahwar the prevailing socio-cultural system rates machines and technology as symbol of status. It also symbolizes the masculinity of user.

### Case study 6

Muhammad Abid was 67 years of age and was full time farmer when was young. He was working on family farm, which was almost more than fifteen acres. His grandfather owned this all land. There were three sons and four daughters of his grandfather; his land was divided among three sons as the four daughters surrendered their right in property in favor of their brothers as the tradition of village. His father got five acres of land in inheritance, which was again divided among three sons (Muhammad Abid and his two brothers). He while talking about his childhood told that they were very rich in village, as their family land was cultivated to produce maximum and they were cultivating wheat, maize, pulses, fruits and vegetables ( Last two to fulfill the family needs only). Their family also owned herd of fifty animals including, goats, buffaloes, cows and bullocks. In the house, there were tens of poultry. They never bought milk, butter, eggs, poultry, vegetables, fruits and grains except rice and non-refined sugar “gur”. He said that was all because of their interest and hard work. When remembering and orally narrating the history of village, how someone using farm machine was appreciated and others were motivated to leave traditional farm machines especially for performing operations like ploughing and separating grains from stalk in case of wheat (threshing). As maize is still manually separated from stalk and further grains from the maize comb (in local language they call it tukka). He presented his view as, there was no consideration for the need and economy to

leave traditional farming, as someone using mechanical technologies, driving tractor or hiring tractor for different farm operations, it was said “**bara narr na bacha aa**”(it means he is a real son of a brave man). It is actually this statement,(if one goes in the actual meaning of this statement it gives pride in manner of physical strength, psychological superiority and better economic status not only to the person for whom, this statement was produced but also to the father and forefathers.) which made them escape goat to the modern farm machines<sup>35</sup>. He further told, now my sons are earning their bread from non-farm activity and we buy food for our daily needs. He added that he asked his sons to rent tractor and he would look after the farming operations and contribute his skill. He said, “After one crop experience I concluded that it is no more a source to bring in prosperity to family rather it drains family resources<sup>36</sup>. So, I insist my sons not to waste money in farming, rather save them for the future of their kids”.

It shows that machines and technology was there internalized as symbol of masculinity in the people. In the old traditional set-up, a pair of bullocks (dandaan ni jori) had the same masculine power value as tractor for today. Keeping quality bulls in rural areas was traditionally and is still to some extent, a symbol of wealth and masculinity, equivalent of keeping expensive high-end automobiles (like BMW or Porche) by men in the Western countries (Malik). Now the mechanization in farm primarily and at domestic level in rural areas is taking place as the symbols of masculinity and pride replacing traditional symbols of wealth and prestige, the animals “maal” and pair of bullock “dandaan ni jori”. This transformation and replacement of symbols of prestige and wealth, has offered new threats and challenges to its traditional owners-- the men, who have to compete to acquire these new status symbols by exploiting unconventional

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<sup>35</sup> It is not the only factor, if revisiting the Case study 5 one of another reason was produced, as sons of same father “sharikka”. So to be at same level of pride they have to follow the trend.

<sup>36</sup> Latter chapter 6 (page number 231) and 7(page number253) on result discussion, how rented farm machine and small farm machines along with other factors contributing in changing the economics of village economic base.

avenues of income, outside the village confines. This also forced for diversification of livelihoods.

No one out of two hundred and one households in village Tapiali own tractor and other modern farm implements. This is shows lower prosperity levels of farming interests in the Tapiali village. The families with rented machinery were farming below their full potential because of high cost of rent or to balance input, output.

The transition of traditional and modern technology use has further marginalized the status of females. They are negotiating their status with both at the same time. It is tough for them to join without having information of how to achieve it. Where men have gone much ahead of women in terms of skill level and interaction with machines, women have left further behind. This gap has to be filled by introducing skills and technologies in all major areas of women's work and using their knowledge of farming jobs as well as post-harvest managerial know how at the best creating new farming scenario in Rain fed areas.

## **Chapter 7**

### **Social Impact of Mechanization on Women**

#### **7.1 Introduction**

Before the social impact of mechanization on women in village Tapiali is presented here, it will be appropriate to dilate upon the representative image of woman as depicted in today's world. It is normally suggested that historically, the relative position of women has improved with mechanization (used synonymously with modernization), and prospectively, that it will improve with modernization in areas still underdeveloped. This chapter attempts to analyze changes that have happened to a woman's role in the new culture; and how women have been able to change from a traditional to modern woman.

#### **7.2 Change from a Traditional to a Modern Woman**

The image of woman is in most of the cases derived from western (Euro-American) traditional images. The western image has imparted a rigid and biased picture of traditional society, where a woman is at the mercy of man and has no role whatsoever in a patriarchal society. The western image of woman is presented in such an ideal way that the best thing to happen to a woman is to depart from her traditional role and adopt the one bestowed upon her in the modern mechanized culture. For this, they have neglected high-toned social and economic role of women in non-mechanized cultures. This was observed in the field that the women were made to depart from their traditional role of food producer or co-producer. In the fallacy of freedom from work, they were made to depend on their males for the fulfillment of all of their needs.

A typical comparison of a traditional and modern woman is the one stated by Raphael Patai, editor of *Women in the Modern World* and quoted by Bossen in the work. Everywhere in the world females have attained more freedom and have received more or less equality in comparison with males in and outside the family. This enrichment of equality is not only in the family, but it can be seen in legal, sexual, political, occupational, economic and cultural profiles. (Bossen 1975). The old rules and structures, which set their limits in the house as helpers, as servants, care takers and child bearer to their men-folk, has been, or was in the process of being replaced by a new one. In the new structures, women are burdened to increasingly perform as many roles as possible within the home, as wives, mothers, and homemakers, and outside it as partners and coworkers of men in all types of enterprises. This is the demand of new and reformed social economic structures.

This sweeping pronouncement defines two polar alternatives: traditional bondage and modern emancipation. Rae in 1971 noted the transformation of women's role as "home servant" to that of "homemaker." Two premises were involved i.e. micro and macro-level and this transformation was in both the worlds and levels here Patai talked of inside the house as, micro-world and outside as macro-world. This view is part of a more general identification of progress within our own cultural norms. The ethnocentrism becomes explicit when Patai asserts that "all women who fight for emancipation fight for modernism and Westernism".

Diffusion from developed nations or acceptance of any trait from these nations ensures change in attitude in accepting culture. Their borrowed values and machines enhance the benefits accruing to these developed nations. The developed nations have grown at the expense of these regions now considered under-developed. According to Escobar (1995), mechanization is a set of reasons or rules through which developed nations impose their views to the beneficiaries of their



mechanization program forcing, to some extent, a change of identity. Such type of development was a medium of transferring Western values to non-western cultures. The problem with this adoption and transition is that while women have been unable to adopt the new culture, they have lost their traditional role in the family.

### **Case study 7**

Mehboob Ahmad was sixty-three years old. He served as high ranked officer and is living outside the village but has spent his childhood in the village. His parents lived in the village until their death. He joined every family occasion throughout his life. He has experienced the transformation from permanent member of village life, to visitor of the same sphere. His childhood memories revealed that his mother used to help his father in farm activities.

She was real life partner of his father. He said that the coordinated effort of farming improved their relations. They developed rapport not only in the farm but also in life. My mother enjoyed partial control on resources in form of produce. My father respected her not only as his wife but also as partner in the produce. He said, I remember that my mother got her own money saving and this was not secrete to my father, (may be the amount was). Her resources gave her courage and confidence. She contributed for different heavy purchases for the family throughout her life in form of money also.

She was not employed formally ever in her life, but was resourceful woman because of her contribution and management in the family. She also gave him extra money when he was living in hostel in the nearby city. She was very skillful woman, doing crochet, knitting and preserving food and preparing butterfat. He said my mother use to prepare excellent “panjeeri” (type of sweet prepared by nuts and semolina). He said, “I have observed even in immediate

family of mine that now women were not aware of their identity and unamored by new machines as status symbol had lost their identity as the pivot/anchor of the family”.

According to him when machines were introduced in village, his elder brother bought tractor. His purpose was to cultivate our own land and earn money for his family to run that on rental bases. It was a good business at that time. But with time people started reducing the land under cultivation for different reasons.

He said, “Mechanization was supposed to bring about a change in a static (traditional) world but the problem with this world in transition was that it is without any foundation. The imported notions of emancipation have opened a brave new world before us and nobody know as to who will set standards for norms and behavior”.

It is also wrong to look at a woman in a traditional society as ignorant. She may not be educated but was well versed about the art of leading a good life. The researcher found through personal experience that women in Tapiali, even when not aware of the word science, were scientists. They were taking care of mild illnesses with food e.g. giving soft food in up-set stomach, hot foods in cold and fever, gur drink (jiggery drink), sattoo (barley) in hot days, lemonade during rainy reasons, pickles and chattnies (sauces) with food to make them digestible. They used fresh vegetables during rainy season and avoided meat without knowing that the existence of eggs in the flesh of animals caused many diseases in humans like tape worm, hook worm, ascaris etc.

Many of these machines and techniques were developed rather than explored e.g. food technology, food treatment. There was a skewed notion in the village about the gender stratification of science into the male and female branches of science. One was appropriate for one, not for the other sex, and vice versa. Medicine, biochemistry, microbiology, software,

electrical was considered as female sciences, while the rest as male science. Females were always positioned distinctly as bringing social values based experience, caring and reciprocity approach and behavior in science.

### **7.3 Domestication of Women**

The introduction of machines excluded women from the outside environment, and this limited her to micro level or to her household (Keating and Munro 1988) (Rozen 2007). It was found that new machines displaced women labor (paid or unpaid) and reclassified their jobs as low skilled workers, a work for which they were rarely paid.

Many of the farm operations like grass cutting, grains storage (at home for family use) weeding etc. were entirely still female done operations. But heavy economic inputs in mechanized agriculture had reduced the magnitude of cultivation as only sixty three percent of total households were found engaged in farming and these one hundred and twenty seven households were not cultivating their all land. Only ten percent of the households had agriculture as their primary occupation. Male members of these families were still engaged in non-farm economic activities. Thirty-seven percent of the households in Tapiali village totally left farm operations but still reared hens and livestock. They used to sell these animals at the time of financial need.

**Table 7-1: Tapiali Land Cultivation Pattern**

<b>Pattern</b>	<b>No. of household</b>	<b>%</b>
Self- cultivated	106	53
Not cultivated	74	37
Tenants cultivated	21	10
<b>Total household</b>	<b>201</b>	<b>100</b>

Source: Village Survey for Research 2007

### Case study 8

Sakeena Bibi was eighty years when was interviewed. She was active farm worker, she used to help her husband in all farm operations traditionally considered as female tasks. She told that she got buffaloes, cow, and goats. She made it clearer that few of them were her own property. They sell animals at different festivals and Eid-ul-Azha, this was added source of income for the family as well as for her. With the introduction of machines primarily tractor, males were liberated from many-a-days labor of ploughing and taking care of bullocks. This made them feel that their sons must not permanently be engaged in farming, they were free to find job in non-farming sector. They thought that their sons could come and help them whenever needed. It was so easy for them to handle all jobs related to farm operations with the machines. But with time they realized that heavy input in form of rent of machines made them resize the cultivation experience. Meanwhile they have sold their bullock and their sons were settled in their jobs. It was difficult for them to go back to old practices. But the problem was the high rents of machines so the solution left for them was to leave part of their farm land uncultivated. They chose for that much piece, which could only provide grain supply for the family. For other needs they have nonfarm income to support.

She said, “I still remember those days, we have everything available on our farms, grains, pulses, fruits and vegetables. The family animals was producing milk not only for the family, rather access was converted in butter and fat. Our land was supporting our family in all respects. I was free to go out for the work on family farm. Whenever we find time, while working on the farm all the ladies, use to gather and socially communicate. We were well informed of each other and free to develop our relations (in the social and religious limits). With time due to limited farm operation, she has to reduce the number of animals. She cannot feed them, as chaff, grass and other byproducts from the farm was the free source of food for the animals. As the farming, operation reduces so do the availability of such free animal food opportunities. She has no choice, except to minimize her herd strength. This has affected her, in a manner that now assets collected in form of sale from the domesticated animals has reduced with time. This also reduced the milk and butter fat for the family and as she use to sale the extra quantities. She said it is due machines she has lost her economic power and status. She said that her sons give her reasonable amount of money to her husband and off and on to her for the pocket money but she said, **“Apnay Paisayan niyaan apniyaan hi bahaaran siyaan. Kisay ni mathaaji na see. Hun bachay paisa daanay taa dadhi sharmindgi honi. Allah wee taa akhna ka deenay aala haath kinnaay aala hathay kolun changeha aa”**. “Your money makes you confident and independent. One is very independent. Now my sons give us money but I feel ashamed to take them. It is saying of God that hand which is giving is better than the hand which is taking.”

