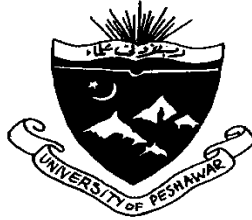


**EX-POST EVALUATION OF RESETTLEMENT OF PEOPLE
DISPLACED BY MULTI - PURPOSE WATER RESOURCE
DEVELOPMENT PROJECTS:**

A CASE STUDY OF TARBELA DAM AFFECTEES, PAKISTAN



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DEDICATION

Dedicated solely to my respectable parents specially to my mother who nourished me up with negligible resources but with indelible affection infused in me even after her surmise

ABSTRACT

Environmental and socio-cultural considerations have often been ignored or neglected in development projects in developing countries which resulted in the deterioration of environment and disruption of socio-cultural fabric. One man's folly is another man's fortune. The far reaching impacts of water resources development projects, no doubt makes the nation prosperous, but those who sacrifice are usually deprived of. The areas submerged and the inhabitants dislocated with numerous reminiscences and cultural ties are obviously ignored and tempted with negligible amount of compensation, which is, in no way can bring back their social associations. Researchers did a lot, covering the technical aspects of Tarbela dam and talked high on the replacement of land to the affectees but turned deaf ear to the psychological and sociological shocks which the affectees are still suffering in. They are still remembering earlier glories of their ancestral lives and the attachment which a native may realize for his birth place. How one can forget the places where one played and the rills one enjoyed. They felt the project had problems with adequately compensating and resettling the affectees.

The present study is an evaluation study to bring out the socio- cultural and environmental impacts of Tarbela Dam affectees. Major hypotheses of the research were; resettlement policies were not efficiently designed and there was inconsistency in the implementation of resettlement program so the project has adversely impacted the family linkage, socio-economic conditions and local traditional values of the affectees. Primary data was collected through field survey. Site visits and detailed discussions with local people and the officials of the various line departments were also made to get in depth understanding of the problems. Field data was analyzed through a statistical package SPSS.PC. In order to test the hypothesis various tests were applied. Chi-square tests were applied to find out relationship between the variables. Association between variables was found by P-value. To find out the strength of association / effect size between independent and dependent variables, Phi, Kendall's tau-b and Spearman Correlation tests were applied. All these results of the research support the hypothesis and conclude that the project has adversely impacted the socio-cultural and psychological conditions of the affectees that need to be properly addressed. In the light of this research some suitable measures are proposed for the elimination or amelioration of such impacts for future projects. This will be helpful to pave the way for sustainable development.

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Section 1

Chapter 1

INTRODUCTION

Chapter one introduces the entire plan of the study dividing it into three main sections. First section deals with introduction to the study including its significance and purpose. Section two briefly introduces the study area while section three explains the research methodology.

1.1.0 Introduction to the study

Pakistan is fortunate enough to have been endowed with large perennial rivers fed by snow covered lofty mountains with great potential for hydropower generation; a cheap source of energy after the nuclear energy. The total catchment area of river Indus in Pakistan including Azad Jammu and Kashmir upstream the Tarbela Dam is about 169644 Km². This is unique catchments in the sense that it contains seven of the world's ten highest peaks and seven world's largest glaciers outside the polar area. The mean annual flow at Tarbela is 94393 million cubic meters (64 Million Acre Feet), of which only 15% is impounded in Tarbela Dam Lake (GOP, 1996).

Total annual water availability in Pakistan is 230084 M cu m (156 MAF), where as present storage capacity is only 26253 M cu m (17.8 MAF), which is 15% of the total surface water. In spite of great potential for water resource development projects, very few such projects are constructed to meet the water and energy demand of the growing population of the country. Tarbela Dam, a multipurpose water resource development project, was started which became operational in 1976 to meet the needs of irrigation and power supply. Unfortunately the projects like this have been under taken without giving due attention to their likely impacts on the environment with special reference to the resettlement of displaced population affected by the construction of Tarbela Dam (IUCN and Centre of Science and Environment, 1994).

Large dams emerged as one of the most vital and visible tools for the development and management of water resources during 20th century. More than 45,000 large dams around the world have played an important role in helping communities and economies harness water resources for food production, energy generation, flood control and domestic use. It is

estimated that about 30-40% of irrigated land and almost one fifth (19%) of world electricity is generated by dams (Kader, 2000).

1.1.1. Significance and Relevance of the Research

Human Geography deals with man, being the central excel in the natural phenomena and the main inhabitant on the surface of the Earth. Some geographers have considered Human Geography too broad in scope, englobing as it does the geographical study of economies, societies, settlement, transport and political units. Basing on this concept and the growing emphases upon man as the principal inhabitant of the planet, an important branch of Human Geography emerged as Population Geography, concerned with the study of spatial variations in the distribution, composition, migrations and growth of populations on the Earth surface. British demographer Ernest Ravenstein studied the pattern of internal migration in England. On the basis of his research he proposed several laws about the human trend regarding the resettlement. He argued that majority of the migrant like to move a short distance from their native abode (Lewis and Walmsley, 1985).

The literature review and discussions with the officials reveal that a very few studies of this nature have been carried out directly on the problem of resettlement. The area of study of this particular discipline is relatively unexplored not only in Pakistan, but also in other developing countries of the world. So, the western authorities have been making experiments on various parameters of resettlement and rehabilitation measures in the World Bank aided projects in Africa and South-East Asian countries (Biswas and El-Hinnawi, 1981). The present study is focussed on some of the physical, socio- economic and cultural characteristics of affected population. In order to test Ernest Ravenstein's law the views of the affectees residing in close vicinity of the project has been compared with those resettled away from their ancestral land. This study is an ex-post evaluation study of the resettlement policy made for affectees consisting of 13-point agenda. It is an attempt at finding out the ground realities by approaching the affectees regarding the issues of allotment of land for residential and agricultural purposes. The study will be useful not only for the affectees of Tarbela Dam but also for future resettlement plans for projects related to the water resource development not only in Pakistan but else where in the world.

1.1.2. Purpose of the study

Pakistan has a great potential for hydropower generation which is a cheap source of energy after the nuclear energy. Pakistan is an energy deficit country generating only 16% of its total hydro-energy potential. Therefore, in these conditions Pakistan has to depend on multipurpose water resource development projects to support the requirements of irrigation and needs of power supply. These projects are environment friendly as compared to thermal and other fossil fuel. However, its main negative impact is on resettlement and maintaining the cultural and social welfare of ousted families, which is very sensitive issue. Inadequate research work on the issues of resettlement has been carried out in Pakistan. The problem of resettlement has not been dealt with in a proper way, so there is strong opposition to the multipurpose water resource development projects not only in Pakistan but elsewhere too.

Big projects like Tarbela Dam deprived affectees from their physical and socio-cultural environment including their homes, customs, ancestral graveyards and other relics. They lost their dignity and self-respect with displacement. Many of the affected people were not fulfilling land allotment criterion because the cultivated land holding size of the affectees, due to the mountainous area, was very small. According to the record of WAPDA Revenue Offices at Tarbela Dam, the total number of landowning families were 23,000, of which only 3067 families could get alternate land (2400 families in Punjab and 667 in Sindh Provinces), which is 13.4% of the total landowning families. Later on another 1744 applicants were given cash payments because no more land was available for them (so only 20.9% families qualify the eligibility criteria). However, many of these affectees could not get possession of the allotted land. In Sindh almost all the affectees were unable to get hold of land because of the threats posed by the local landlords and non-availability of land from the Sindh government.

Very little research work is carried out directly on the issues of resettlement and rehabilitation of Tarbela Dam affectees. This shows that due weightage is not given to key issues like proper resettlement of affectees, selection of sites for settlement towns, mode of compensation, scope for expansion of townships and other related socio-cultural aspects. Therefore, the main purpose of the present study is to analyze the resettlement policy of Tarbela Dam's affectees by involving all the relevant stakeholders. The aim of the study is to

find out the level of people's satisfaction in terms of *socio- cultural cohesion, site selection, land allotment, shifting, compensation, alternative jobs, housing* etc. This information will be useful for formulation of resettlement plans for future projects as well as the uplift of Tarbela Dam affectees.

Here it is pertinent to state that a high level meeting was held on 3rd May 1967 under the chairmanship of the then President of Pakistan Field Marshal Mohammad Ayub Khan that approved 13-point policy/agenda for the resettlement of Tarbela Dam affectees. Its point VII states *“the owners of agricultural land possessing a minimum of half acre of irrigated land or two acres of barani land under cultivation in the affected area should be given the option to purchase agricultural lands in the old colonies of Punjab and Barrage areas of Sindh: (a) The minimum area to be offered will not be less than 2.5 acres in Colony areas and 16-34 acres in Barrage areas depending on the quality of the land. (b) In Colony areas maximum of 50 acres will be offered while in Barrage areas there should be no size restriction”*.

The decision stated in point XII of the resettlement policy (Annex “B”) was not strictly implemented as a result the affectees were dispersed and resettled on their own at different places in the districts of Haripur, Abbottabad, Mansehra, Swabi, Attock, Rawalpindi and other parts of the Punjab Province. Therefore, the present study has critically evaluated the above stated two points and tried to find out whether justice was done to these affectees? The present research would be a step forward towards providing evidence for the accomplishment of the UNMD goals.

1.2.0. INTRODUCTION OF THE STUDY AREA

The study area is spread over in two provinces, namely Punjab and Khyber Pakhtunkhwa. The project site and the adjacent area where majority of the affected population has been resettled lie in the KPK province while the districts of Toba Tek Singh, Jhang, Khanewal, Sargodah, Multan and Lodhran are located in central Punjab. This part of the chapter explains the geographical environment of the study area and is divided into two sections. Section one describes in details the physical environment of Tarbela region of KPK while section two explains the same for the Toba Tek Singh District of Punjab which is the main sample area of the study (figure 1.1).