### **Case study 9**

Sixty-one years old Raja Masood was active farmer throughout his life, except for the period in which he served in Pakistan army. He was part time farmer as he was also engaged in nonfarm sector, and lived outside the village for most of the year. After his retirement from the

Army, he came back and joined education department but lived in the village. During this, he was primarily a farmer and as part time, he serves in the education department. He told that for me machines were sort of blessing as I use to come to village in ploughing season and my wife was responsible to take care of the crop. I come back again for threshing the grains. He said but with time, I encountered different problems. Which he explained, my wife has to wait for me to come back and look after farm jobs related to me like renting the tractor for ploughing and in last thresher for threshing the grains. She was actually depending on me to start the cultivation and end the cropping job by selling the grains. He said that as I took leave from the office so I was with limited time and was least concerned with what my wife has done during the whole season. In the end my only concern was to sell the grains to compensate my input cost and to finish my task by end of cropping season and start new crop if possible. He further said, I remember many seasons in which my farm was left uncultivated because of my busy schedule at my work place. This made it very difficult for my wife to domesticate animals as she use to feed animals from the chaff from the farm, grass produced during crop. With the unavailability of food for the animals she has to buy it. It made us to reduce the number of cattle. By keeping cattle she was actually adding income to family by her source. We sell animals for different occasions and she was also making milk products for family and extra was sold. The money she gets by this activity was totally in her possession. She was economically independent as she had money in her pocket, no doubt she spend that money on family but her due share always gave her pride. He said may be because of her monetary contribution she was given due importance in family decisions, (he laughed and said may be that was very selfish of me; I bring her in the decisions to let her pour the money she has in her pocket). He said I was just joking but God knows my

intensions I always respected her and love her. She took care of my family when I was not around. She is very brave and courageous.

He said that with reduction of family kept animals my wife has faced number of problems like those that she was asking for money from me to buy each and every thing. This made me realized that how she was handling everything in her possible limits. She was before that not totally but was at par with me because of her contributions. She was deprived off her power in number of aspects. This type of situation appeared in almost every other household in village.

They were considered separate class not only due to their biology but also due to social and economic assets, they own. As in rural areas and world in general, women are not considered equal to men. He further continued, I have observed that with mechanization of farm operations women in the village has lost their control on resources. This has made them a power less group in village as now they were deprived of their economic dependence. It is of no concern if they were totally or partially independent. This has also increased dependence of females on the males .He said, “Farm machines in Tapijali village have not only generated inequalities but also enforced gender stratification”.

Here, they were particularly talking of those females who were no longer working on the farms because their family males were not engaged in traditional farming practices. These females, who used to help their husbands during ploughing by taking food to the fields, bringing back tired bullocks, now stayed at home and did not participate in farming activities. They could not come out of the house to bring back tired bullock or give food to her husband. So, in this way their mobility was checked. On the other hand, they appeared to have ample time because they were liberated from the responsibility of visiting the farms. In reality, when tractor was working

in the field, she was busy at home preparing food for the driver and his helper; and for the male member who was supervising them in the field. Therefore, her work increased at home for cooking. In most of the cases, they had to prepare separate food for workers on the farm. This food was prepared other than the meal, which she had prepared for the rest of the family.

#### **7.4 The Mechanization Process – Neutral or Biased**

Machines are supposed to be gender blind or neutral not concerned with who was using them. However, the socio-economic conditions in which mechanization was carried out were not neutral resulting in lack of neutrality in the process of mechanization and technological selection and approval (Lubwama 1999). Their availability, assemblage and use were biased due to a number of factors like educations, training, money handling, landownership, family structure. These factors all facilitated males to have access to machines not the females (Olsen 2002). Women in the village had little or no access to land or credit or market-related information and were unable to benefit from either from an open competitive market or system mechanization.

According to Olsen (2002), women have less access to information as they have less educational facilities, they are not particularly trained to use the machines, their mobility is less as compared to men and their status was low as compared to men in general. These situations are partially representative of women in Tapiali. In Tapiali village, though literacy rate was high among girls compared with boys, no girl was visiting any technical or professional institution. The technical education was needed, but no female was allowed or found interested in doing a degree in a technical discipline, which was considered an exclusive male domain. This attitude in the village helped in stratifying education as stereotypical for boys (males) and girls (females).

In many instances, women in Tapiali had heavy work schedules both in the household and on the farm (as invisible worker), so they found little or no time to participate in promotional



campaigns. It may also be kept in mind that women were not allowed by males of the family to attend such gatherings as were primarily organized by males and also unconsciously the males in village wanted their women to be so “innocent” that they were even scared of machines.

## **7.5 Social Status and Economic Rights**

Social, economic and political interests intersect to create new power sectors and centers of power. Such institution must keep their existence politically. Thus intersecting the broader universe of meanings of social worlds and opening up social usage that was specific to mechanization is very crucial. Political thought of the personalities in power and donors influenced the rural world’s economy and social life as well as cultural anthropology.

The relation of an individual to the changing culture is of important concern. How many changes were integrated with older patterns of culture and personality varies with culture to culture and village to village. It was found that inter group inequalities were prominent. Results of socio-economic differentiation had increased economic insecurity but older values and attitudes still existed. The level of integration and rationalization of such attitude was very important. Inequalities in Tapiali village were not so prominent within the group. While studying different ethnic groups (See discussion on village caste groups in chapter No 5 in same study), Rajputs were primarily landlords and present farmers. Their prime family occupation was agriculture. Most of these switched to other non-farm based sources of income. As a whole, they were a well-off group in the village, though exceptions to this were also there. Rest of the groups Mochies and Molvies had small land and were small farmers. Economic inequalities within the groups began to develop based on land under cultivation and non-agriculture activities (Adams 1984). The status, attitudes and roles were imperfectly co-related with the socio-economic groups and later with the ethnic groups within Tapiali village. As in the village, many individuals

of marginal ethnic groups had more education and better earning as their primary source of income came from non-farm sector.

Coming to gatherings in social life in non-share crop growers, gatherings on Eids within family or on marriage were more frequent among Rajputs as they were the largest and the most powerful group living in Tapiali village. As for other marginal groups and tenants, who included some Rajput families, visits to such gatherings were not that frequent, though men and women met in their respective circles in informal gatherings.

It was found in Tapiali village that obtained high female status from differential dealing should not be mixed with high female status that had control and real power over basic resources and important decisions. All the females in the area had limited rights and decision power irrespective of their family's financial status. This finding was supported by observations for the right to select a spouse. Islam gave this basic right to female.

### **Case study 10**

Kianaat was Twenty years young girl. She is the only daughter in the family of four brothers. She has recently completed her graduation. Her parents were very much worried for her marriage. Her father and brothers always say that she can join university but all family is more interested in her marriage. She did not want to get married that early. She has never worked in the farm but she use to help her mother in house chores. When expressing her ideals for her spouse she said he must be smart and educated. She said that my parents will never allow me to select my spouse, though they can fulfill her every material desires. She considered herself as the luckiest individual as she is the princes of her family. She said but my family steps down when it comes to the right given to me by Islam "selection of spouse". She said, "**it is not only my**

**family males, the men of Tapiali village did not talk of this right; rather they had misconceptions and had strongly misinterpreted the right of having four wives at a time”.**

The appearance of partial or semi sexual equality in some areas, such as sexual permissiveness or marriage forms, need not correspond to equality in the division or rewards of labor, nor in the arenas of political, economic, and military decision-making. These were still under the shadow of bias and females were no doubt given few rights. With this, her role had experienced change or transition. Brown (1970) and Sanday (1974) make a similar point in discussion that high female status derived from deferential treatment should not be messed with high female status composed in actual power and control over basic resources and important economic decisions(Bossen 1975).

Engel’s position here is vindicated when he argued that equality for women would depend on their participation in public production on a large scale. Boserup, in an important study, while comparing women's economic functions across five continents, states that, women always seem to bear a large part of the work burden in the more egalitarian Five hundred and ninety American ethnologist communities (Bossen 1975). Others point out that this contribution to production was a necessary condition for high female status, but that the problem was more complex (Beneria and Sen 1981) (Momsen 1986). Indeed, it was characteristic of highly stratified or slave-owning societies that a heavy work contribution *per se* does not permit one to share equally in the fruits of society.

In Tapiali, women were not considered economically active or productive. There seem to be two directions from which people were exempted from society's "productive work": they belonged to the "idle rich" where the exercise of power could override productive functions, or they were "idle," poor, and powerless such that their productive functions were devalued or not

counted. In the case of women in Tapiali, they were not fully integrated into the laboring group; they usually fell into the latter group. This did not mean that they had in fact been exempted from the need to produce any socially useful product or service, but rather that for social and historical reasons, they had been confined to or forced to specialize in the production of one product or a narrow range of products and services only. Typically, this meant specialization in domestic service, including childbearing and rearing, and other kinds of services. It was by virtue of this specialization that women became an easily exploited surplus labor force. If female labor were in oversupply relative to the needs of society, the status of all women would be lowered. This was exactly what happened in Tapiali village.

Despite that, women played a vital role in the family, though they had significantly less access to monetary, physical and social resources. In the case of Tapiali village, there were only two women who had control on property. No woman was ever elected politically to represent the voice of women as no woman had ever offered herself for election in the village.

In spite of the fact that women had less access to resources, had no health facility in the village; had no control on land, yet they were independent in casting their vote. The reasons given by them were that first it was their vote and they were free to cast it; secondly, in the polling booth, no man or women was standing beside them, so they were free to exercise their right independently. After coming out of the booth, they might not mention for whom they actually voted. This was evident from the Table 7-2: Decision for Casting Vote

**Table 7-2: Decision for Casting Vote**

<b>Decision authority</b>	<b>No. of Households</b>
Independent	198
Decision influenced by Husband/Father	03
<b>Total</b>	<b>201</b>

Source: Village Survey by the Author 2007

Discussion in the foregoing paragraphs show that women's confined access to productive resources like land (farm, non-farm), property, cash, basic and tertiary modern education was determined and ensured by the social status they had in society. It restricted women's assets base only to marriage – dowry and haq mehar.

## **7.6 Mechanization and Attitude towards Scientific Inquiry**

Keller (1992) has pointed out that the presence of gender markings in the root categories of natural science and their use in hierarchical ordering of such categories e.g. mind and nature, reason and feeling, objective and subjective has made scientific education and its products gender biased (Keller 1992). An age-old perception that women were poor in mathematics, essentially unscientific and non-technical, and only good in social networking has further constrained women's choice and opportunities. However, recently, it has been recognized that values are embedded within the social process of scientific study and technological innovation and that these (technical education and machines) were unbiased neutral forces (Valian 1999). It is quite clear from this, study that women have to face and confront extreme difficulty to gain access to theoretical and practical scientific and technical knowledge.

In Tapijali village, though literacy rate was high among girls compared with boys, no female was allowed or found interested in doing a degree in a technical discipline. In the village, all males were in favor of female education, but when asked what they would recommend for their daughters to study, no one recommend technical education. This approach was at variance with the wider questioning of self-generated benefits that modern science and mechanization had brought to patriarchy. It was perceived that instead of finding what was wrong with either women, or capitalism or patriarchy, it would be better to enquire, as what was wrong in the tradition of science. Women must not be blamed as brains non-permeable to logic and science. In

fact it was the social economic environment and mental approach of people that considered women could be incapacitated for scientific enquiry. Clobert worked and put forth the idea that cooking was a science providing body nutrients in enhanced form. It means women were doing science every day whenever they cooked food. It is the proper seasoning and flavoring at proper time, which adds life to food during preparation.

It could be said that machine (tractor) had developed a demand for new skills of its maintenance and repair. The technical education was needed, but was considered an exclusive male domain. This helped males to take advantage and rule the machines and mark them as male domain. This attitude segregated education into different domains of males and females. Women in Tapiali village were prevented to access technology and machines. Women in the village entered in a phase of (psychological) denial of reality and self-pity. In the words of Wright the ideological problem women face in gaining full access to science and technology was perhaps more than we had heretofore acknowledged (Rowbotham 1995).

### **Case study 11**

Qadeer is a Seventeen years old boy studying in class 10 in Kahuta high school. He is student of science group. His father primarily engaged in nonfarm sector and is part time farmer now. He is living in a combine family system, where all children are going to different schools and colleges. He told that his family males are studying in science group at different educational levels. He said but unfortunately, all family females are studying in arts and humanity group at different educational levels. He is of the view about this clear divide, “may be initially it was lack of guidance for the girls about the advantages of the group. He said it might be the misconception created about its difficulty, and parents might not have encouraged them to join it. He produced justification for the lack of encouragement by the parents as in our society girls

always need company of some attendants from the family, so in case of extra guidance or tuition they have to accompany their girls to the source. May be that is why they never encouraged them. As he remembers that, his father was more interested for him to join the science group. I saw in my family that our leading young females have not even encouraged youngsters about this. In his words, **“Females do not want to know science because they consider it as stranger and they have to seclude, otherwise it is not bad for females to study science. He further added that they were scared because they were not well introduced with it.”**

However, the field survey also made it clear that girls were permitted to get educated but within certain limits like keeping in mind the financial condition of the family. Every household favored further education of girls if the due chance was provided. This is evident from the Table 7-3: Permission for Females Further Education for Females.

**Table 7-3: Permission for Females Further Education for Females**

No. of responses	Yes		No	
	No	%	No	%
On the basis of household	201	100	0	0

Source: Village Survey by the Author 2007

Essentially female values were formed in cultures in which gender inequality prevailed. They were not isolated from social relations. It was very alarming and obviously dangerous that people closed themselves in cages of definitions which only represented male perspective of culture and confined rather than emancipated women (Sayers 1982). Plumwood has presented the view that nature hardly determines ground for resistance to muscular leadership or hegemony. It was observed in Tapiali village that women were close to nature e.g. reproduction. Men challenged false optimism about the “Progressive” aspects of mechanization (Plumwood

1991). He has presented the view that nature hardly determines ground for resistance to muscular leadership or hegemony. Values and expectation regulating women in different roles had not changed with change in culture over time (See the conceptual model of structuration by Rose 1998). Therefore, the gap between utopian and real environment has paralyzed strategic growth and development of women identity, status and role (Rowbotham 1995). The idea of paralyzing females was countered as disallowing science and machines, but it was wrong in current situation and time as it generated a collective powerless group without collective political endeavor in the village Tapiali.

As in the rural areas of many countries<sup>37</sup>, women in Tapiali village also had the need for rural women's access to technology and research. This need was linked to training and access to information through extension services, rural women's groups and non-governmental organizations. Some of the United Nations entities<sup>38</sup> also underscore the need for access to technology and basic technical knowhow for rural women if they were not to be marginalized by the broader macro-level developments that were having an impact on their lives and the agricultural sector<sup>39</sup>. In Tapiali village, these international as well as national agencies were not on the scene.

## **7.7 Change in Economic Base and Social Organization**

Bossen (1975) has mentioned that economic role is fundamental in determining the status of an individual in any kind of culture (Bossen 1975). In the economic system like Tapiali, where majority of the people were not officially involved in agriculture as their primary occupation, it was apparent that insecurity and mobility would shift the economic base and as a result,

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<sup>37</sup> Chile, El Salvador, Guatemala, Latvia, Peru, Russian Federation, Spain and Ukraine.

<sup>38</sup> ESCAP, FAO, the World Bank and UNESCO.

<sup>39</sup> para 40, Economic and Social Council Substantive session of 1999 Item 14 (a) of the provisional agenda



organized social and economic institutions of the village will start to disintegrate. This would change the pattern and style of social connectivity.

If any older pattern existed, it would be only for the service of protective needs, having little personal affiliation and involvement. In landowners, despite increasingly fragmented social organization, there still existed a clearly defined sense of solidarity regardless of status with growing mechanization. The organic solidarity was taking a refined shape. The dents in this organic solidarity can be seen in the migration of *kammis* (low caste) such as *Lohars* (blacksmiths) and *Kumhars* (potters) to nearby towns and cities. With mechanization came enlightenment and education. In the case of this relationship, there is as much a chance for reverse causality. There is, however, no doubt that the children of *Lohars* and *Kumhars* are not interested in being treated as *kammis*. With formal (school and college) and informal (radio, TV and interaction in cities) education, they have learnt about equality and egalitarian society. Education has also given them a new confidence to face the world with a different perspective. They have, therefore, broken the age old shackles of caste system where they stood at the bottom and forced to adopt their forefathers' profession or job. They left the village to join government or private sector for services; there they have their recognition as employee of the department no matter what is their status in office. They, however, continue to visit village Tapiali at the weekends or during *Eid* holidays to meet their parents and friends. These visits are likely to get fewer in number as they settle more in towns and their parents and siblings cease to exist.

Mechanization in Tapiali has resulted in decrease in acreage of land under cultivation. This was the result of reasons like: tractor has displaced labor used in ploughing. So, displaced people started joining non-agriculture activities no matter how much they were paid. These activities no doubt, helped to bring cash economy in the village. Cash gained after the farm

produce had been sold accompanied this. This favored accumulation of monetary resource with person earning the money. It also resulted in small size family, breaking traditional system of joint family.

The biased introduction of machines not only created a gap between male and female but also made the latter less productive. According to Agarwal (1984, 1994), the introduction of technology and machines was based on biases, so were its results.

### **Case study 12**

Muhammad Shahab, 24 years of age, belongs to the family of village which has gone through all stages of development and change in the village. His great grandfather was one of the big farmers of the village. He owned large farm lands on which he worked with his wife and other helpers. He sent his kids to study outside the village, almost everyone got high ranked job, and only two of them continued as part time worker. His grandfather was one of them. His father also continued as part time farmer as he was working abroad. Shahab said we are still living in the village, as I am the youngest child of family and only male child after my father. It was difficult for my mother to live alone in the city with young girls, so she decided to live in the village. He added she also took responsibility to take of family elders and now our house is the core house in the family. My great grandfather is still alive, we are very attached to him he is very learned and jolly. He is one of my best friends. He told, my great grandfather and grandfather always misses their family and tells us how they worked in fields and use to share within family. My grandfather shared that we all brothers were very close. It is not only immediate family even all extended family members were so close that somebody outside the village could not recognize us cousins. We use to help each other in form of physical labor, economic, social and psychological aspect. There was unsaid rule in the family to keep everyone

at same level of general standard of village. He uses to repeat the words, **“in early days of our childhood we were not even distinguish between our father and uncles as we all were living in joint family and they all bring same things for all the children in the family. When I went to school for the first time and my teacher asked, “What is the name of your father? I was stunned, who to name. My teacher was also form the same village he told me the name of my father and said it is not only your problem, all the elders love the kids so much in the village, that there is no need to tell them who their father is. It is the main aim to teach the kids to respect and love elders”.**

Shahab said I want to be lawyer and continue my study abroad but at times I got scared, he explained his fear as, **“When listening to old stories of elders, it seems that we have turned into machines using its power without brain. This condition is harmful to humanity”.** He said that he has seen many films where machines took over and ruined the world. He said, my grandfather knows how to raise pulses, fruits, vegetables as he use to grow all that in past. In our house, he has planted apple trees, which he has grafted himself. Everybody says, they have not tasted such juicy apples ever in life. My uncle who lives outside country when comes back and we have apple crop prepared, my father gives him rich share to give him that as token to his close foreign friends.

My parents use to tell me that during weekends and in winter and summer vacations, they have ample time to play with the friends. They name different games and sports, which he has never played. He also said that my parents have told that they use to play in fields hide and seek, and different games in the street and on common ground in center of village, **“Jaraana”** (graveyard). He said it is now no more open ground; it has been walled for its safety. He expressed **“I feel my village is one in the hands of machines and they will destroy us not**

**using weapons of war but robbing our village of self-sufficiency in food. Our hearts are turning in cogs just performing the function not realizing the fact, that it may bring harm to others. Just like an executor cutting the throat of a person who was not guilty”.**

In response to the changes brought by mechanization, it has been observed that the level of social and economic activity has also changed. It is concluded that women have become more dependent on man for her economic and social well-being and correspondingly were much less indispensable to her husband for his well-being.

As part of production, the important role of women in rural areas was eradication of malnutrition (Moser 1989). When their role as a producer changed, so would their role as an eradicator of malnutrition. Women traditionally mediated the link between food production and malnutrition as their role of manager of the household (food preparation and production in cases where she acted like producer). She was primarily responsible for nutrition and healthcare (Pinstrup-Andersen 1984, Ejembi *et al.*, 2006).

Poverty was reflected in undernourishment and malnourishment, which were common features of life in the rural areas of developing countries and which resulted mostly from inadequate income or purchasing power, lack of know-how and differential access within the household, rather than from food shortages<sup>40</sup>. When the food security in the household was threatened, the burden of more hard work fell mainly on women, because they had the primary responsibility for household food security and therefore, had to work harder to make ends meet<sup>41</sup>.

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<sup>40</sup> IFAD, "Household food security: implications for policy and action for rural poverty alleviation and nutrition", Staff Working Paper Series on Household Food Security and Gender, No. 1.

<sup>41</sup> Economic and Social Council Substantive session of 1999 Item 14 (a) of the provisional agenda

## 7.8 Changing Life Styles

According to Bennett (1944), rural society was changing from relatively homogenous self-sufficient communities to communities with differentiated societies whose economic system was dependent on urban market (Bennett 1944). With the introduction of mechanization in nearby towns and village itself, the age of cheap mass produced things started.

Food preparation was made easy by flourmills and semi prepared ingredients were available in the market (even in Tapiali village shop). Biryani masala, Qorma Masala, and pasta were at high items of sale; prepared vermicelli, brown dried vermicelli were also centers of attraction. Bakery items like biscuits, bread, rusk, were there to make women life easy. But all of these have raised dependency on cash income. Improved transport and need for ready cash income means that men were leaving agriculture due to its intensive inputs and joined non-agriculture activities outside Tapiali village to earn cash-based monthly income. This may not be comparable to agricultural income but was regular and enough to meet both ends meet.

### Case study 13

Seventy-five years old, Irshab Bibi was full time worker on family farm. She told us about her skills in food preservation and milk products preparation. She said it was part of my household routine. I use to get up early in the morning before the sun rises, my husband goes to field for ploughing in the season and she goes to barn to take care of animals. She gets milk from animals, offer her prayers and prepare the breakfast. After finishing with morning food preparation and sending kids to school, she clean the house and goes to fields to perform her operations of cutting grass, weeding and other crop caring activity and she takes food for her husband to fields. In before midday she is back to house and then prepare lunch, she says lunch was simple at that time making buttermilk, flat bread dressed heavily with animal fat, mango or

chili sauce and yogurt. She adds it was very necessary socially to use all homemade products to show their aristocracy.

She says now with machines slowly everything has changed and even the tradition to use all homemade food. She narrates, **“It was a curse for a family to buy ghee, flour, chilies, local fruits, milk, eggs, chicken pulses & grains from the market of near urban center. Only tea, gurr (jiggery) or sugar was bought from the market but now it was pride for a family that every day shopper (plastic bag) was coming from town market having something to eat. It is a status symbol now and it shows that we have money to buy things from the market.”**

Rothschild noted that women of rural areas usually had irregular patterns of income which was also unpredictable (Safilios-Rothschild 1990). They used their income (if they have) immediately to acquire food or other needed items. In this situation, they did not hold money as reserve or did not feel as partners in family earning. Rook 1987 found that male heads were not impulsive buyer as female heads (Rook 1987). His findings also revealed that female heads were short of money as compared to male heads. Study in 1998 by Wood helped to find that larger the household sizes, higher the portion of income spent on basis of needs satisfaction like food, slotting as compared with small households (Wood 1998).