1.2.1. Physical Environment of Tarbela

In Tarbela region there are three well-defined physical features, namely, the mountains, piedmonts and plains. The generalized geology of the study area is shown in figure 1.2.

1.2.1.1 Mountainous Area

There are two main mountain ranges in the study area i.e. *Gandghar* and *Tanawal* ranges.

1.2.1.1a Gandghar range

The *Gandghar* range forms a prominent physiographic feature on the western tip of *Hazara* region and isolates the Tarbela Ghazi from Haripur district spreading over an area of about 240 Km². Its southern end terminates in the *Haro* river alluvium and the northern extension is delineated by the *Siran* river. *Pirthan* is highest point which is about 1430 meter above sea level. Structurally the mountain is the part of Himalayas which strike from northeast to southwest. The rock formations are arranged in five orders i.e. *Pirthan* limestone, *Tarpakhli* quartzite, *Baghdara* limestone, *Sirikot* slate and *Mohat* limestone (Tahirkheli, 1971).

1.2.1.1b. Tanawal range

Tanawal range is extended in the north and east of Tarbela. Its highest place is *Dagra*, which is 1124.6 m (3427.7 feet) high above the sea level. It is composed of metamorphic and sedimentary rocks. Metamorphic rocks are oldest rocks of the area belonging to late proterozoic Cambrian Era consisting of Schist, quartzite and marble. It overlies the *Hazara* formation in area between *Sherwan* (Abbottabad) and the river Indus (Tahirkheli, 1971).

1.2.1.2 Piedmont area

Piedmont area is a narrow strip of land on the both sides (eastern and western) of Gandghar range and south eastern side of Tanawal range. It is seamed with many perennial and seasonal streams, (termed as “Dara / nullah” in local dialect). The land is flat with a gentle gradient while the dry *Daras* have a comparatively steep slope. Many historical and archaeological villages are found in this area. Ghazi Hamlet, a resettlement village of the displaced persons, is also built here. The land is drier and rains dependent (*barani*) except a few areas where permanent flowing *nullahs* irrigate fields and orchards on small scale

(Tahirkheli, 1971). Land is very fertile if provided with a canal from river Indus. There is a great potential of water harvesting through the construction of small dams to convert this barren land into irrigated land (figure 1.2).

1.2.1.3 Plains/ Flood plain area

Plains of the Tarbela area may be classified in to two types namely *Khari* plain and *Hazara* plain. *Khari* plain is a fertile and densely populated plain, somewhat oval in shape, boarded by the *Gandghar* range and the river Indus on both sides. It can be divided into active and old flood plain. The narrow strip along the river Indus which is inundated during every monsoon season is called active flood plain. The soil is composed of coarse- textured sand and silt. Old flood plain is extended four kilometers east of the river Indus upto the *Gandghar* Piedmont. Mostly the area is composed of sedimentary and metamorphic rocks. The material consists of quaternary alluvium, unconsolidated conglomerate, siltstone and loess (Azhar, 2001).

Hazara plain, locally known as *Maidan-e Hazara*, is very fertile and vast plain of *Hazara* division. It is surrounded by Tanawal ranges in the north and *Gandghar* Mountain in the western side. *Khanpur* hills are located in the southern side while Abbottabad hills form its eastern boarder. It is well drained having loamy and silty soil. It is used for growing high value crops including vegetables and fruit orchards. Tropical fruit orchards of area are very famous all over the country.

1.2.1.4 CLIMATE

1.2.1.4a Rainfall

The climatic data collected from Tarbela Hydrology and Survey Department (1961-2007 average) shows two distinct rainfall periods of the study area i.e. summer and winter, each of which produces some rainfall (table 1.1). The summer rains are caused by the monsoon, while the winter rains by cyclonic storms coming from the southwest (Western disturbances). Tarbela receives an average of 36.94 inches of rainfall, about 40-45 % in months of July and August.

The area is located on the border of the two major climatic zones. Therefore, both monsoons and western disturbances reach late and monthly rainfall is higher in August and March. Total rainfall during summer (May-October) is 24.75 inches while in winter (November-April) it is 12.19 inches. Winter rainfall is well distributed while summer rainfall is unevenly distributed highly concentrated between the last week of July and last week of August. The maximum daily rainfall recorded at Tarbela was 182 mm on July 25, 1985 (Azhar, 2001).

1.2.1.4b Temperature:

“In general the climate of tehsil Ghazi is semi arid. Hot weather starts a little later and ends a little earlier. In the months of June and July the nights are cool but the day temperature is often above 110° F. June is the hottest month with a mean maximum temperature of 44° F (1961-2000). Tarbela Lake has moderated the local climate especially in summer. In winter the months of December, January and February are cold. January is the coldest month with a mean minimum temperature of 4.8° C. Sometimes the temperature falls below the freezing point and ground covers with frost in the morning. Record low temperature of the study area is –0.4° C” (Azhar, 2001).

1.2.1.4c Air

Two interesting local climatic phenomena of the area are *Pura* and *Sorri*. The *Pura* is a hot and dry summer wind that blows southeastern direction from noon to midnight, while *Sorri* is a cold and dry wind that normally blows north east direction during late January and early February. Monthly average wind velocities ranged from 2.8 to 6.3 Km/h (1.5 to 3.4 Knots). Local air that blows during the March and early April damages the standing wheat crops. The study area is relatively dry with an average annual relative humidity of 58% (Azhar, 2001).

Table 1.1 Mean monthly temperature and rainfall at Tarbela (1961-2007)

Month	Temp. ° F		Rainfall (Inches)
	Maximum	Minimum	
January	71.28	38.20	2.00
February	76.40	39.88	2.94
March	85.76	46.48	3.50
April	99.80	54.44	2.71
May	109.64	62.84	1.26
June	115.84	68.28	1.48
July	111.40	69.42	6.97
August	102.92	67.84	9.00
September	101.12	65.20	3.82
October	96.04	57.32	1.30
November	86.24	46.70	0.82
December	74.56	40.30	1.14
Average Total			36.94

(Source: GOP, 2008)

1.2.2 Toba Tek Singh District

1.2.2.1. Introduction

“This town was founded some times in the beginning of the colonization era. It was named after a Sikh saint, Tek Singh, who maintained a pond ("TOBA" in Punjabi) and used to serve drinking water to the passers-by. In 1982 Toba Tek Singh, formerly a subdivision, was separated from Faisalabad District and became a separate district” (GOP, 1998). Geographical extent of Toba Tek Singh is from 30°- 33' to 31°- 02' North latitudes and from 72°- 08' to 72°- 48' East longitudes as shown in figure 1.3. It occupies the central position in Punjab province. Total geographical area of the district is about 3252 km². The soil of the region is composed of alluvium with a mixture of loess which makes it very fertile and porous (GOP, 1998).

1.2.2.2. Administrative Units

For administrative purposes Toba Tek Singh district is divided into three sub units i.e. *tehsils* having 82 Union Councils. The municipal committees of the district are; Toba Tek Singh, Kamalia and Gojra. It has a town committee namely Pir Mehal and about 539 large and small settlements. Table 1.2 shows the detail of number of Union Councils and area of each tehsil.

Table 1.2, Toba Tek Singh District, Administrative Set up.

Name of Tehsil	No. of Union Councils	Total Area (sq.km)
Toba Tek Singh	32	1293
Kamalia	26	1115
Gojra	24	851
Total	82	3259

(Source: GOP, 1998)

1.2.2.3. Climate

Due to high evaporation and transpiration, the area has an arid type of climate. In the study area there are two extremes seasons i.e. summer and winter. In summer season maximum temperature increases upto 122 °F while in winter it remains upto 30.2 °F. Average maximum and minimum temperatures of the summer are 102 °F and 81 °F while for winter corresponding figure is 70 °F and 43 °F respectively. The hottest months of the study area are May, June and July while the coldest months are December, January and February. The average annual rainfall of the study area is about 200 mm (7.9 inches) which is unevenly distributed. Nearly half of the total annual rainfall occurs in the months of July and August due to monsoon rainfall (GOP, 1998). Table 1.3 shows the detail of mean monthly maximum and minimum and annual temperature of the region.

Table 1.3. Toba Tek Singh region , Mean monthly temperature (1948-2006)

Month	Temp. ° F	
	Maximum	Minimum
January	66.9	40.6
February	72.3	45.7
March	81.3	54.7
April	93.6	64.9
May	103.5	75.4
June	105.8	81.7
July	99.9	82.2
August	97.7	81.0
September	97.9	76.1
October	93.0	63.9
November	82.8	50.7
December	71.8	43.0
Average Annual	88.9	63.3

(Source: GOP, 1998)

1.3. RESEARCH METHODOLOGY

1.3.0. Introduction

This section explains the approach and methodology adopted to carry out present research. In order to place the subject matter in its proper sequence the study is divided into three portions. First portion is about research framework which discusses the central research question, research hypotheses, research objectives and variables used in the study. Portion two explains the sampling frame developed from the study universe. Methodology adopted for the data collection, presentation and analysis is given in third portion.