## **7.9 Normative Relation between Man and Machine**

In this study, it was also found that in the bull ploughing time women were able to touch the plough and the bull (animal); they were totally or partially responsible for the care and ownership. They were aware of the animal's needs, but in the case of machine, it was observed: firstly, they did not own it nor did they have any sense of ownership; secondly, other males (other than her family) were operating the machine. So, the machine was working out of her domain due to seclusion or *purdha*. She could not enjoy the machine closely, while working and

again she could not take the machine home after working in the farm. In other words, there was no sense of belonging or association with the machine. She had no idea about mechanical faults and also did not know how to fix them. In this manner, machine was placed out of her bound. The relationship between machine and women had developed in such a manner that machine was made to be something which could be ruined by the hands of women (Del and Acevedo 1995, Acevedo and Burkett 2001).

### **7.10 Creating a brave new world?**

The emancipation of rural women remained important in Tapiali as one could not negate the control and role played by rural women in the productive (in agriculture production) and care giving (reproduction) spheres. For rural women, access to productive resources like land, credit, technology employment, capital, education and health were very important when addressing the change in Tapiali. It was found that the participation of women in the social and economic institutions of Tapiali village and decision-making was very important to change the status and role of women.

In Tapiali, economic and social overlapping of users complemented each other, one reinforcing the other. Access to land for women was closely linked to legally determine inheritance rights and to customs and traditions to give away from one family to the other (in the process of marriage). In Tapiali, parents preferred to spend on son's education rather than on that of a daughter because socially sons were responsible for parents' maintenance in old age, while daughters were perceived as temporary guests in parent's house till their marriage (Schwartz and Hanson 1992, Nyamongo 2000). Social dichotomy of exploitation reduced the avenues of employment and access to resources for women.

As discussed extensively in the literature, women's access to credit was limited because both formal and informal credit institutions cater to property owners who can provide collateral. All formal credit institutions seek tangible collateral for loans. Hence, women in Tapiali were excluded effectively from any institutional credit because of their little access to inherited property. Though in Islam women were given due share in inheritance in the property of her parents, husband and son, in reality women in Tapiali were not given their due share. Rather they were emotionally, socially and morally so blackmailed that it was considered insulting for them to share their inherited property with anybody (son or husband). They were made to think that it was only the right of their brothers. In fact, they were expected to forgo their right over such inheritance; this was ideally expected of good women. This left women with little property to offer as collateral and get engaged in any business activity.

**Table 7-4: Property Management (By Females)**

<b>Property managers</b>	<b>No. of households</b>	<b>%</b>
Male	201	100
Female	0	0

Source: Village Survey by the Author 2007

Out of two hundred and one households, not a single one had reported of a female handling property matters. Even female heads of households openly admitted that if there came any property problem, their male relatives such as brothers, sons, father, or uncles would help them out in this. It was not socially acceptable that they should get involved in such matters. This was an issue of the outdoor, which men should take care of.

The same situation applied to the ownership of a house in the village. There were not many females, who owned a house there.



**Table 7-5: Ownership of House**

<b>Gender of Owner</b>	<b>Number</b>	<b>%</b>
Male	196	98
Female	05	02
Total	201	100

Source: Village Survey by the Author 2007

Women access to productive resources was therefore, confined. This was predicated on the status of women as determined by norms of the society. Theoretically, at the macro level, women's economic empowerment was recognized as a means for reducing poverty and economic growth, but in the micro world of Tapijali village, these notions could not penetrate and take root. Practically they do not possess tangible economic assets and access to credit. They are even deprived of their produce share as their status and source of social and economic power.

### **7.11 Conclusion**

A society's attitudes, preferences, biases and prejudices develop over centuries and are the product of a complex mix of culture, history, custom and religion. Changing these is a difficult task. There is no doubt that compared to more developed countries, ideas about the roles of men and women are more deeply held in Pakistan<sup>42</sup>. However, the change has already started to take place. Increase in the percentage of girls going to school, increase in female literacy rate, increase in the percentage of women in the labor force point to a change in the right direction. In reality, change in social attitude is a real issue.

In order to bring about a change in the status of women, we need to bring about a change in men's attitudes towards women as well as tradition and religion. Therefore exclusivist movements must not be advocated; to the contrary, enlightened women and men need to work together towards shrewd ends.

<sup>42</sup> <http://www.pakistan.gov.pk/divisions/women-development-division/media/06chp5.pdf>

At the world summit in 2005, leaders reaffirmed their commitment to gender equality and women's improvement as essential to developments peace and security. Over three decades gender issues and women's empowerment have received focused visibility and attentions on all global, regional, national and local levels. Educational facilities of girls helped raise girls' enrolment in schools.

## **Chapter 8**

### **Economic Impact of Mechanization on Women**

#### **8.1 Introduction**

Bossen (1975) has pointed out that economic role is fundamental in determining the status of an individual in any kind of culture. In the context of our study, the economic role is seen in the backdrop of mechanization. During field work in the village Tapiali, it was observed that machines on the farm as a stimulus acted differently when they were borrowed. This difference was proportionate with the unique physical and non-physical components of environment of every culture and society.

This distinctive milieu affected the status of women in society, including the rural set up of village Tapiali. Women were kept out of or restricted from new economic development. Even in modern capitalist economy of today, they were expected to join un paid service sector consisting of domestic nursing or schoolteachers. This fact was very clear in Tapiali, where they were permitted to join only certain female specific jobs, endorsed by the village society.

#### **8.2 Mechanization and Control over Resources**

Mechanization has enhanced men's power. Men were presented as the masters of mechanization and women as the servants of machines (Pringle 1989). Bossen argues that modern technology and machines do not make the appearance of mechanization neutral; it tends to support structural interests and priorities of the forces (system) introducing or imposing them (Bossen 1975). One of the structural characteristics of mechanized (capitalist) societies was a priority for males in all productive activities, particularly in capital intensive occupations. There

was a corresponding preference to allocate women the responsibility of domestic, dependent and marginal economic roles. These were preferences transferred along with technology and mechanization through a host of institutions like education, economy and finance.

Data from the village supported this observation. It was noticed that all the tractor and thresher drivers were male.

#### **Case study 14**

Sultan Begum, fifty years of age and married to her cousin in the village. She was active participant in farm operations on her family farm even before her marriage, because her mother went blind after her middle age. Her brothers were primarily engaged in nonfarm activities. They only perform farming operations at time of ploughing and threshing the produce. She was alone taking care of crop throughout the cropping season. When the grains were sold, the brothers gave her all the money as an honor to her. As she was the in-charge of family affairs and was quite independent woman but have to depend on males members about almost every family decision. She said I have to plan according to the availability of male members and there were seasons when none of them was available. It was hard to cultivate all land in this situation so she switched to machines as necessity and social pursuit at that time. She said, “it was very charming for me as I can cultivate all my family land and only one of my brother can look after the operation if all were not available. That was great relief, but with time number of complications appeared as for hiring the machines, I was again dependent on males. After threshing to compensate the input cost we have to sell more grains, and again to find competitive price for grains, I have to depend on family males or someone from the village to find profit for me. She said with number of things changing in village due to mechanization the attitude of males has

also changed, their arrogance has also increased. The machines and the related new jobs (here she wants to say affairs related to handling of machines) have added in their power to control.

She said in her interview “these men felt proud of their friendship with machine, this gave them satisfaction not only in comparison with females but also added a feather in their cap among male folk as many old ones were not users of machines.”

### **Case study 15**

Nineteen years old girl Raani has completed her F.sc, unfortunately she was not able to make merit for medical college and her family has given her permission to continue her study in the field of nursing. She has got admission in nursing college in Lahore but still waiting for the start of classes. Her brothers were also going to school but according to her were just going to school. They were not interested in their studies because they know that they have land for farming and their parents will send them to Dubai to earn money. She told that they are even willing to work as physical laborer there but not here. She said in surprise that, I am astonished to see those handling mobiles, water pump in home and different machines. She said we only once called the water pump mechanic to fix it and after that, my brothers themselves fixed it. They are now so expert that all people ask them to fix their water pumps and if the problem is over complicated or there is some problem, which they cannot handle because of lack of unnecessary equipment, they ask to take it to mechanic. She said in general I have seen this aptitude in males, she further said, “they (male) did not bother to earn or study but are proud to know a lot about machines, driving automobiles, and searching channels on TV etc.).

Contrary to men, mechanization has not empowered women; rather it has reinforced their powerlessness and dependence on man. This was experienced in the Tapiali village where mechanization in farm had reduced females’ access and control on “produce”. As a result, their

role as a producer or co-producer had transformed into that of a consumer and in an individual having less control on produce (Cockburn 1983, Cockburn and Ormrod 1993). This reduced control on produce was characteristic of capitalist societies. In Tapiali village, machines introduced were generating Marxian alienation because women as partners in farm production, though invisible workers on family farms were still practicing agriculture and had lost control on grains as a family food. This was a result of farm mechanization, in which after heavy monetary inputs, maximum grains were sold from farms to cover expenses and earn some profit.

Females were now burdened in double as they shared the burden of visible and invisible work (Horne 1999). They spent their time on household chores and also on family farms for which they were not paid. They were spending time on livestock management, in kitchen gardens sharing family production but, as they were not contributing in cash terms, their efforts were neglected. Another important point is that they were contributing at Blumberg's micro level. Their contribution was considered in proportion to man at this level and was mainly within the family and was not (Fakoya *et al.*, 2006). Different households had variety and diversity in income sources. Income was a major material resource used to purchase or obtain resources like food, shelter and clothing.

### **8.3 Changing Role of Woman as a Consumer**

Mechanization has an impact on women's role in agriculture and trade in internal trade market. They had been expelled or excluded from production roles in the production of grain. Increasing communication had reduced the internal trade in which women were active participants and in this way, they lost an active role in the exchange of products they used to produce and sell to become partially or totally, economically independent. The case of livestock was not much different either. Before the introduction of machines, they had livestock not only

to fulfill family needs, but also for preparing different products like cheese, curd, animal fat (ghee), butter, buttermilk. These products were sold in the market and the return of the product or cash was totally at the disposal of females (Shiva 2000). Now as most of the land was uncultivated due to intensive inputs, it was difficult for females to have heavy livestock. They still had a few but they were primarily for the purpose of selling animals.

The discussion above shows that women in Tapijali were experiencing a new role as a consumer not as a partner in production (even there, they were invisible).

She still got control on many non-monetary resources, but with mechanization her shared control on produce was either finished or greatly diminished and now she was performing the job of a crop care-taker during crop production and was still yet unpaid. Input in the form of tractors and threshers (along with seed graders, pesticides, herbicides) required money. The man who was in control of surplus value wanted money immediately to pay for mechanized inputs (compared with natural inputs). He, therefore, had little option in storing extra grains as he used to do before the introduction of farm mechanization. Now grains were sold on the very first opportunity and in some cases even from the field. In this situation, female had lost control (total or shared) on produce in the form of “kind.” Now when she was in need of money to buy things for the family, the needs, which she could satisfy independently before, she was dependent on the availability of money by male. As for the time she used to spend on the farm helping in farm production activities was now used in non-farm activities e.g. in watching T.V. visiting nearby town.

### **Case study 16**

Sixty years old Tapijali villager Gul Mubarak was always part time worker. He told that he was youngest child in the family and he told that my elder brother was twenty-two years older

than me. He said I not only got love of my parents but parent like siblings. He considered himself as very blessed one because there were so many to take care of him. He while remembering his childhood told that my mother and grandmother got up before sunrise. They have divided the chores, my grandmother milks the animals and my mother prepares the breakfast for whole family. Than my aunts cleanup the house and my grandmother and mother went to the fields carrying breakfast for the males who went to fields. They work there to help them and look after family kitchen garden. By midday my aunts make the lunch, which was simple oven, bread (tandoori rotti) topped with butter, buttermilk, mango or chili sauce and yogurt. We all sit together and enjoy the lunch. For short time in summer few takes afternoon nap. At namazay Assar tea was prepared and he added, you know if someone from village come to visit the house he/she was insisted to sit till tea time if little time was left and was again and again insisted to sit till evening. He said it was not poverty or lack of hospitality that they were not immediately preparing the tea. He sighed and said, now if you go to any house they immediately serve Coca-cola, and after that tea, it is all so mechanical and is fast that the sincerity added during its preparation is lacking in it. Now they have all the things bought from market. There are living in village and it is very surprising that very few families have milk available at home by their own animals. They (females) have much more facilities than ten to fifteen years ago. They have readymade or semi prepared food available at shops in the village or buy it from near town. He said, "I am not against these facilities but I feel they are apparently enjoying and wasting time at expense of their identity. Their participation and skills in family daily schedule ensures their respect, power and status."

He said, we as male members respected our family females but their all day round effort was added source of care for them. We no doubt respect them even today but my Lord knows,



today we know they were just sitting, gossiping and wasting time. I know girls of my daughter's age (his daughter was twenty-one) do not know any craft like crochet, knitting, and food preservation. He said, I am not judgmental, but I know my daughter also lack patience to listen argument against her. It is because she has developed patience by seeing and evolving herself in creativity. He ended his comment by saying "no pain, no gain".

#### 8.4 Role of Woman in Independent Decision Making

The survey of village Tapiali showed that the females had little or no right to make economic decisions independently. Thirty one percent of the households reported that the power of decision to cultivate was with the male and these thirty one percent also included those males who were not in favor of cultivating land. Only one female, who was head of the household and her husband, was not alive and kids were very young, made her own independent decision for cultivation on the farm. The details can be seen in the table:

**Table 8-1: Decision to cultivate land**

<b>Decision Authority</b>	<b>No</b>	<b>%</b>
Season	80	39.80
Male of household	62	30.84
Female of household	01	0.5
Pocket <sup>43</sup>	58	28.86
<b>Total</b>	<b>201</b>	<b>100</b>

Source: Village Survey by the Author

From the established record, there were 14 female heads of household but only one was independent in making decision for cultivation. In her case too, she had no another option.

These findings are in line with the other findings on the subject. They point out that money management was very necessary for better life. It was an organized process of allocating

<sup>43</sup> Pocket here means the financial condition of decision maker (family or head of household).

or using money to achieve specified goals that must be purchased for family needs. Rothschild found that female income patterns were irregular and not reliable (Safilios-Rothschild 1990). Income of females was immediately, consumed primarily on the fulfillment of basic needs of the family.

### **8.5 Invisible Female Participation in Farm Operations**

In the rain fed areas like Tapiali, two distinct patterns of subsistence farming were identified.

These were:

- a. Male farming system depending on machines; they were largely contributing to agricultural food production in the village.
- b. The agriculture production was a result of female participation, which was primarily invisible.

In Tapiali village, farm mechanization has enhanced men's power and they were liberated from manual labor of ploughing and separating grains from stalk. Ploughing and threshing were done at the start and at the end of the cropping season and men's involvement was higher in these early and final stages of cultivation. As discussed earlier, men also monopolized the mechanical work. For example, they drove tractors and carried out mechanical threshing. Since women were staying back at home, they were considered responsible for taking care of the farm. All non-mechanized operations, such as weeding, grain storage, grass cutting, crop harvesting, were totally or partially the responsibility of females. Food processing and storage was also an area where women's participation was considerably higher than that of men.

During the period when men were away, they had double burden of household chores as well as farm work. (See discussion on double burden on females in sections mentioning women role in chapter 3 as literature review part 1 of same study. Also see advantages of multiple role

and double burden in the literature review of same chapter). Women contributed to almost all kinds of identified crop tasks with major contribution going to seed preparation, collection and application of farmyard manure, husking maize and storage (Freedman *et al.*, 1988).

The data on the time budget of females working on family farms in Tapiali showed that even the invisible activities of females took as much time as visible ones. Invisible activities included carrying meals, drinks etc. from the house to men working in the field; kitchen gardening; cleaning and drying farm produce for storage; and making clay stoves.

**Table 8-2: Female Farm Operations and Used Tools**

Activity	No.	Tool
Cutting grass	173	Hoe
Crop cutting	80	Sickle
Weeding	173	Hoe
Green manuring	72	Hands and scraper
Grain storage	173	Hands and Scraper
Chaff storage	98	Hands
Other	38	Hoe, Spade, sickle

Source: Village Survey for Research 2007

The Table 8-2: Female Farm Operations and Used Tools shows that female farming operations were primarily conducted with the help of naked hands, hoe, sickle and spade.

All these operations were done on the farm but the female workers were not paid for their work, as they were working for their families on their family farms. Males were liberated from this type of on-farm work and they were free to move to nearby town for different leisurely activities or for other jobs.

Before the tractor and thresher came to scene, men folk were responsible for ploughing and they were also used to share burden of looking after crop in many cases and most of males had agriculture as their primary sources of income. At that time, they were not alienated from the

“produce”. They along with females performed vegetable gardening, planted trees for future use, and took care of the fruit trees, etc. Females always helped men to carry out their outside functions in the field on agricultural lands. Females got crop grains totally at their disposal as grains were brought to the house and sold when needed, immediate food needs were fulfilled at home e.g. milk, ghee (animal fat) vegetables, fruits and poultry.

## **8.6 Changes in Power Dynamics**

Machines satisfied muscles and patriarchy (Danermark 2002). Since no family in Tapiali village could afford to own a tractor, the family male hired a tractor for ploughing operations before sowing. Female freedom to visit the field during ploughing was therefore checked due to social restrictions and religious inhibitions (segregation of females from males).

Changes in power dynamics were limited to Blumberg’s micro level and had less hold on resources while males enjoyed freedom (social and economic) at macro level. Females took care of the crop during the cropping period, they gave time and labor but at the time of harvest, man automatically took charge of total farm production. The male was the one who would decide for the crop utility. The grains to be used as food for family were sent to home while the surplus produce in Marxian terms was in man’s control. It was this control of surplus value, which gave economic power to male. Power attained in this manner also influenced social and political resources.

It was observed that even at the time of harvesting, females were engaged either in crop cutting and if the family had hired waged labor, females were responsible for providing food to the hired labor force for crop cutting in fields. In case of shortage of labor, she herself was found working to fulfill the shortage of labor in crop harvesting. In this process, labor was paid in the

form of wages; this made them alienated<sup>44</sup> from the output of their work, but satisfied, as their goal was to get some money by selling their labor power. Women were also alienated from the farm produce, as they didn't have power over the produce for which, she had worked in the family farm. Man himself was alien to crop output as he was only supposed to get money. His input in crop production was only in ploughing and threshing. He had not all the time supervised and provided his services for the crop production; he acted as capitalist in this process in light of views of Karl Max. He sold the product to get money and women were provided with grains for the family for use until the next crop. She was again working as she had to store grains and made them available for family in the form of food products. However, the difference between men, paid labor and women is that the latter not only remain unpaid in terms of money but also have no control on the proceeds (both in kind and cash). This leads to her economic dependence. Alternatively, economic dependence results in the loss of social and political prestige as compared to those having economic power (male).

### **Case study 17**

Rasheeda Begum was Sixty seven years old, mother of two children and now living as widow was one of my key informants. She was the daughter-in-law of very rich man from village. She was married in 1950. She was living in the village since her marriage but during this whole span, for ten years she lived outside the village. Her family owned very big house in the village with all the facilities. They have modern toilets and electrical water geysers. Every bedroom has television set and was well furnished. She is financially very sound, as her husband has left her very huge commercial property for her in near town. She said, I have always raised

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<sup>44</sup> see classical views of Marx on mechanization and alienation in the discussion generated in; section 2.7 of same work

goats and poultry to generate money for me even when my husband was alive. That was source of power to me I can help people in need and also ensure personal social relations in society. She said my husband respected me lot and always gave me economic freedom but I feel even after his death though he has done a lot for me on individual basis but still this activity is now not only bringing me money but also pleasure and satisfaction. She explained her pleasure as; she got ample time at this part of life so it is an activity for her. Other is she still enjoys partnership in family decisions not only as elder of family but as person with positive contributions.

She expressed her views as; **machines have robbed women with the power of independence. They have their money in form of material (gains or produce in the house for year round use). She told the researcher that, in past if something was needed from village shop e.g. match box, kerosene oil etc, women were in a position to barter against portion from surplus produce. She at that time could even buy sugar, gur (Jaggeryr), toffees and rusk, etc. immediately when needed and had independence in the purchase of such type of items. Females were satisfied as their shared produce (surplus value) was in their own control. They do not have to ask male members for money every time and always have extra buying power in form of barter.**

### **Case study 18**

Zaytoon Begum thirty-five years of age was performing farming operations whenever her family cultivates the land. Her husband was engaged in nonfarm activity. He was working as driver in semi-governmental organization. His duty rotates in twenty-four hours. He has been provided with the medical facility for the whole family by the office. Zaytoon was totally, dependent on her husband for her needs. She also got two children who are going to private school in near village. For them they have to cut down their needs to maximum extent. She said

we have small piece of land but when we hire farm machines their rent and allied expenses by end of cropping period is at times more than what they obtain in form of grains. After getting grains, there is still more effort to get them grinded from nearby flourmill. For carrying the grain to mill and back to house and for grinding they have to pay. She admitted that we have limited income and all the time I have to compromise my needs and at times my kids' desires. She said there are times by end of month when I refuse my kids to get them even sweets from village shop. When they were young they cannot understand my problem now they are seven and eight years of age they realize that most of the time we cannot waste money like that, reality is we even do not have penny to spend. She said our economic status has taught them to compromise at such an early stage of their life. She shared her childhood memories about her grandmother and told the researcher that women in past had the ability to buy in form of barter as they have buying power in form of produce from farm. She said they were so, resourceful that they even oblige poor neighbors, relatives and kammies (lower domestic working class) and got their help when needed e.g. on the arrival of unexpected guests, extra household chores e.g. repairing mud walls, roofs, detailed cleaning of grain store houses, washing clothes etc. She said, **“I do not remember even a single incident when my mother or grandmother once refused me for buying sweets (macchi) from the shop”**.

According to Zaitoon they were more confident and respectful in immediate family as well as in community because of their resources. With introduction of machines we got rid of traditional plough and bullocks but **“Haal ki nukkray kai laaya aapay wei nukra lagi gay aan”**(we cornered the plough and this act of ours has cornered us(economically and socially)).

She further said, as they have resource in hand and were independently fulfilling needs. They were obliging other people and developing new relations at their personal end. They have their personal identity, their inner desire to show power and to exercise power was satisfied. In this process, they were the sole controller of grains given to them as family food. In this way, the females could satisfy their desire to exercise their power and exhibit control on the resources. They also have the chance to earn satisfaction of their kids by immediately satisfying their childhood needs.

### **Case study 19**

Sajida Begum was well educated with professional teaching diploma and was 45 years of age. She was also my key informant. She was widow and mother of two children. She never worked in farm, but her parental family and in-laws have large farms, which they use to cultivate till few years back. She said they are not no more cultivating farms because of the reason that all the farms are joint property of grand family and the farms on papers were divided in the sub-families but in reality they are not. When on cultivates farm other comes to take their share but when asked to participate in farm operations or asked to share the input cost, they hesitate for skip that.

Keeping all that in picture now, they do not cultivate the land. When was asked that why they do not divide the land she told its divided in almost all parts in village and nobody is willing to take less fertile part of land. She said and if in reality the land is divided there will be very small parcels left with them. She said I still remember the time when my grandmother and mother, by end of year clean the grain store. There were many from the worker class families making advance commitments to clean that. She told the reason that there were much still in the grain house and my grandmother and mother use to give that all left over to them. This was on



case, they also share new crop as well as left over preserved food like pickles, chilies, pulses and things like these. They were having more control on resources as well as in social web. She said, females now had less control on resources and limited option to exercise power.

She said, it is human desire to have power and the loss of “power of control” by women on produce has raised my problems. She highlighted one as, **“to control, women now unduly, interfere in the lives of others”**. This was to compensate her power to control resources. This gave birth to many social problems in immediate and extended family and even in community. Similarly, her lost control on the use of produce also reduced her power to influence her neighbors, poor relatives, kammies, and her inner desire to exhibit power went unsatisfied through this channel.