1.3.1. RESEARCH FRAMEWORK

1.3.1.1. Research Question

Procedure mentioned in 13-point agenda of high level meeting presided by the then president of Pakistan for allotment of land was very tuff and not suitable for the affected people. The dislocation of affectees has adversely affected their social and cultural fabric and values. Traditionally folks of this area used to get together and help each other en masse during the crops harvesting season, marriage and death ceremonies and funeral processions. *Hujra* system was the major local institution for preserving their customs and language integrity. Artisan's workshops (shoemakers, carpenters, blacksmith etc.) were not only the places of mending works but also these were forums of mutual discussions. The women folk owing to their common language, culture, tradition and tribal affinity used to get together on daily basis to perform the routine work such as fetching water, collection of wood, grasses and weeds, cooking on same *tandoor* etc. These were the occasions to talk to each other and share their joys and worries. As a result of dislocation these local traditions and values are almost eliminated. Affectees still feel themselves alien in new environmental set up where they were resettled. Therefore, the central research question of this study is:

Why it is so that most of the dislocated people of Tarbela Dam are not satisfied in the new geographical milieu? In order to frame the study, the following are the specific research questions. *Had the concept of future expansion been taken into account while designing the*

new resettlement townships? Had any serious attempt been made for the resettlement of the affectees in the close vicinity of their native abode to provide them more or less the same environment? Was the land allotment criterion, as mentioned in 13-point agenda (Annexure “B”), justifiable in the sense that most of the affectees were not fulfilling that criterion?

1.3.1.2. Research Hypothesis

The following are the research hypotheses of the study:

1. Land allotment and resettlement policies were not efficiently designed thus resulting in dissatisfaction of affectees on the issues of land allotment and housing.
2. There was inconsistency in the implementation of resettlement program thus adversely affecting the affected population in term of quality and possession of allotted land and value assessment of acquired property.
3. Dislocation of affectees resulted in their resettlement in new milieu away from natural abode thus negatively impacting their family linkage, socio-economic conditions and local traditional values.

1.3.1.3. Objectives of the Study

The main objectives of the study derived from the hypotheses are:

- a. To evaluate the policy adopted for value assessment of the acquired land and allotment of substitute land.
- b. To find out the provisions given (if any) for future expansion of the resettlement townships in the light of 13-point agenda.
- c. To explore the impacts of resettlement on traditional local institutions and socio-cultural values of dislocated population.
- d. To determine the impacts of dislocation on family structure and social contacts.
- e. To find out the efforts made for the resettlement of affectees in the close vicinity of their native towns in order to provide them same environment in the light of provisions given in 13-point agenda.
- f. To test the Ravenstein’s law on the basis of affectees views.

1.3.1.4. Research Variables

To bring out the impacts of resettlement on Tarbela Dam affectees the criteria of land allotment and level of satisfaction / sufferings of the affected communities are treated as the dependent variable. Independent variables include: physical resources i.e., locational characteristics and access of the different resettlement areas, land quality, socio-cultural resources i.e., socio-cultural environment, housing, population, communication, recreational resources, honour, psychological problems and economic resources i.e., living standard and employment.

1.3.2 Sampling

A multistage spatial probability/ cluster-sampling technique has been adopted to collect household's socio-economic and related data through questionnaire survey. To form a balance judgment, about the project's consequences on the affectees and to analyze the rehabilitation policy, a field survey was carried out. In order to achieve a representative sample a location selection-centred strategy was adopted.

1.3.2.1 Survey Universe

Pre-project settlement distribution in the Tarbela region is shown on figure 1.4. Most of the settlements were built on the banks of river Indus. After dislocation the affectees were dispersed in various parts of the country. However majority of them were resettled mainly in Khyber Pakhtunkhwa and Punjab provinces. So the survey universe of the study is these two provinces of Pakistan. According to the reports of Pakistan WAPDA about 22,956 households were dislocated by the project. Out of which only less than a quarter (5317) households were declared eligible for alternate land.

1.3.2.2. Sampling Frame

On the basis of displacement categories the affected population has been grouped into following three geographical strata.

- *Planned townships in the vicinity of the project (zone one)*
- *Scattered self-developed settlements (zone two)*
- *People settled on allotted lands in Punjab. (zone three)*

During the project phase the acquired area was grouped into two zones namely;

- (a) Working area (where Dam and employees colonies were constructed)
- (b) Reservoir area (Area acquired for reservoir).

There was difference in timing of land acquisition, evacuation of affectees, land allotment and rates of compensation money for these areas. So samples were taken from both areas to make their fair representation.

1.3.2.3. Stratification Plan

1.3.2.3a. Planned townships

In the study area there were five planned township namely Ghazi Hamlet, Pehur Hamlet, Khalabat Township, Darband Township and Kangra Colony. From that category first four colonies have been selected randomly for detail study. Residents of the first two settlements were mainly dislocated from the working area while of the next two form the reservoir area (figure 1.5).

1.3.2.3b. Scattered self-developed settlements

After dislocation the affectees were scattered and resettled in various part of the country. However, majority of their self developed settlements are located in Khyber Pakhtunkhwa and Punjab provinces. From this category two settlements have been selected, viz; Kiya Hund from the Khyber Pakhtunkhwa province and Utman Abad from the Punjab province. Sample settlements taken from first two categories are shown in figure 1.5.

1.3.2.3c. People settled on allotted lands in Punjab.

Land was allotted to the affectees mainly in the districts of Sargodha, Khaniwal, Jhang, Toba Tek Singh, Multan and Lohdran of Punjab province. Figure 1.6 shows the geographical position of these districts in the province. From above mentioned category Toba Tek Singh District has been selected as a sample area.

1.3.3. Sample design

1.3.3.1. Sample size

A two stage stratified sample design has been adopted for this study. In first stage primary sampling units were taken. Planned townships were comprised of various sectors. So from each colony one sector has been selected randomly as a sample. From category two (self developed settlements) two settlements namely Utmanabad from Khyber Pakhtunkhwa and Kiya Hund from Punjab province were selected for detail study. Four settlements namely GB 255, GB 256, GB 289 and GB 358 have been randomly selected for detail study from the third category (settlement on allotted lands). Relevant information about the sample settlements are given in table 1.4.

Table 1.4. Tarbela Dam Affectees, Basic information about sample household

Settlement name	Population Structure			Average H.Hold size	Literacy rate	Housing Structure			
	Both sexes	Male	Female			Total	Pacca	Semi pacca	Kacha
Khalabat town (Circle No. 04)	11301	5832	5469	6.9	58.0	1620	1423	60	137
Darband town	3413	1771	1642	6.6	32.5	461	343	00	118
Pehur Hamlet	3825	1926	1899	6.8	45.3	500	410	75	20
Ghazi Hamlet	4060	2019	2041	7.1	52.3	565	466	80	19
Kia Hund	7146	3642	3504	7.7	31.4	923	458	67	398
Sultanpur	4804	2451	2353	7.4	41.9	649	613	1	35
MAIDPUR	3565	1807	1758	5.8	67.7	613	49	265	299
PHALOR	5190	2612	2578	7.0	62.3	742	443	50	249
AMAR GARH	3841	1953	1888	6.9	58.0	522	275	103	144
ISLAMABAD	2545	1295	1250	6.6	32.5	366	86	92	188

(Source: GOP 1998)

In second stage the households were selected from each primary sampling unit. A sample size of 400 households enumerated from 10 primary sampling units has been considered sufficient to produce representative picture of the sample categories and to draw a valid inference as to the given hypotheses. Table 1.5 gives an account of the number of sample settlements and sample households selected from each category of settlements.

Table 1.5. Tarbela Dam Affectees, sample design

Sampling design		Settlement Category			Total
		Resettlement Colonies	Settled on Allotments	Self-built settlements	
No. of Sample Settlements	Count %	04 40.0%	04 40.0%	02 20.0%	10 100%
No. of Sample Households	Count %	278 69.5%	65 16.3 %	57 14.2%	400 100%

(Source: Field Survey 2009)

1.3.3.2. Sample household allocation

A total of 400 households were surveyed from the sample villages. Out of which, 83 households were surveyed from Khalabat Township, 55 from Ghazi Hamlet, 58 from Pehur Hamlet, 59 from Darband Township, 30 from Kiya Hund, 27 from Utman Abad, 18 from 255 GB, 15 from 256 GB, 12 from 289 GB and 20 from 358 GB. Khalabat Town and Ghazi Hamlet belong to Haripur District, Pehur Hamlet and Kiya Hund to Swabi District, Darband Town to Mansehra District of Khyber Pakhtunkhwa Province. Whereas Utman Abad was in Attock District while GB 255, GB 256, GB 289 and GB 358 were situated in Toba Teck Singh District of Punjab Province. Table 1.6 gives a complete detail about the names of sectors and number of households surveyed from each randomly selected community.

Table 1.6. Tarbela Dam Affectees, Detail of sample design

Name of Settlement	Sector surveyed	Household (Total)	Household (Affectees)	Household (surveyed)		Population (surveyed)
				No.	%	
Khalabat Town	Sector # 04	1620	1620	106	6.6%	759
Darband Town	Tirbat & Dokani	461	461	59	12.8%	432
Pehur Hamlet	Bara sector	500*	500*	58	11.6%	494
Ghazi Hamlet	Sobra Sector	565 *	565 *	55	10.3%	336
Kiya Hund	Pak Kiya	220	220	30	13.6%	190
Sultan pur	Utman Abad	200	200	27	13.5%	188
Maidapur	255 GB	613	18	18	100%	140
Phaloor	256 GB	742	15	15	100%	104
Amargarh	289 GB	366	18	12	66.7%	113
Islamabad	358 GB	522	42	20	47.6%	207
Total	10	5809	3659	400	9.2%	2940

(Source: Field Survey 2009)

1.3.3. RESEARCH METHODOLOGY

The study was carried out in the following sequential order:

1.3.3.1. Data Sources.

To collect the relevant data about the research topic primary and secondary sources of information were utilized. For this purpose various Government Departments such as Population Census Organization, WAPDA as well as NGOs were contacted to get the pertinent information. The study also tried to find out more important aspect, the socio-economic aspect, of the displaced persons such as income, education, change in socio-cultural fabric and impacts on their livelihood.

Primary data about cultural and socio-economic conditions before and after the displacement of the affectees was collected by field surveys through self-administered interviews. Important local and informative persons were interviewed for eliciting views and to find out ground realities in the context of the main objectives of the study. That information became base for qualitative observation on various issues under discussion.

1.3.3.2. Method of Data Collection

The socio-economic and cultural environment of the study area was assessed through questionnaire method. 400 households were surveyed from the universe of the study. The survey was conducted by using random sampling techniques, as it was not possible to reach every individual of the affected area.

1.3.3.3. Household questionnaire

For the collection of primary data two types of questionnaires (Household questionnaire and Community questionnaire) were designed. Household questionnaire was a detailed and comprehensive questionnaire consisting of 72 questions for the collection of required information in the context of the main purpose of the study. The questionnaire was divided into four sections namely; household profile, physical aspects, socio-cultural aspects and economic aspects. The household questionnaire is attached as Annex “E” at the end. Community profile questionnaire consisting of 47 questions was developed for collection of required information from each sample community (attached as Annex “F”).

1.3.3.4. Secondary data

Secondary data was collected from the offices of Population Census Organization of Pakistan, WADPA, Agriculture and other line departments. Information about the resettlement was collected from the informed persons including the officials concerned and through personal observations.

1.3.3.5. Data Analysis

Information collected through sample questionnaire survey and other sources was coded and the data was analyzed by using statistical technique SPSS-PC. Quantitative and Cartographic techniques were used for the analysis and presentation of acquired information. Computer based cartographic technique (Free hand soft ware and GIS) were used for preparation of required maps of the study area. Chi-Square tests were applied to find out statistical significance of the variables. Phi and Cramer's V tests provided information about the strength of the association between dependent and independent variables. Bivariate Correlation was applied to evaluate the strength and direction of the association between the two variables.

1.3.3.6 PLAN OF WORK AND THESIS STRUCTURE

This thesis has been divided into two sections. Section one covering the introduction to the study and conceptual framework consists of three chapters (Chapter 1-3). Chapter one is the introduction to the study and research methodology while the second chapter aims at discussing the salient features of the Tarbela Dam Project. The theoretical framework and literature review are given in chapter three. Section two covering data analysis consists of four chapters (Chapter 4-7). Chapter four to six are devoted to the presentation, discussion and interpretation of the research findings. Chapter seven gives an overview of main findings, conclusions, and suggestions. Finally, the Annex and references etc. are attached at the end.

CHAPTER 2

PROJECT DESCRIPTION

2.0. INTRODUCTION

This chapter introduces the Tarbela Dam Project and is divided into two sections. Section one describes main features of the Tarbela Dam Project including its components, construction schedule, financing and implementation. Section two discusses the planning for the resettlement of affectees including assessment, acquisition and compensation of the acquired land and various institutions involved in the resettlement and rehabilitation of affected population with a brief conclusion in the end.

2.1.0. Tarbela Project

During the British period many development projects were undertaken to inter-connect the tributaries together, which resulted in interconnections between the river systems in India and Pakistan, respectively. After independence, India unilaterally cut off supplies to Pakistan canals originating from the head-works located on the eastern rivers in April, 1948. With the help of World Bank, Indus Water Treaty (IWT) was signed in September 19, 1960 which left India in control of the eastern tributaries and Pakistan in control of the western tributaries to the Indus River. The Indus Basin Project (IBP) was the mechanism to implement provisions of IWT and comprised three storage reservoirs (Tarbela, Mangla and Cheshma); six barrages including a siphon; eight new inter-river link canals and remodeling of three existing link canals. The two main components of IBP were the major storage reservoirs on Jhelum (Mangla) and Indus (Tarbela) to mitigate the effect of diverting the three eastern rivers by India and to increase agricultural production in the IBIS.

Construction of Tarbela Dam was commenced in 1968 and all the civil works were completed in 1974. It was one of the world's greatest water resource development projects built on one of the world's largest rivers, the Indus, locally known as the "*Abbasin*" means the father of rivers. It generates about 3478 MW of hydro electricity and controls the floods in rainy seasons. The project is located in northern part of the country at a distance of about 64 km from Islamabad as shown in figure 2.1 (GOP, 1996).

2.1.1. Main Features of the Project

The Project consisted of a 2,743 meters (9,000 feet) long, 143 meters (470 feet) high earth and rock-fill embankment with two spillways on the left bank of the river and discharging into a seasonal stream, locally called as “*Dal Dara*”. Main spillway has a total discharge capacity of 650,000 cusecs while the Auxiliary spillway has 580,000 cusecs. 4 tunnels, each about 800 meters long, were built to regulate water release for irrigation and power generation. Initially these tunnels were utilized for river diversion during the dam’s construction phase. Irrigation tunnel 5, constructed on the left bank, became operational in April 1976. A power station having fourteen power units on first three tunnels was constructed on the right bank of the Indus. Out of these 14 units, ten units each with an installed generating capacity of 175 MW were installed in 1985 on first two tunnels while remaining four units, each with an installed generating capacity of 432 MW, were installed in 1994 on third tunnel (GOP, 1996).

Tarbela reservoir was about 97 km long spreading over an area of 260 Km². initially it had a gross storage capacity of 11.62 MAF (14.34 bcm) while its live storage capacity was 9.23 MAF. The total catchment area of river Indus upstream the Tarbela Dam was about 9169,600 Km². Main sources of the river are snow melt water and monsoon rains during the summer season. Main tributaries of the river Indus upstream the Tarbela Dam are: Shyok river at an elevation of 2,438 meters above sea level near Skardu, Gligit and Hunza rivers near Bunji and Siran river just north of Tarbela Dam as shown in figure 2.1.

2.1.1.1. Main Dam

The main component of Tarbela Dam project was an embankment dam having a length of about 2743 meters and a height of 143 meters. About 1528 million cubic meters volume of earth and rock was used for its construction making it was one of the largest man-made dams of the time. “The main embankment composed of an impervious core, bounded on both sides by gradually increasing sized material including coarser sands, gravels, cobbles and finally large size riprap on the outer slopes. An impervious blanket 12.8 meters thick at the dam covers 2,042 meters of the alluvial foundation on the upstream side. These deposits in the valley extend upto 213 meters depth and at places consist of open work gravels. A 7.32 metres thick filter drain mattress under the

embankment together with nearly vertical chimney drain provides the necessary facility to collect the seepage” (GOP, 1996).

2.1.1.2. Auxiliary Dams

Two auxiliary dams, same like the main embankment in structure, were built to close the gaps toward the left bank of reservoir. The smaller auxiliary dam had a vertical core which was extended down upto the bed rock while the other dam had a relatively short blanket termination cut off to the bed rock.

2.1.1.3. Spillways

Two spillways, discharging into a seasonal channel *Dal Dara*, were constructed on the left bank of the river. Basically those were flood controlling features constructed on a relatively higher site with a total discharge capacity of 1,500,000 cusecs. Another service spillway with a maximum discharge capacity of 650,000 cusecs was constructed which was sufficient to pass all the floods. It had seven radial gates operating above the crest elevation of 455 meters. The auxiliary spillway, ancillary to the service spillway, had a discharge capacity of 8, 50,000 cusecs. It comprised of nine radial gates having 455 meters crest elevation and 372 meters flip bucket elevation. To release pore water pressure in both the spillway foundations a drainage gallery having a number of drainage pipes under the canal was built.

2.1.1.4. Tunnels

The four tunnels (low level outlets) were initially built for water diversion during the final stages of project's construction. Afterward first three tunnels were being utilized to release water of the generation of electricity while fourth one to release water for irrigation purposes only. The fourth tunnel (irrigation tunnel) has a maximum discharge capacity of 92,000 cusecs (2,605 cumecs) at high reservoir level. Another irrigation tunnel (fifth tunnel) has been designed on the left bank of the river to release upto 82,000 cusecs (2,300 cumecs) water at high reservoir level.

2.1.2. Power generation

“According to the original plan, four power units of 175 MW generating capacity each were to be installed on each of the Tunnels 1,2 and 3 with the ultimate installed capacity of 2,100 MW by 1980 . Of those units, only civil works of the first four were included in the financing package of the Tarbela Dam Project. Only Tunnel 1 was commissioned in 1977. WAPDA carried out studies to tap the maximum power potential of Tarbela. As a result it became possible to install six units instead of four only on Tunnel 2. Units 5 to 8 on tunnel 2 were commissioned by 1982, and Units 9 and 10 by 1985. Four new units (11 to 14) each with installed capacity of 432 MW on Tunnel 3 were commissioned in June, 1994. The installed generation capacity was 1,750 MW by 1985 which increased to 3,478 MW by 1993” (GOP, 1996).

“Pakistan had an overall installed capacity of 15844 MW comprising: hydro (4825 MW); thermal (6995 MW about equally divided between gas-fired and oil-fired); and independent power producers (all oil-fired) 4024 MW. Out of this, Tarbela represented over 22 percent installed capacity providing 28 percent of annual generation requirements for the inter-connected national grid system of WAPDA. Based on actual generation data from 1977-98, economic power benefits of TDP have been determined on the basis of savings in generation cost per kWh as compared to most efficient gas-fired plant in WAPDA System. This exercise yields a present net worth of electric power from Tarbela (1965 prices and 8% discount rate) of \$225 mln that is 41% higher than predicted. This is equivalent to a net benefit of \$1160 mln in 1998 prices. It should be stressed that this is not the gross economic benefit, which has not been calculated, but the incremental benefit over the next cheapest option” (GOP, 2003). The province of KPK, where Tarbela Dam is located, has been receiving Rs.6 bln (\$139 mln. in 1998 prices) annual royalty from hydropower generation at Tarbela after the promulgation of the 1973 Constitution. Tarbela is providing an unexpected power benefit by contributing 20% (1353 out of 6586 GWh) of generation from the Ghazi-Barotha Hydropower Project immediately downstream of Tarbela (GOP, 2003). Salient features of Tarbela Dam project are given in table 2.1.