## **8.7 Mechanization and Employment of Women**

It was important for the ongoing mechanization in the Village to match local resources and social conditions. The success of capital-intensive mechanization in raising production in the countries practicing commercial farming could not be duplicated in Tapiali without significant cost in terms of unemployment and dislocation. The displacement of rural labor by capital-intensive mechanization has hit rural women harder than men in Tapiali village, because the household food security for which female had primary responsibility was increasingly becoming dependent on wages earned from non-agriculture sector. Work traditionally undertaken by females had been degraded to the level of non-skilled work, since most of the work had been taken over by machines. Females had been reduced to manual work alone. Mechanization was forcing inhabitants to think of new land consolidation ideas to meet the general requirement of

economic input for mechanization to ensure profitability from investments in mechanization.<sup>45</sup> In Tapiali village, it was noticed that the agricultural mechanization had been fully criticized by its villagers, as it failed to bring desired result and found synonymous with rural unemployment and other bad, exacerbating social effects.

## **8.8 Marginalization of Small Farmers**

Technological advances in the agricultural sectors of Tapiali village have often been carried out without due consideration to local conditions or availability of resources and without consulting local people, particularly rural women (Rosenberger 1997). Successful agricultural technologies tended to be appropriated by big landowners who have knowledge, capital, and appropriate institutional connections. Small landlords generally lacked these advantages and therefore, were marginalized in acquiring technology.<sup>46</sup> It was also observed that all the used farm machines were not designed for local needs and were acquired without keeping in mind the needs of *rain fed* land agriculture.

In the Village, it was recorded that ploughing work finished within hours or in days, but in reality heavy monetary input was put in tractor as its rent. Tractor charges on an hourly basis, which used to drain family's monetary resources because the tractor driver was paid in cash on the spot. This heavy input in the form of tractor rent also played its role on reducing the cultivated area.

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<sup>45</sup> Economic and Social Council Substantive session of 1999 Item 14 (a) of the provisional agenda

<sup>46</sup> Economic and Social Council Substantive Session of 1999, Item 14 (a) of the provisional agenda.

## Case study 20

Raja Azaad was fifty years old part time farmer as he was teaching in government school. He said my family was full time farmer and in village, it was matter of disgrace if you leave your land uncultivated. When tractor was introduced, it brought honor and pleasure to family. Initially its rent was no problem as most of the families still hold large pieces of land and the oil price was not this much high. When overall produce was sold and the input cost was calculated, it turns to be within profit range. This liberated many males to join non-farm sector. He said, **“It is very strange that we have farm land, we are living in village and buying our food from market”**.

He said my father was luck as his income source was enough to support family and he has independent basic food supply, which he gets from his farm. He said, now with increase of oil prices rents for farm machines have raised multi folds. We cannot afford to pay such heavy rents and our input cost lies outside the range of our output. We are left with no option except to leave our farm uncultivated. With our limited income, we cannot afford to bear losses in farming. We have to allocate heavy portion of our income to buy food supplies. No doubt, that portion is still less than the loss we have to bear after farming the land. He said but this has reduced overall income of family and people instead of getting rich are moving towards poverty. It has given way to many social problems in the family and in community. It has also raised dependence on males or the earning members. He said, **“Machines have even robbed the males with power to decide whether to cultivate this cropping time or not. Now in this situation, monetary resources of the family is one of the factors for the green signal to cultivate the farm and also, how much land to cultivate, or totally leave it uncultivated”**.

### Case study 21

Raja Waseem was forty-one years old landowner. He never participated in farming operations and just hired the machines and labor to do that for him. He inherited huge commercial property outside the village and in the village farm land too. He told that I wanted to cultivate my whole land but the input cost is so heavy that I now decided to produce grains for my family use only. He said when father was alive and he used to hire machine and labor, the cost was in the range of profit or in even bad weather, conditions do not go on loss side. But in year 2007, rate of crude oil and as it is linked to international market its price even rises twice a month. In such decisive conditions farming now turns in to money absorbing trade. Its profit level at least in village conditions is negligible. He further added here farm size, all rental machines and dependency on rainwater made it very hard to get more profit or adopt it as profession. He said that in this situation (in which heavy inputs were needed) farmers cultivate only the grain (wheat) to furnish needs of his family. At times situation was so worst that the produce of wheat crop was not even enough for the annual food needs of family and he has to buy grains or flour from market.

There were only 20 heads of household having agriculture as their full time occupation but they also have support of other members of family who were involved in non-agriculture activities.

Large farmers who were able to bear this monetary input also had other high paying sources of income from non-farm sector. Chaudhary also mentioned the same for Pakistani arid agriculture areas that benefits of mechanization were for large farmers and heavy inputs were robbing small farmers of their economic power to cultivate. In Tapiali village, small farmers were finding alternative and additional ways to meet the family needs. This was the image from the experiences during 1980s and 90's. Until now individuals were experiencing the same in the

village. At national level intentionally devalued foreign exchange, reduced subsidies high interest rates made it difficult to adopt farm mechanization technology at costs bearable by local economic scale (Chaudhry 1995).

## 8.9 Restructuring of Village Livelihood

Mechanization has displaced women from their traditional work in the field as well as in the household. To facilitate the study of change in the role of women, rural women's occupation can be grouped as under:

- a. Farm worker
- b. Non-farm worker
- c. House work

Gathered data shows female occupational structure favoring concentration of females in teaching profession. Second concentration was found in unskilled jobs as daily wagers. See table 8.3 below.

**Table 8-3: Female Occupations**

Occupation	Female
daily wagers	7
Drivers	0
army(serving)	0
Job (Misc)	4
Business	1
Foreign	0
Army (retd)	0
Teacher	18
Agriculture	0

Source: Village Survey for Research 2007

The economic and non-economic activities of three generation of females from the same household have been given in the table 8-4:

**Table 8-4: Activities of Three Generations of Females**

<b>Activity</b>	<b>Grandmother (percentage)</b>	<b>Mother (percentage)</b>	<b>Daughter (percentage)</b>
Farm	90	58.7	10.9
Non-farm	00	25	46
House	100	16.3	47

Source: Village Survey for Research 2007

Changes in the occupational structure in the generation of same family showed that women engaged in agriculture decreased in successive generations. The proportion of women engaged in non-farm activities and house work has gone up. The reason for this decrease in farm activity was actually mechanization on the farm which indirectly affected their activities and control over resources.

This could be clearly understood by viewing data gathered for male transformation of occupation and their on-farm activities. It was evident from the data that all farmers who were cultivating their fields were using tractor for ploughing and thresher for separating grains from stalk. The shift from farm to non-farm activities has been observed. This could be read with the help of table 8-5:

**Table 8-5: Changes in the Occupation of Male Heads**

<b>Relation with Head</b>	<b>Agriculture</b>	<b>Non-Agriculture</b>	<b>Both</b>
Grand father	173	11	17
Father	169	17	85
Present head	20	167	37

Source: Village Survey for Research 2007

In Tapiali village before mechanization, the relationship of people with land was that of a landlord no matter what the land size was or what the social ethnic group from which one

belonged was. But with the introduction of mechanization in agriculture and better transportation network, the share of non-agriculture activities had increased in the economy of the village.

This introduced cash economy and tenancy of land in Tapiali village. As in survey, it was recorded that Eighty-six percent of grandfathers of households were agriculturists and practiced agriculture on their own land. Then in the next generation, 84 percent of people were practicing farmers. In 2007, only fifty-four percent of land was cultivated by families themselves, almost eleven percent of land was on tenancy and the remaining land was uncultivated. Only ten percent of heads of household had agriculture as their prime occupation.

With this background, when males were in transitory phase of occupational change, the situation of female was also changing as the economic base of the family was changing. Among women above fifty years of age, only two females were government school teachers working in the paid sector. Before these two females, no female was engaged in paid labor.

## **8.10 Traditional Occupation to Modern Vacation Time**

### **Case study 22**

Sixty two years old Nazeera Begum, was with strong agricultural land lord family background. She still works on family farm. She told that since she has started working in farm she is using same type of tools. But farming equipment related to male operations has totally changed. She said but this change in their (male) tools has changed a lot. She revealed that in the past, women were working on the farms as well as in the houses to perform not only house chores but also various crafts and food preservation activities. The males of the family themselves were physically engaged in farm operations, that was why they were respecting women. It was very pleasant to remember that not only in the family but also in society in

general respected them because of their contributions. Women gained respect because of their contributions, their sharing as invisible contributors, managers and producers of food items and preserving food at home. However, due to high rents of tractor and thresher now family-farming operations has been reduced. She said no doubt, there are other factors reducing this activity. Now when males are just visitors and acting as investors, paying for inputs, their attitude towards the co-workers in farm has been changed. They consider females as workers and not as partners in produce. They sell maximum of the produce to compensate their investments. This has brought major changes in the attitude towards the females in family and in society. As value they are respected but as dependent being considered as burden. She said females still wants to work in fields but the heavy inputs in farming have reduced the farmed land.

### **Case study 23**

Jameela Begum told about past and imparted the picture of her role in economy as producer. She admitted to organized her kitchen garden, prepare flour from wheat grains, and she used to manage grains at household level. She also acted as grain storekeeper. (These were the roles performed by almost all the grandmothers of the families, selected for in depth interviews, because of the presence of three-generation group in which the youngest one was no more than 16 years of age). Knowing the situation it could be said, that She (Jameela Begum) acted as seed bank manager having seeds of pulses, wheat, corn, barley, vegetables (to some extent fruits) and mustard. Her skills of food drying, pickling and fruits preservation in the forms of Murabas (jams and marmalades) and fruit chips helped to sustain the environment by fulfilling food needs without destroying the natural environment; she was the provider of food nutrients by food prepared by milk and milk products. By number of observations, the author found that females



have changed their role from active environment resources manager to a non-participant member in environment.

#### **Case study 24**

Raja Gul Bahar, Nazim of the area, was Fifty years old, also had knowledge of modern agriculture. He also owned more than hundred acres of canal-irrigated farmland in interior of Punjab. His experience of both irrigated and rainfed farming explained many issues. He was very knowledgeable and resourceful person. He has spent part of his life outside the village but told that during every summer vacations he came to village. He told that systems are always sustained by the contributions of each component. He mentioned that women in past, without knowing, were helping in maintaining soil fertility by managing green manure (animal dung). He said they use to pick all dung from their animal courtyard and even from the streets. Their action was playing double role, one they were adding nutrients in form of green manure to the farm. This also helped in maintaining nutrient cycle of soil as well as nature. Second was they were properly cleaning barn house and all the streets by picking the dung from the streets. This helped to maintain the clean environment in the village.

He said this attitude of community service and responsibility really made them responsible mothers. The mothers of that time trained their children to positively contribute and own their responsibility. He said, “I remember when mothers’ use to check their children by asking, “do not tell me that he (other) has not done this, tell me have you done that.” This attitude of training their kids brought fruit to them. They in fact were training children to bear responsibility instead of easy escapes by shedding them to others without even informing them”. The attitude of females to reuse and sense of responsibility were essences for healthy society.

## Case study 25

Maryam was Twenty-five years of age. Her father was full time farmer. Her brothers were helping the father and they themselves were engaged in nonfarm sector. She said when my father cultivates the farm as preparation task he gathers branches of trees from near collective forest and made to stand as fence at entrance point of fields, to protect them from grazing animals. She told that for this collection my father and brothers go to forest early in the morning for many weeks. She said my father consider it as extra work because he has to make fence on all side of the fields. He always say that in past we(all community members) gather the dried braches of trees from the village and at common points on the lower side of the village, we make common fence and in this way almost half of the village area was protected from grazing animals. This is how with less collective effort major cultivated land was protected. Now he alone has to collect more braches when they use to collect them collectively. It was than collective responsibility to protect our fields. He also said in this we all participate and come more close to work for single aim. We all were living as one family at that time, but now everyone is enclosed in its own shell and sense of collective responsibility has disappeared. We all are standing at our own. She said that now being helper in farming operations my added job is to maintain that fence. She said I call it added duty because my mother told me that when it was collective fence little time and effort was spent to maintain that. She said that while maintain the fence she at time have to exchange words with those who were disturbing that and at time situation is not pleasant. She said my mother and father misses those collective efforts very much and grumbles on the individualistic attitudes of others. She said, "I feel respect for others life, property and honor are values only in stories."

In the Tapiali, village it was observed that scattered individual fields were fenced and rest of the fields were left fellow. Domesticated animals were now mostly left for grazing in those

fellow fields and many a times they did enter in crop fields destroying standing crops. On the contrary to crop caring attitude related to females mentioned by key informant, was not found in females. They were not bothered about manuring crops as chemical fertilizer were there as replacement. In the streets of Tapiali village, animal dung was commonly seen, making environment of street filthy. No one was bothered on waste of the organic environment friendly nutrients.

Before mechanization females were acting to maintain the nutrient cycle within system, but now their missing action to add nutrient to natural environment was creating many problems like polluted environment because of scattered animal dung in Tapiali village streets, also soil was being polluted by excessive use of artificial fertilizers. The demand of nutrients in the farm soil would be satisfied if field was selected for cropping operations. This fulfillment was at the cost of family monetary resources.

Females themselves were reducing their importance in community by non-participatory attitude and their role of a producer has changed to that of a consumer. In this new role, the females in Tapiali were furnishing capitalist power, giving away every penny to buy things and even the basic needs as food was purchased. They were acting as a facilitator for resource draining pump from money resource pool of family by purchasing vegetables, flour, fruit, milk, chilies, carbohydrates, fuel, pulses, and grains. Before mechanization, they used to produce and prepare these on the farm and in house themselves. Hunger was one of the basic need demanding satisfaction, by taking meals number of times a day. *Sajida Begum's comment on the situation was very apt, when she said, "forgetting agricultural practices were furnishing the practice to purchase"*.

Mechanization in Tapiali has made women's life easy in the context of physical effort and availability of time. They were relaxed, no farm work (exception was 173 farm workers) but they were not realizing that their non-participatory attitude was draining out natural as well as monetary resources; they were losing their position in the family life. They were paying heavy cost in the form of their changed role from a producer to a consumer, increased dependency, loss of access to resources etc,

### **Case study 26**

Fifty-six years old Shamshad Begum was the Principal in government high school in a nearby village Hanesar. All her family females were engaged on family farms and the family was active in farming operations. She told that her mother was very much active in farming rations, as my father was also headmaster in nearby school. She told that my mother has never asked my father to give money for daily food expenses or other little needs for the children. She used to preserve food in form of dried spices, pickles, sauces, murabas, butter fat, butter. She said my mother in her last days of life use to say, "I do not consider a lady in house as lady if she is buying food for the family from market unless and until there is unseen happened".

Shamshad said prior to new roles assumed or forced on females in village they were adding the family income by providing them with homemade food and other products. Money saved in this manner was used to add into family asserts in form of quality education to children, purchasing property or gold ornaments. She said you can see females sitting and gossiping in houses not because of their royalty but because of their poverty. She said by poverty I mean they are now poor in crafts, food preservation knowledge; they are totally dependent on their males monetary resources. They receive fewer shares because major part of income is now spent on food purchases. They are also poor as their parents by this age had saved a lot inform of physical

assets for family and they are just living hand to mouth, spending on food purchase which they can save by little effort and management. She said I strongly disagree with the argument that females in past were not aware of financial management and not earning for the family. She further added that in past females earning was primarily in form of kind, like crop (left over after the yearly use of family), desi ghee (animal fat), eggs and poultry. She was adding to family monetary resources by arranging homemade products for family use. The females at that time were more independent and good managers of resources and time. Now females though earning in form of money but are more dependent on family males.

### **8.11 Feminization of Poverty**

There was an overall agreement on the notion that men and women experience poverty differently; linking gender and poverty was a complex matter that has increasingly become the focus of analysis. The growing literature on poverty has helped to broaden the definition of poverty and generated greater recognition on the multi-dimensionality of poverty. It needs proper and improved visualization of poverty not only in shades of income and expenditure, but also in the broader sense of human poverty a state of deprivation in capabilities (education, health, nutrition, etc.). In Tapiali village, the household income/expenditure based information was important and provided comparative analysis of poverty between male headed and female headed households. They did not show the level of poverty experienced by women and men within the households (Dejene 2007). The gender dimension of poverty rises more transparently via ideas of social indicators. Especially those gathering and attracting the intra-household processes dealing with resource allocation (DAI, 2005).<sup>47</sup>

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<sup>47</sup> Promoting women's economic empowerment in Africa AFDB, 2006

In Tapiali, one of the major finding for the "feminization of poverty" was found linked to a decrease in female participation in production activity. Gender-based inequality within the most households, reinforced and enhanced within the legal, cultural, social, economic and institutional spheres, contributed to women being poorer than men. The invisible workers were not getting their share in income. Income generated by their activities was not in their control and was not necessarily applied by females for fulfilling their immediate household needs.

Change brought was through a well-defined point of departure, removing females from public sphere to pre-defined destination, private sphere, the household. In Tapiali, machines introduced on the farms unexpectedly initiated changes in the economic base of the village. Change in the village was multidimensional (economic, political, social and cultural). These dimensions intersect in complex way. Many of the changes brought in Tapiali were due to non-economic conditions responsible for bringing economic change.

### **8.12 Access to Land**

Land was a critical resource for rural women. It was important for food production for the household and for market-oriented agricultural activities. Land ownership was also critical for raising the social status of rural women. In addition, to facilitate their access to benefits and services such as credit and extension, this tended to be conditional on the availability of land as collateral.

The implementation of such measures, with due cognizance of a gender perspective, can reduce income inequality and human poverty. Rural women can increase their income and contribute to poverty alleviation and sustainable human development if they have access to land.

**Table 8-6: Land Management by Females**

Yes	No
0	201

Source: Village Survey for Research 2007

No or less control over productive resources like land, credit, earned income and cash etc. reduce women power and enhance vulnerability to poverty. Poverty was not only in the form of lack of tangible resources, women were poor in time resource also as they were invisible workers outside household and in household sole worker bearing responsibility of every domestic chore. Poverty was also related to the type of employment in which one was engaged. This is relevant to informal sector employment (Chen *et al.*, 2004).

The land rights of women can be seen as elements in the “social bases of self-respect,” which was defined in 1971 and later in 2001, as perhaps the most vital “primary rights” (Rawls 1971, 2001). Sen (2000) argues that millions of people living in developing countries were not free. “Even if they were not technically slaves, they were denied elementary freedoms and remain imprisoned in one way or another by economic poverty, social deprivation, political tyranny or cultural authoritarianism”. Sen (2000) argues that it was important for governments through institutions like markets, political parties, legislatures, the judiciary and the media to contribute to development by enhancing individual freedom . The fundamental point was that there was need for countries and the international community to fulfill or protect the land rights of women, since they were so crucial for their sustained livelihood. The human rights logic takes hard line for women’s right to non-segregation and discrimination on basis of gender, equality for both male and female, human dignity, power and control on social, economic and personal decisions, and economic well-being (Walker 2002). A human rights approach requires an analysis of why women still experience discrimination in obtaining land rights and how the land rights of women can be observed and protected and an analysis of what steps the governments need to undertake

to ensure that the land rights of women were acknowledged and protected<sup>48</sup>. It was very interesting that women in Islam were provided with due share in family property as mother, sister daughter and as wife. But in reality this right has never been granted by males (very few exceptions were recorded, as in Tapiali only two women were given this right with the reason of not having a brother, or we can say as they were the single child of the family)

Mechanization has played an important role in creating differentiation of economic status and Mechanization was a process of using tools as tool itself was a product of mechanization. Mechanization of tangible objects of environment simultaneously goes with the mechanization of mind. Sometimes mechanization may be considered as a process similar to informal education. Mechanization is also a process of refinement of institutions relating to an environment (society).

### 8.13 Monthly Expenditure Management

Out of two hundred and one households, only 26 household confirmed that females in role of mother, sister, daughter, and wife assisted the heads of households to run monthly expenditure. Their relations with the head have been given in the table 8-7:

**Table 8-7: Females Helping Heads of the Households in Monthly Expenditure**

Relation with the Head	Number of persons
Mother	8
Wife	16
Sister	1
Daughter	1

Source: Village Survey for Research 2007

<sup>48</sup> Land in Africa: Market Asset, or Secure Livelihood? Gladys Mutangadura, 2004



Head provided her with limited amount of cash and she was supposed to organize the family expenditure. In all these cases, female was responsible for the whole, household expenditure and paid least priority to her needs.

#### **8.14 Ownership of House**

The case of owning a house is not much different either. It can also serve the same purpose of collateral or raising the social and economic prestige of a woman.

**Table 8-8: Ownership of House**

<b>Male</b>	<b>Female</b>
196	5

Source: Village Survey for Research 2007

Only five households out of total two hundred and one households reported the female ownership of house. Two of them had inherited the house as property and the rest had ownership of house after the death of their husbands.

#### **8.15 Mitigating the Negative Impact of Mechanization**

The introduction of agricultural mechanization was a complex process. In Tapiali village, a focus group discussion was arranged in the village mosque, which was attended by thirteen members. All of them used to be members of families practicing full time farming. There was consensus amongst them that they were experiencing shift in economy due to lack of design or proper strategy in introducing and reaping the benefits of mechanization. In the absence of proper policy like common reforms to increase farm size, subsidies and positive results of mechanization like increased food production, increased productivity and advancement of rural

economies, mechanization would continue to remain a negative thing in a poor rain fed economy similar to Tapiali village.

### **Case study 27**

Muhammad Anayaat, was fifty-five years old farmer, was very much worried about the situation though he cultivates his whole land but as his land size is very small and is distributed in different parts of village, his input and output cost are mostly on negative side.

He said I am adding nonfarm income of my son to support my family. He said I remember old days when my farm produce so much grains that I was alone supporting my whole family and married my two sisters as my father died when we were very young.

He continued and said that my family herd was of good enough size to support my family. Now to compensate the cost of rents of machines, I have to sell most of the grains and at times, I have to buy grains from the market by end of year. These machines have robbed him of his economic independence. At this stage of life, I am planning to leave farming, as it is not wise to invest money from other resources to sustain it and getting no profit at end of cropping season.

He provided supplementary arguments towards displacement of agriculture labor, feminization of poverty, increased economic dependency, abandoning of farms due to heavy inputs in mechanization. To avoid these negative results of agricultural mechanization, all stressed on the need for proper formulation of effective mechanization policy and strategy according to local needs as it was accepted that food shortage in the village as well as in country could only be met by improved productivity of produce and land.

In the village, it was felt that approval of mechanization irrespective of technology, awareness must be promoted amongst farmers (users) for the acceptance and optimization of mechanization. Researchers involved in developing the machine or designing the technology,

users (Farmers) in case of agricultural mechanization, promoters of mechanization must work in collaboration. Testing of machine on the site must involve researcher, user and promoter.

At distribution stage, proper use of machine must be promoted e.g. demonstration, leaflets, brochures, manuals not only mentioning the physical use and handling of machines but also sensitize users on its effects. Before using a machine, one must be aware of its existence, its use, relevance; a user must be confident enough to handle it and consciously afford to purchase and maintain it.

### **8.16 Conclusion**

Kumar, Manas, Dash and Misra point out that woman in the rural areas suffer a lot on social and economic front. They were at the most fragile end in the rural socio-economic structure. If women were not involved in agricultural production, their economic independence must be assured by providing other opportunities. According to 1998 census, Pakistani women constituted little more than half of the population of the country. In Tapiali village, out of one thousand five hundred and sixty nine members population seven hundred and eighty nine were women but only thirty were earning partners and one hundred and seventy three were farm workers, working on their family land. In Tapiali village, the resources to sustain household living were derived from agricultural or non-agricultural activities or both. These included farm produce, material goods, cash income, clothing, family labor, time and energy invested on farms, which they combined in varying degrees for productive purposes to sustain the family. According to Bennett (1944), one of the main resources of the household was the energy and time of the members spent on activities to produce or acquire monetary assets.

Also, the growing participation of women in the formal sector of economy, as an index of modernization, has been taken to imply increasing equality. Goode (1960) apparently related the

extent of female wage labor with a change from conventional family structures to the modern conjugal family and female economic independence. Hence, modern changes that bring societies closer to the Western pattern and standard were presented as advantageous to women (Lipman-Blumen and Tickamyer 1975).