Table 2.1 Tarbela Dam Affectees, Salient Features of the project

Reservoir		Total Length	97 km (60 miles)
		Total Area	260 km ² (100 sq. miles)
		Gross Storage Capacity	14.3 b.cm (11.6 MAF)
		Usable Storage Capacity	11.5 b.cm (9.3 MAF)
Main Dam		Height (maximum)	148 m (485 ft)
		Impervious blanket length	
		Original Modified	2025 m (6640 ft) 1524 m (4999 ft)
Auxiliary Dam 1		Height (maximum)	105 m (345 ft)
Auxiliary Dam 2		Height (maximum)	67 m (220 ft)
Service Spillway		Discharge capacity	18,386cms (650,000 cfs)
Auxiliary Spillway		Discharge capacity	24,070cms (850,000 cfs)
Tunnels		Diameter	13.72m (45 ft)
		Capacity at E1457.3m (1500 ft)	
		Tunnel 4 Tunnel 5	2605cms (92,000 cfs) 2494cms (81,000 cfs)
Power House		Planned	Actual
Power Units	Tunnel 1	4 x 175=700 MW (1975)	4 x 175= 700 MW (1977-78)
	Tunnel 2	4 x 175=700 MW (1978)	6 x 175= 1050 MW (1982-85)
	Tunnel 3	4 x 175=700 MW (1980)	4 x 432= 1728 MW (1992-93)
Total Installed capacity		=2100 MW	= 3478 MW

(Source: GOP, 1996)

2.1.3. Construction Sequence

It was one of the world's largest single contract, signed on May 14, 1968, for the construction of the Tarbela Dam Project at a price of Rs. 2.96 billion (US\$ 623 million). Initially it was signed by the WAPDA and the Tarbela Joint Venture (TJV), a group of construction companies comprising three Italian and three French heavy contractors. Later on it became a consortium of thirteen European firms after the induction of five German and two Swiss contractors. The Tarbela Dam project was constructed in three stages. In first stage the river Indus was allowed to flow in its original channel while work was

started on right bank where a 3,960 meters long, 212 meters wide and 18 meters deep diversion channel was excavated and a 32 meters high concrete buttress dam was built. It had a maximum discharge capacity of 750,000 cusecs of water. In second stage (lasting three years), important features such as the main embankment dam and the upstream blanket were constructed. For diversion of water tunnels were also built.

In third stage the work was started on the closure of diversion channel and construction of other structures and diversion tunnels were used for the flow of river water. The remaining construction work of upstream blanket and the main dam at higher levels was completed and the construction of spillway was carried out from October 1970 to August 1974.

2.1.4. Financing

The project was financed through Tarbela Development Fund (TDF) created in 1968. The rupee costs were met by the Government of Pakistan out of its own resources, the foreign exchange requirements of the project (with the exception of Tunnel 5 construction and power house equipment cost) were covered through TDF which comprised the balance amounts of grant/ loans available from the Indus Basin Development Fund and new bilateral loan agreements signed with several countries including Australia, Canada, France, Italy, Germany, New Zealand, the United Kingdom, and the United States of America, besides the International Bank for Reconstruction and Development (WB, 2001). The resources of TDF were further augmented by entering into loan agreements with Middle Eastern countries namely Saudi Arabia, Kuwait and Abu Dhabi. Asian Development Bank, Canadian International Development Agency (CIDA), Oil Producing and Exporting Countries (OPEC) and Germany had provided funds for power house units 5 to 14.

2.1.5. Implementation and Commissioning

Designing and construction of Tarbela dam was a challenge for engineers due to complex geological conditions. During the initial test filling in 1974, one of the three intake gates of a diversion tunnel jammed while being lowered to achieve closure that resulted in collapse of the intake structure of tunnel 2 endangering the safety of the dam. The reservoir was

evacuated in emergency and after quick repairs, the problems were resolved and the dam was fully commissioned in 1976. The project was commenced in May 1968 almost one year later than planned. The original time for construction and commissioning of the dam and reservoir was 7.25 years. But due to special repairs and restoration, implementation period extended one year more (8.3 years). The planned schedule for full commissioning of reservoir was September 1974. However, partial storage releases started in winter 1975 while first complete reservoir filling was done in September 1976. The first four power units started power generation in 1977 nearly two years later than scheduled time. The operation of the reservoir was conducted on an *ad-hoc* basis by 1993 due to lack of a formal agreement between the provinces on sharing Indus waters. For water allocation between provinces a formal accord was signed in 1991 and the Indus River System Authority (IRSA) was established in 1993 for the distribution of water. It comprised of representatives of all the four provinces and one from federal government. It is headed by one of them on annual rotational basis. IRSA regulates and controls the flow of water from the storage reservoirs of Mangla and Tarbela.

2.1.6. Instrumentation

The Tarbela Dam was one of the most instrumented dams in the world making use of the most modern available technology. Arrangements have been made to monitor the seepage from different parts of the projects. It was constantly measured and studied at the downstream toe of the dam and through a system of drainage audits in the right and left abutments and under the spillways to keep a close watch on the underground flow pattern. 700 piezometers were installed to monitor the pore pressure conditions in the foundation fill zones and abutments. Another 2,000 instruments including inclinometers, strainmeters, thermometers and accelerographs were installed to observe and study the behavior of the structures. Regular readings of these interments furnished information on the performance of structures and their foundations.

2.1.7. Sedimentation

The Indus was one of the largest sediment producing rivers in the world. The main reason for huge sediments was the steep sided barren lands and glacial topography of catchment

area causing heavy erosion. According to estimates per annum rate of sediment inflow in the reservoir was 0.294 bcm. It means that in first 50 years the dam would silt up to 90 % of its capacity and after that its live storage capacity would be only about 1.2 bcm.

“A number of sediment management measures were examined at the time but considered not to be feasible. In practice, the actual sediment inflow rate has been significantly lower than predicted, with an average rate of 0.106 bcm, 36% of predicted. However the proportion of sediment inflow trapped in the reservoir (the trap efficiency) was slightly higher than predicted. The useful life of the dam is now considered to be 85 years, although, as with the prediction, the usable storage will gradually decline over this period. An unexpected aspect of the sediment deposition however is the advancement of the sediment delta which is now located 14km from the dam. There are concerns that under earthquake loading the sediment may liquefy and block all low level outlets including power intakes” (WCD, 2001).

2.1.8. Initial Problems

Several construction problems were encountered due to unusual geological conditions of the project area which was beyond the known horizon of engineering profession. Some of them are discussed below

- During the first filling of the reservoir in 1974 and the operation of the intake gates of diversion first two tunnels, central intake gate of Tunnel 2 got stuck. As a result Tunnel 2 was collapsed which damaged the outlet chutes and stilling basins of Tunnel 1 and 4. The damaged part of Tunnel 2 was built and repaired.
- Due to the first filling of the reservoir hundreds of sinkholes and cracks were developed in the impervious blanket of the river bed
- Increased seepage through the foundation and abutment of dam also seemed alarming.
- Excessive erosion in the spillway plunge pool caused by the high velocity jet made embayment that outflanked the Service Spillway Flip Bucket.
- Other long-term adverse problems are to control of erosion when the advancing sediment delta approaches the dam and under earthquake shaking possible liquefaction of the delta material.

2.1.9. Remedial Actions

All above mentioned problems, except for the long-term sedimentation aspects have been solved successfully by using some innovative techniques.

- Sonar Surveys were carried out to perceive the presence of any new sinkholes in the lake's bottom about 137 meters below the water level. A fleet of bottom dump barges was arranged for dumping soil to plug the sinkholes. The system performed effectively and all underwater sinkholes were properly repaired.
- Stilling basin of Tunnel 4 was damaged due to increased energy carried by the water from its which was controlled by the construction of flip bucket structure.
- The rock in the plunge pools of both the spillways was strengthened by using post-tensioned anchors and massive roll concrete walls. The roller compacted concrete used for the project paved the way for use of this method of rapid construction on several new dams all over the world.
- The fibrous concrete which involves the addition of small needle like steel fibers in the concrete was used extensively and successfully to counter cavities formation due to extremely high velocity flows.
- Injection of large quantities of air into fast flowing water has also been carried out to control cavitation in concrete.
- Several epoxies were tried for emergency repair of concrete and enormous experiences were gained in the matter of selection of the most optimum materials.
- In order to control seepage through the alluvial foundation of the dam, additional relief wells had to be installed. Seepage control through the abutments was obtained by the use of extensive additional grouting and provision of drainage curtains to supplement the work that had been earlier carried as part of the original design.

2.1.10. Reservoir Operation Criteria

Tarbela dam is a multi-purpose project, mainly constructed to store water for irrigation purposes and to generate electricity. According to the requirements of Indus Basin Irrigation System, the reservoir operation criterion is made to cope with irrigation demands. So in reservoir operation priority is given to irrigation releases over power generation. To develop the reservoir operation criteria, based on the irrigation demands and available

storage capacities, various operation studies were conducted. First of all this procedure was adopted for the commissioning of Mangla reservoir in 1968.

“For Tarbela, the rules were contained in the special report by project consultants (TAMS 1974) entitled “Procedures for first filling of the Reservoir in summer 1974”. The first filling of Tarbela reservoir started on schedule in July 1974. The reservoir operation rules under strategies of usable capacity above lowest elevation of 396m and between 427 and 457m were tested during 1976-77. Later on Tarbela was integrated into IBIS and its operation criteria along with Mangla were prepared by the operating agency of WAPDA for filling and drawdown seasons. This furnished a guide for actual subsequent operations” (WCD, 2001).

2.2. PLANNING FOR RESETTLEMENT

Resettlement, which is the main focus of the research, is explained in this section which covers the organizational structure established and various measures taken for the resettlement and rehabilitation of Tarbela Dam affectees.

2.3.1. Resettlement

During the planning phase it was expected that the project will affect about 100 settlements causing dislocation of 80, 000 population. But actual number of affected settlements increased to 135 (120 completely and 15 partially) and the figure of affected population was about 96000, an increase of 20%. Land was acquired under the Land Acquisition Act of 1894, while the land compensation criteria were set in 1967. Compensation with land allotment was for land owners having more than 0.2 ha of irrigated land or 0.8 ha of non-irrigated land. Nearly one fourth of the affectees was declared eligible for alternate land in Punjab or Sindh provinces. Affectees having land less than eligibility criteria were granted cash compensation. House owners were paid cash compensation at 1968 market values. They were allotted residential and commercial plots in resettlement townships.

2.3.2. Tarbela Dam Resettlement Organization

Tarbela Dam Resettlement Organization (T.D.R.O), which was proposed on 3rd May 1967 in a high level meeting, was established with effect from 1st July, 1967, headed by a Project Director. The Organization carried out the entrusted duties up to 30th June 1985 in the following manner.

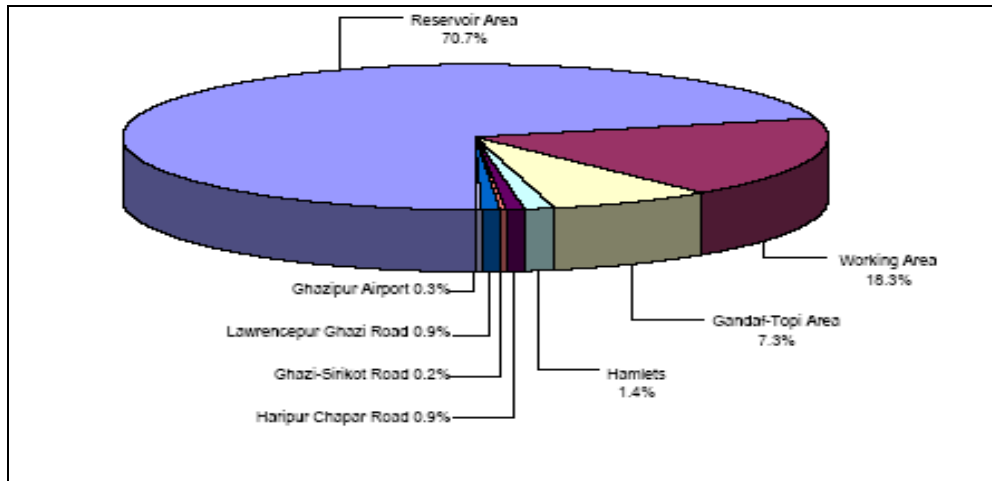
2.3.2.1. Assessment and Land acquisition

The immediate task before the newly established organization was to arrange and acquire, pay for and clear about 15000 acres of land for working area, to be handed over to the project contractors, Tarbela Joint Venture. This important task was completed by 1967. WAPDA employed its own Revenue and Engineering staff to assess value of land and property. Land Acquisition Collectors were borrowed on deputation from the provincial Government for acquisition of land. Due to the project 82,059 acres of land, 22,956 households, 1230 wells, 827 water mills (*Janders*) and 31, 77,204 trees/bushes affected in the working and reservoir area were acquired in a 10 years period from 1967 to 1977. A total of 236 awards were announced by the Collectors in the settled area, and two negotiated awards were declared by the Commissioners of Hazara and Malakand for Tribal areas. Moreover, 44 awards were announced by the Land Acquisition Collectors for acquisition of land affected under Haripur–Chappar road and Kriplian–Bhamba link road in Haripur district. The break- down of the land acquired Tarbela Dam project is given in table 2.3 and figure 2.2

2.3.2.2. Engineering

The Engineering Section prepared detailed estimates of built up properties for determination of the compensation in the entire affected area of the project. It conducted out the surveying, planning and execution of facilities to be provided for five hamlets/townships. It also carried out the construction of residential and non-residential accommodation for the organization itself.

Figure 2.2 Land utilization for Tarbela Dam Project



(Source: GOP, 1996)

Table 2.2 Land acquired for Tarbela dam

S.No.	Utilization	Area (in hectare)
1	Reservoir Area	22579
2	Working Area	6069
3	Gandaf-Topi Area	2419
4	Hamlets	492
5	Haripur-Chaptar Road	288
6	Ghazi-Sirikot Road	55
7	Lawrencepur-Ghazi Road	310
8	Qazipur Airport	117
Total Land Acquired		33221

(Source: GOP 2009)

2.3.2.3. Resettlement/Rehabilitation of the Affectees

Eligible families were resettled by providing alternate lands of 12.5 Acres in the colony areas of Punjab and 16 Acres in the Barrage area of Sindh. Punjab Province has provided 30,000 Acres of land where 2,400 families have been settled there, whereas the Sindh has accommodated only 667 families over 10,667 Acres of land. Remaining 1301 eligible families were still waiting for allotment of the balance 19,333 Acres of land yet to be allocated by the Sindh Government. For the people not eligible for allotment of the alternate lands (nearly three fourth of the total population) resettlement was made available by constructing five Townships/ Hamlets and thus providing 12,000 residential and 1,500 commercial plots to the affectees on option.

Table 2.3 Number of Affected Villages and affectees settled in five Town/Hamlets

Name of Town / Hamlet	No. of Villages	Population
Ghazi	04	3300
Khalabat	84	33300
Kangra Colony		2580
Pehur	04	2400
New Darband	04	1800
Hamlets spread over Chappar road, Haripur-Darband Road, Swabi and Rafiqabad	30	30000
Migrated to other towns like Fatehjang, Rawalpindi, Lahore, T.T. Singh etc.		23080
Total:	130	96000

(Source: GOP 2009)

It was anticipated that out of affected population about 60% would be ineligible for allotment of alternative land, being land-less or small landholders. For resettlement of such people five Hamlets/Townships were developed along the periphery of Tarbela reservoir. Developed plots were sold to the displaced persons desirous to construct their new houses according to their own means and choice. Basic amenities, such as water supply, power supply and drainage system, were also provided. The charge of all the hamlets/townships had long since been handed over to the Provincial Government of KPK after completion of allotment of plots work. The position of allotment of plots in these hamlets/ townships is as under in table 2.4.

Table 2.4. Number of Affected Villages Settled in the Five Hamlets

S. No	Name of Hamlet/ Townships	Land acquired (Acres)	Residential Plots	Commercial Plots	Total
1	Khalabat T/Ship	733	7234	879	8113
2	Kangra Colony	162	2043	72	2115
3	a. New Darband	72	1226	492	1718
	b. Ext Darband	15	311	130	441
4	Pehur Hamlet	151	492	-	492
5	Ghazi Hamlet	83	600	-	600
	Total	1216	11906	1573	13479

(Source: GOP, 2009)

2.3.2.4. Payment of Compensation

In the settled area the compensation for the affected properties, determined and announced through various awards, was made to the concerned land owners by the Land Acquisition Collector. On the other hand, the compensation amount for tribal area has been disbursed by the political authorities of Hazara /Malakand Divisions in accordance with the custom prevailing in the area.

Some affectees did not contact the land acquisition collector for receiving their compensation amounts. Therefore, the undisbursed amount of Rs. 4,912 million was deposited by the LAC in Govt. Treasury at Haripur district and the affectees were informed through press advertisement to receive their amount through refund vouchers. Similarly an amount of Rs. 8.246 million was lying pending with NCC for payment to the affectees involved in various court cases. It is pertinent to point out here that only court enhanced amounts, if any, are to be paid on finalization of present court cases as the awarded compensation has also been received by applicants. The following amount has been disbursed among the affectees.

Original awarded payment	=	Rs.	423,317,815
Court enhanced payment	=	Rs.	290,932,208
Ex-gretia	=	<u>Rs.</u>	<u>17,327,229</u>
Sub Total:	=	Rs.	731,577,252
Awarded payment based on negotiations	=	<u>Rs.</u>	<u>61,017,585</u>
Grant Total:	=	Rs.	792,594,837

2.3.2.4. Evacuation

Evacuation of the affected population was very sensitive and difficult task. Due to natural dis-inclination of the people to leave their ancestral lands and face unknown and uncertain future, the work could not be carried out under some reasonable schedule. To facilitate early evacuation certain concessions had to be made by the Government, such as:-

- Despite legal awards of compensation and its payment, ex-gratia payments were made for all the houses with Rs. 5000 as minimum compensation.

- Affectees were allowed to lift material of acquisition houses and to cut trees, free of cost, in addition to receive due compensation.
- Free transportation was provided for the removal of said material along with other household items to their new site of resettlements.
- Bulk of the evacuation work was carried out with the assistance of Pakistan Army on emergency basis when the reservoir started filling in 1974. In all about 79,180 persons were evacuated by the department while 16,011 were shifted by their own.

2.3.2.5. Legal

Not satisfied with the Awards, announced by the Land Acquisition Collector, the affectees moved their Objection Petitions into the courts of Additional District Judge of the area. Thus a total of 3,429 acquisition cases were filed by the affectees, out of which 3,293 cases were disposed off by June 30, 1985. Out of 136 pending court cases, so far 110 cases have been decided from various courts. 33 court cases, including seven fresh references of damages, were still pending for decision in different courts.

2.3.2.6. Project Cost

The original cost of the PC-1 of TDRO was Rs: 415.600 million and the total expenditures incurred by 30th June, 1985 amounted to Rs: 913.907 million covered under the ex-post facto approval of the 2nd revised PC-I for Rs: 997.655 million, accorded by the ECNEC. The major reasons for revision of the PC-I apart from the price hike of labour and material, were the court decisions for enhanced rates and re-classification of lands, ex-gratia grant on houses, modification in the facilities of Hamlets/Townships and other Administration and Establishment charges of the Organization.