## **Chapter 9**

### **Conclusion**

The study aims to examine the impact of mechanization on the role of women in the rural areas of Pakistan. Recognition of this change is the goal of this study. For this purpose, Tapiali village was selected as a case study. Mechanization of agriculture is something that has affected the economic lives of village folks especially women directly and in turn has modified their habits and living patterns. In other words, mechanization has put women into new moulds and roles in the rural society. Her role in society is seen both independently as well as dependently upon other actors in society. Mechanization of agriculture is a catalyst in this case that has induced this change. The study also looks at woman as a well-integrated part of a social system.

Replacement of human labor is called mechanization. When a machine is used to produce output, it takes the form of technology and this process is called mechanization. Traditionally, technology is considered a mediator between culture and environment. Mechanization also encompasses instrumental practices, like the creation, fabrication and use of means and machines. It is also closely connected with institutionalized needs and ends-in-view that mechanization serves. These researchers also restrict the definition of mechanization to material artifacts, their human production, and their purposeful use. Agricultural mechanization embraces the use of tools and machines for agriculture that includes three main power sources: human, animal, and mechanical.

The main impact of the idea of mechanization comes from the assumption that all social structures and systems of social control are crumbling. Mechanized societies can no longer be defined by absolute principles, values, and norms but instead are denoted by change, the triumph

of instrumental rationality. Mechanization can be associated with a process of growing differentiation of economic, political, and cultural subsystems. Machines are neutral and rational until they arrive and operate in a biased and value laden society. Inefficient social institutions are in conflict with mechanical efficiency. Social way of finding a problem is through negotiation, while mechanical solution emphasizes control. In other words, mechanized solutions were objective, while social solutions were subjective.

Mechanization acts as stimulus and triggers change in culture and vice versa. Change is prevalent right from the domestic to farm-life and from the public to private spheres. Mechanization reflects situation – specific compromises between the old and the new ways of doing things. Any change in one unit will affect all other units working for the same “whole”.

The prime goal of mechanization is to reduce pressure on land and produce enough food to support population. Increase in population was an important factor for increased mechanization. Mechanization must be applied to improve and sustain agricultural productivity. The pace of mechanization is influenced by a number of economic factors: capital scarcity, energy costs, farm size and subsidies. Other factors that have led to modernization and mechanization in society are geography, discovery of the new world and the rise of capitalism. The kind of changes that have occurred due to mechanization can be classified into five stages of human development. These are: use of energy muscles; use energy of domesticated animals; use energy of plants; use energy of natural resources and harnessing nuclear energy. These changing patterns in the use of energy have led to changes in the way human beings make their products.

The social position of a person was seen as influencing his/her behavior. In addition, statuses such as gender, ethnicity, sexual orientation and social class also shape roles. In order to survive as a member of society, a person must be able to locate himself accurately in the role

structure. We need skills, aptitudes or competences that facilitate role enactment. Social roles are enacted over time. Role provides a comprehensive pattern for behavior and attitudes. Individuals in society are also classified on the basis of gender.

Mechanization promoted muscularity, machines used even in household chores when were out of order needs male for their repair. This adds to female dependence on males. Females consciously or unconsciously trust males for handling machines. They had no other option as they were not trained to handle and repair machines. In this way these machine were stranger for them not on the basis of use but on the basis of understanding their internal built up. This facilitated males to name machines as male domain. Mechanization has brought capitalist relations re-enforcing patriarchal relations. Increased control on the means of production by males has given new forms of women subordination. Mechanization and new forms of limited access to credit, land and technical education have provided structural ground for increasing women oppression.

A gender role is a set of perceived behavioral norms, associated particularly with males or females, in a given social group or system. It can be a form of division of labor by gender. Society comes to use gender as an organizing category in all aspects of life. A person usually occupies multiple roles. Everyone has to enact his/her role at macrocosmic social system as well as on a concurrent position in the microcosmic personal role systems. Females performing the twin role of mothers and housekeepers inside the house and workers outside can manage smoothly if conditions at both places are conducive to them. Women, whose husbands were working outside the village, were performing roles which traditionally were not found appropriate for them e.g. going to bank, shopping for family. Even though the situation for women has improved during the last century, gender discrimination still persists widely.

The image of woman is in most of the cases derived from western traditional images. The western image of woman is presented as such an ideal that the best thing to happen to her is to adopt the one bestowed upon her in the modern mechanized culture. In present study, efforts were made to understand mechanization as an agency bringing change in the role of women in society. They had replaced animal and “male” labor and saved time and energy. Economically, machines were introduced with an intention to produce more work and bring in more economic prosperity. Farm machines were considered to make rural life mechanized. Male farming operations were mechanized, while females if working on the farms were still using their own traditions tools (hoe, spade and sickle).

Historically village was famous for its food self-sufficiency. A few years back passing by village presented entirely different picture; fields were waiting for cultivation people were bugging food from market. Contemporary image of village was different from its old version. Women entered non-agriculture sector, taking care of their farms as a part time cultivators. Females were apparently free from farm work, as males were not full time farmers in most of the cases.

The context in which rural women experience poverty, engage in agricultural production, and struggle for access to the productive resources, inputs and services that were crucial for optimal participation in socio-economic activities has changed considerably. It was more than ever before governed by a process characterized by the liberalization of trade and markets for food and other products, increasing privatization of resources and services, the reorientation of economic policies under structural adjustment programs, and increased commercialization of agriculture. Agricultural development policies in developing countries were becoming more oriented towards reliance on markets and private agents. With the commercialization of



agriculture, the market place has a more important role to play than it did in the past. More inputs into agricultural production processes were acquired through the market, and more agricultural outputs were sold through the market than has hitherto been the case. Farmers now have to shift from subsistence agricultural production to the growing of cash and export crops.

In the village, resources were distributed in the form of kind and money. Both the agriculture and non-agriculture activities made the resources shift the form from kind to money were in the control of the males. Previously, when males were totally dependent on the farms, they had given away to females the control of excess “produce”. Females, with limited access, had freedom to use the kind to serve immediate needs. Before the introduction of farm machines, no heavy monetary input was needed. Males controlled the produce and duly allocated the produce for the annual food needs of the family after consulting females of the house giving them total control of that part of the “produce”. Her management skills, and freedom for decision in given situation gave them power sharing. They were also granted access to economic resource and were more empowered.

Farmers did not consult their wives for selling crop in the market. It was found that the retention of control of production and of distribution of what was produced allowed men to be dominant in the family and in the wider community because they gained prestige from these acts. Because of their domestic base and limitations on their movement, women were not able to exercise power at the community level, or even the latent power which accrued from land ownership. Now when machines were replacing human and animal labor, heavy monetary inputs forced the producers to market their maximum produce to get money.

The livestock at that time served food needs in the form of milk and milk products. But now livestock was kept but with the intension to sell the animal on “Bari Eid”. It was found that

bought food was preferably given to males. Secondly, these food products gave her control as resource like desi ghee, butter, milk and cheese etc. if sold in the market earned her control and independence in the use of that money.

Her role as a producer of milk products had changed from producer to consumer. Even today few females were involved in livestock rearing but their aim was different as already mentioned. Now family monetary resources were to be allocated for purchase of milk. This was another added burden on the family. Mechanized life in Tapiali has also introduced pressures to get many of the amenities perceived as modern. These include television, refrigerator, mobiles and blenders etc.

Females control on grains not only gave her role in decision making but also the “control”. Once the crop grains for family food needs were handed over to her, she automatically assumed the role for controller of grains. She decided for the allocation of grains for different purposes like, food needs, seeds for next crops, portion given to *kammies* and to different relatives as gift. She acted as a controller, manager and safeguarded the health of seeds. She was also performing her role as “assurer” of food supply in family, carrier and protector of seeds for next crop.

But with mechanization and its heavy inputs, males were leaving the farms. Heavy economic inputs in mechanized agriculture had reduced the magnitude of cultivation, which was practiced by only 10 percent of the households. Many of the farm operations like grass cutting, grains storage (at home for family use) weeding etc. were entirely still female done operations. Due to reduction of area under cultivation and preference for immediate monetary gains to meet different economic needs, she got the left-over from sale to meet the food needs of the family. In this situation her control was reduced and her role of controller and manager had changed.

This also triggered change in her socialization role. Earlier, she used to decide for what to be given to relatives and friends. Near relative gifts were also added in kind by her. This was to make their gifts heavy especially in case of daughters. This added kind was also considered as symbol of prestige for the family sending the gift and also for family receiving it. Now her role as a contributor had changed and she, most of the times, had to depend on males for such relations. This gives power to males to decide on how to carry the relation's and to what extent. Her control on social relation development and continuation was reduced or lost. Mechanization had forced women to share their status and role with males they do not had independent status in mechanized society based on her skills and abilities.

Before mechanization females mobility from farm to house was not restricted. They could freely and independently move from farm to house. But with the introduction of machines, many of the farming activities which were male domains were now mechanized. The female farm operations were still non-mechanized but their mobility was restricted as males were no more helping females in crop care. In this situation only those females of families who were cultivating farm were moving from farm to house but even the number of their visits had been reduced. This has excluded women from the outside environment and limited her to micro level or to her household.

Another observation was the age and marital status of female farm workers. Before mechanization, males were working for longer time and also helping in crop care; females of any age from family could help and go to the farm. But after the introduction of machines, males did not stay long on farm. They just visited on the day of ploughing and threshing. Female movement was restricted and also bracketed with age (their mobility was restricted within community but her out mobility was introduced). This domesticated the females even today.

They fetch water for daily use but many of the households had tube wells inside the house. Though they were not operational throughout the year; still whenever water was available they could not go out.

A Woman's work is devalued whether she performs it inside and outside the domestic spheres. For example, domestic family work of a wife goes unpaid and, hence, undervalued. Similarly, work in the informal sector of the economy (farming) also remains unpaid, whereas work-related roles for women, such as secretary, in the formal sector are underpaid because they were not valued very highly. In the first two instances, role of women in workplace is invisible. The introduction of a money economy tends to devalue the subsistence-based activities of women by forcing them to compete with man, now controlling their subsistence.

Mode of production in which manual work was involved had changed to a mechanized one. Food production for the community and family was changing. Now it was preferred to purchase food for family needs or on very limited scale just for household needs food was produced. Economy had changed from barter to cash-based one.

Changes in economic base from agriculture to a combination of non-farm to agriculture economy strengthened the male power compared to the females. In the family, priority was given to males for job, females giving up their right in favor of males. They were more unemployed giving away control on economic power. In many examples, livestock reared by females were handed over to males to support family in their own way. This added to their economic resources and she gave her power intentionally or unintentionally to males. This was not only giving away of cattle, her decision and control of resource (time of rearing, cattle etc) was transferred to male.

Another change that had been experienced was relating to the decision in marriage preparation. Before mechanization, females were not mobile as they are today; but today, they

had limited access to resources than before. Earlier, after the birth of a girl child they started preparing dowry. They used their skills like embroidery, crochet, knitting, preparing rope used in bed making (*seba*). She also arranged wood for furniture by planting valuable trees; the fully grown tree would be used to prepare furniture at the time of marriage. She was independent at that time in sense that selection and preparations were made over a long span of time. Less male control was reported as very few matters were at the disposal of males, like monetary share in jewelry or wedding day preparation.

A woman's labor contribution did not appear to affect her status in the family since it was assumed as natural. Any power a woman has can be traced to her possession of a scarce and valued resource.

Men have been recruited in modern occupations and urban centers where they have had greater opportunities to receive technical training and modern education, while women have remained in the rural sectors, uneducated in use of machines and technology. A division of labor in which women were roughly equal to men with respect to productivity has developed into one in which women's productivity was greatly surpassed by that of men.

Briefly, we can say that in Tapiali village, mechanization has benefited women to the extent that households in general by raising the standard of living. However, intensive agricultural inputs in the form of machines, fertilizer, pesticides, and techniques of production which, being controlled by and taught principally to males, has adversely affected the women, who lost their traditional rights to land and their traditional functions as agriculturalists, producers, controller or controlling partner. It deprived women of work (which is now invisible) and income generation (by selling dairy products). Their skills were dying and no opportunities were offered to use their talents and skills. Tractors and threshers not only replaced traditional

tools used for ploughing and threshing but also the rural traditions, lifestyle, attitudes and relationships.

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