2.3.3. Nucleus Clearance Cell

While considering the 2nd revised PC-I, the Government decided to wind-up the TDRO with effect from 30th June, 1985 and to establish a new setup for clearance of the outstanding liabilities of the TDRO. Vide cabinet Section Letter No. ECNEC-3/M/1985, dated 19th September, 1985 a new set-up in the name of Nucleus Clearance Cell (NCC) was established on July 1, 1985.

2.3.3.1. Scope/Duties of Nucleus Clearance Cell (outstanding liabilities)

Main liabilities of the NCC were;

- Disbursement of payment according to approved PC-I as shown in table 2.5.
- To defend the legal/revenue matters in the acquisition cases and several execution/FIA cases pending in the various courts.
- Resettlement of the Balance eligible families (1301) by arranging procurement of the balance 19,333 acres alternate land, yet to be allocated by the Sindh Government, and allotment of plots in the New Darband Township (extension) to the affectees of Kala Dhaka (Tribal Area).
- Assessment /Acquisition of balance land and built up properties of Haripur–Chappar road and Kriplian–Bhamba link road project (Replacement works).
- Return of surplus lands (3,428 Acres out of the total Borrow land measuring 5,980 acres) in the Gandaf –Topi area and leasing out of WAPDA acquired land (20, 00 Acres) in the free board /draw down area of the Reservoir.

Table 2.5. Disbursement of payment by NCC

Description	Amount (Rs.million)
Balance payment of compensation (Awarded /court enhance)	48.260
Ex-gratia grant on houses	1.000
Construction of Hamlets /Townships	0.881
Resettlement and evacuation etc	10.500
Construction & un-foreseen @ 5%	2.381
Total	63.002
Credits from sale of surplus land in Borrow Area (-)	-2.575
Net Gross Total	60.447

(Source: GOP, 2009)

2.3.3.2. Existing Constraints in Implementation

The main hurdles in the accomplishment of the assigned duties of the NCC were;

- The abnormal delay in the finalization of the court cases and that was on account of the complex nature of acquisition and slow proceedings in the courts of law.

- In order to resettle the eligible affectees, it was decided in High Level Meeting on 3rd May, 1967 that 30,000 acres land each would be allocated to affectees in the provinces of Punjab and Sindh. Punjab has provided all promised land but form Sindh 19,333 acres of land is still awaited for the resettlement of eligible affectees. As a result of the above mentioned constraints, the time limit of the approved PC-1, which was from 1st July, 1985 to 30th June, 1988, was extended upto one year. Another request has been made for extension upto 30th June, 1991. Such over run in time limit is inevitable on account of the position explained under the circumstances.

2.3.4 Summary and Conclusion

The affectees faced various problems due to deficient compensation and defective resettlement policy prepared for them. A survey carried out by the Govt. in 1996 showed that 1953 eligible families who applied for alternate land still waiting for allotted land. Land allotment criteria were challenged by affectees and a number of suits were filed in the courts of law. The Nucleus Clearance Cell (NCC) was established to clear the pending claims of Tarbela Dam Project. Later on, due to a financing conditionality of the Ghazi-Barotha project, a Commission was formed under the NCC to resolve the pending claims. 11,000 claims were submitted before the Commission, out of which only 4.4% were considered legitimate. Majority of the claims were rejected due to problems of verification from the Revenue Department. The population affected by the project but not eligible for compensation was not quantified. Affectees were not systematically associated with the planning and development process. They demand that a fair amount from the income of the dam should be allocated for development of the affected communities. Moreover, the gender aspect has been ignored in the resettlement process and women have suffered a lot due to dislocation from ancestral places.

CHAPTER 3

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

3.0. Introduction

This chapter gives an overview of the theoretical framework and the literature related to the research topic. It is divided into two sections. First section contains theoretical material and discusses the definition and methodology of Evaluation Research, legislation, institutional framework and national experiences regarding resettlement of dam-affected population. Section two is about the review of the relevant literature and consists of national and international experiences regarding resettlement of displaced persons due to water resources development projects.

3.1 THEORETICAL FRAMEWORK

3.1.1. Definitions

Displaced person: A person is considered displaced who, due to acquisition of land for water resource development project, has been displaced from such lands, including any landless and homeless person, who is depended for his livelihood on agricultural lands immediately before the area acquired by the project and who is being deprived of such livelihood on account of land acquisition (Dalua, 1993).

Involuntary means any task which is performed without the informed consent or free will of the concerned persons (World Bank, 2001).

Minor impacts: Impacts are minor where the affectees are not physically displaced and only less than 10% of their productive assets are lost (World Bank, 2002).

Ex post evaluations: these are studies carried out to assess the impacts of completed water resource development projects on the people, environments and landscapes that are affected. These studies are important to determine the lessons learned from large dam projects which must be considered for future decisions about new dam building. It includes evaluation of physical, environmental, economic, institutional, and socio-cultural impacts caused by a project. It also highlights water regulations and dealing out important differences between the results drawn previously in various part of the world (Scudder and Habbob, 2008).

Development-induced displacement and resettlement (DIDR): It is a forced type of migration which refers to the situation whereby people have to move due to infrastructure development projects (de Wet, 2003).

Directly and Indirectly Affected People: People affected by dams include not only those displaced but also those whose livelihoods are diminished as a result of changes to their communities and environments directly or indirectly. Indirect affectees include:

- People in dam area who are not displaced but whose properties and various modes of income have adversely affected by the project.
- Host communities whose have lost a lot regarding resources, space, and autonomy.
- Communities residing downstream of the project, who use flood water for irrigation are in danger by the construction of the dam.
- Low income class and other service groups whose livelihood has vanished as a result of dislocation.
- Population who rely on public means for their livelihood such as farmers, fisher men, cattle-rearers, foresters and occupants of common lands. (UNEP-DDP, 2004).

Scudder (2008) used four-stage theoretical framework supported by a statistical analysis of outcomes from over 50 case studies of dam-induced involuntary resettlement throughout the world. It shows how many of these new people can be known how to behave during the four stages that need to be completed over a two generation period to achieve an outcome that at least restores livelihood. To achieve relatively successful resettlement these stages are as under.

Stage I. Planning for resettlement of the affected population prior to physical removal;

Stage II. Physical removal of affectees and meeting with the demands of the initial decrease in their mode of income as a result of removal;

Stage III. Beginning of economic progress and community formation programs to make better the mode of living of first resettlers;

Stage IV. Giving a permanent resettlement program to the second generation as well as to the ordinary institutions

These case studies show that resettlement process failed mainly due to lack of political will, funding, public participation and inadequate staff capacity and expertise on the part of project authority. World Bank Group guidelines (and those of OECD countries, and China which have opted and adapted them) emphasize the economic and social aspects of development but ignore cultural aspects (Scudder and Habbob, 2008).

Every year about ten million people are displaced due to the construction of dams, irrigation schemes, urban renewal and housing schemes, water or transport supply systems and open cast mining. DIDR has had negatively impacted economic, health, psychological and social conditions of the displaced persons. As a result widespread resistance evoked and it became a highly contentious and politicized issue. During the last few years policy guidelines have seen developed by international bodies such as the World Bank, the OECD and some countries, resulting in positive outcomes in some cases. Lessons learnt from previous mistakes could made positive outcome in future (de Wet, 2003).

A large number of scientific and ex post evaluation literatures regarding the affects of dams are available. However, comprehensive evaluations judging of completed projects are very few in number, which are narrow in scope, poorly integrated amongst impact classes and scales and not properly connected with dam operations decisions (James Wescoat, 2003).

In Pakistan resettlement action plans of the dams like Tarbela, Mangla, Khan Pur, Rawal, and Chotiari were developed under the provisions of Land Acquisition Act 1894, which became law more than a century earlier. Therefore, as in the case of Ghazi Barotha Hydropower Project, World Bank imposed conditions for compliance with its own operational policies (UNEP-DDP, 2004).

3.1.2. POLICIES ON INVOLUNTARY RESETTLEMENT

Kader (2000) stated that a quarter of the countries rely on hydropower for a major part of their electricity supply needs where large dams produce 19% of the total electricity. Half of the world's large dams were constructed purely for irrigation purposes irrigating 30-40% of the irrigated land. Water and energy needs are basically met by dams.

In many cases the displaced persons were not declared affectees, so they were not compensated and rehabilitated. In cases where physically displaced were enumerated, many

of them were left out. Compensation provided was often inadequate, so affectees were unable to restore their livelihoods. Resettlement programs have concentrated their attention mainly on physical relocation ignoring their socio- economic development. The larger the dispersion of affectees the more it will be difficult to restore their source of income. Displacement has negatively impacted the livelihood, culture and spiritual values of indigenous people and vulnerable ethnic minorities. Affectees residing near the reservoirs as well as downstream communities have often faced adverse impacts on their health and livelihood due to environmental change and social disruption. Gender gaps have widened between them and women folk have borne a disproportionate share of the social costs. Even in 1990s, impacts on downstream communities were not properly addressed in the planning and designing of the large dams. Policies adopted on the issue of involuntary resettlement by different countries and agencies are given in following paragraphs.

3.1.2.1. Policy Objectives of the World Bank

World Bank policy objectives on involuntary resettlement are as under:

- (a) Where possible involuntary resettlement should be avoided or even minimized by exploring all viable alternative options.
- (b) If not feasible to avoid resettlement, sustainable development programs should be executed, providing sufficient investment resources to enable the affectees to share in project benefits. Affectees should be properly consulted and be involved in whole process.
- (c) Affectees should be facilitated to improve their means of income and standards of living to achieve at least pre-project income levels.
- (d) Affectees and the host communities should be provided timely and relevant information, offered opportunities to participate in planning, implementing, and monitoring phases.
- (e) In affectees towns, infrastructure and basic amenities should be provided and maintained. Alternative resources should be provided to compensate for the loss of access to community resources such as fishing, grazing, fuel and fodder etc.
- (f) Patterns of community organization, suitable to the new circumstances, should be based on choices of displaced persons. The existing socio-cultural institutions of affectees and

host communities should be preserved and resettlers should be given preference regarding relocation in preexisting communities (World Bank, 2001).

Measures required for best resettlement are as under:

- (a) The resettlement policy framework includes measures to ensure that the affectees have sufficient information about their rights and choices regarding to resettlement. They are properly consulted, given resettlement alternatives, and provided adequate compensation of their properties.
- (b) In case of physical relocation, the resettlement plan includes measures to ensure that the displaced persons are provided assistance during relocation and provided with housing and agricultural sites.
- (c) To fulfill the aim of the resettlement policy, the following measures have to be ensured; support for a period of time till they have decent means of generating an income, provide aid in addition to land compensation such as land preparation, credit facilities, training, or job opportunities.

Payment of cash compensation for lost assets may be appropriate where

- (a) Land acquired for the project is meager part of the affected property and what left is economically viable;
- (b) Opportunities for land, lodging do exist, affectees can use such markets where there is a sufficient supply or; or
- (c) Source of income is not land based, cash should be enough to replace the last assets at par with a local market

Eligibility Criteria: Affectees may be classified in one of the following groups:

(i) Those who have rights to affected land as stated in the law of country. (ii) Those who have on legal rights to land but have a claim to such a land which are recognized in the laws of the country. (iii) Those who have no legal rights or claim. Affectees covered under first two categories are eligible for compensation and other assistance. Persons covered under category (iii) are provided resettlement assistance in lieu of compensation for the land they occupy. Facilities for affectees include alternate land, construction of houses, employment opportunities and cash payment in lieu of land.

“The World Commission on Dams (WCD), an independent, multi-stakeholder process sponsored by the World Bank and IUCN, was established to review the development effectiveness of large dams and assess alternatives; develop a framework for assessing options and decision-making processes for water and energy services; and develop internationally acceptable criteria and guidelines for planning, designing, construction, operation, monitoring, and decommissioning of dams. In November 2000, WCD Commissioners released their final report, Dams and Development: A New Framework for Decision-Making” (Imhof, 2005; Lawrence, 2005).

3.1.2.2. Orissa Rehabilitation Policy

As a result of experiences in Hirkud and Balimela project, a cogent policy of resettlement and rehabilitation was framed for the affectees of Rengali dam project in 1973 by the Orissa government. It has also been made applicable to all the major and medium projects in the state. The salient features of the policy were (a) allotment of lands in government sponsored colonies to the oustees free of cost irrespective of the fact whether the oustee was a landowner or not (b) displaced persons desirous to make their own rehabilitation arrangements in lieu of land were given cash grant, equivalent to the cost of the acquired land. Important features of the policy were the eligibility of affectees belonging to fully submerged villages as well as partially submerged villages.

3.1.2.2. Asian Development Bank’s Policy

The Asian Development Bank’s (ADB) Involuntary Resettlement Policy (1995) wants that all projects should be planned and executed on the following principles:

- (i) Where feasible involuntary resettlement should be avoid.
- (ii) Where population displacement is unavoidable minimize the resettlement.
- (iii) Assistance to the affectees should be ensured under the project so that they would be equally well off as in the absence of the project (Asian Development Bank, 2007).

Outstanding social issues of existing dams may be viewed through many aspects such as geographical environment, legal entitlements and gender cultures. A comprehensive approach is required to address unsolved social issues emerging from dam construction and to compensate the adversely affected groups. People adversely affected by dams have been

forced to sacrifice land and livelihood for the sake of the greater public interest. To compensate people for damages caused by the construction and operation of dams is very challenging task requiring the identification of such people and the political will to devote the financial and human resources necessary to improve their conditions. So the most vociferous opposition to new dams stems from what is perceived as inadequate reparations for communities that were affected by dams. People who stand to be displaced or have the basis for their livelihoods substantially altered by new projects take perceived injustices of the past as indications that they will also face injustices in future. Therefore, it is important to salve the wounds of the past in countries where new dams are viewed as a key to development. (UNEP-DDP, 2004)

3.1.2.3. China's Resettlement Policy

In China policies made for the resettlement of displaced persons have witnessed various stages due to changing policies and approaches of different Governments. The 1952 resettlement regulations if implemented would have resulted in successful resettlement for some large projects like the *Sanmenxia*, *Danjiangkou*, *Dongpinghu* and *Xinanjia*. Unfortunately, implementing authorities discarded these regulations during the Great Leap Forward and Cultural Revolution of 1958 and 1967.

3.1.2.4. Pakistan's National Resettlement Policy

Pakistan entered into the dam building era in the early 1960s and a number of large and small dams were planned under the Indus Basin Irrigation System (IBIS). The first drafts of the involuntary resettlement policy and act were brought on the discussion table in the mid 1990s. The draft policy and act were prepared in 2002. Since then it is lying pending with the Federal Ministry of Environment for further processing and approval of the various government institutions and finally the parliament. Interesting aspect of that policy draft is that it does not talk about the reparation or addressing the unresolved social issues of the existing dams.

3.1.3. History of Dams Development and Resettlement

Large reservoir dams have disrupted the life of million of people, especially those groups who have limited political and social eminence in society. The popular concepts like human rights, social justice and social inclusion could not get due importance in the mainstream development discourse. During the last decade about 90 to 100 million persons were involuntarily displaced and resettled as a result of infrastructure development projects. (UNEP-DDP, 2004)

Large dams have displaced about 40 to 80 millions people through the world. In a period from 1986 to 1993 on average 300 large dams were constructed per annum dislocating about four million people annually. Out of 45000 worldwide dams, in India there were 4000 dams causing displacement of about 16 to 38 million people (about 9% dams have caused 40 to 48% of displacement in the world). From 1949 more than 5000 large reservoir dams have been built throughout the world, out of those 75 % were constructed in industrialized states. Before the start of 21th Century, the counting of large dams reached upto 45,000 in 140 countries of the world. Construction of dams was at its peak between 1970 and 1975 when roundabout 5000 large dams were constructed in different countries of the world. In China alone about 22000 large dams (nearly half the world's total dams) were built which had only 22 large dams before 1949. The top five dam buildings nations were; USA with 6390 dams; India with 4000 and above; Spain and Japan with a range of 1000 and 1200 large dam each with an average displacement of 900 to 1800 per dam (UNEP, 2000).

“Japan is one of the most heavily dammed countries in the world. Over 3000 dams have been built across the country, and there are virtually no rivers which have not been dammed. Another 350 dams are planned or under construction” (IRN, 2003; FOE, 2003).

3.1.3.1. China

China has built over 86,000 new reservoir dams from 1950 to 1990, including 300 large reservoirs. Between 1951 and 1982, average annual dam construction was 523 dams, which decreased to 150 dams per year in the early 1990s (about half of the world-wide dams each year). As a result over 10 million people were resettled in China in about 40 years. The largest complete resettlement was for *Danjiangkou* hydropower project constructed on the

Yangtze River where 383,000 affectees were resettled. Since 1950, relocation of more than 30 million people has been caused by major capital developments projects in addition to water resource development projects.

3.1.3.2. USSR and Central Asian States

Malik et al (2000) stated that in world's stream flow, Russia's share was about 4 000 km³ (equal to 10% of the world). In the Russia and other NIS important dams were hydropower and multipurpose dams. In 1998 the International Committee on Large Dams included 205 large dams in the World Register of Large Dams. Its detail is shown in table 3.1.

Table 3.1. Large Dams in USSR and Central Asian States

Name of Country	No. of Dams (Above 15 m)	Information given in briefing paper
Russian Federation	91	Mostly register hydropower dams. Additional 2000 reservoirs/
Armenia	16	all operational
Azerbaijan	17	all operational
Belarus	0	No large dam
Georgia	14	21 large dams
Kazakhstan	12	Only 9 in operation
Kyrgyzstan	11	13 large dams
Moldova	2	--
Tadjikistan	7	17 large dams in operation
Turkmenistan	0	15 reservoirs more than 1 sq. km
Ukraine	21	Only 9 in operation
Uzbekistan	14	21 including those above 10m
Total	205	

(Source: Malik et al, 2000).

Having a major influence on dam construction programs Russia assisted many other countries of the world in techniques and development assistance. For instance it assisted China in the 1950s and 1960s where there are the world's largest dams. A lot of reservoir and large dam have been built and operated and Russia, out of which 105 has hundred million Cubic meter capacity. In central Asia there are 60 reservoirs with a capacity of ten million Cubic meters. In Russia during this period of dam building above 832000 people

were affected and resettled. Some compensation was given but in most cases that was insufficient (Malik et al, 2000).

3.1.3.3. India

India was among the leading dam-building countries of the world where 4,300 projects were in operation and many more were either in planning or construction phase. According to estimates, about 37,500 km² of land have been submerged and millions of people have been displaced due to large reservoir dams in India. Due to adverse impacts and inequitable resettlement efforts, majority of the Indian population was against these dams. Under the flag of the Narmada Bachao Andolan (Save the Narmada Movement), people were opposing the major Narmada Valley Development Project, which consists of a chain of dams and an extensive irrigation system that will affect millions of people.

3.1.3.4. Sri Lanka

Sri Lanka has a long history of irrigation and water development projects. For hundreds of years, small dams, canals and water tanks successfully contributed to the nation's agricultural development and food security. Detail of persons displaced by some of the major projects in different parts of the world is given under in table 3.2.

Table 3.2. Persons Displaced by Large Dams

S.No	Country name	Project name	Displaced Persons
1	Togo	Nangbeto	10,600
2	Indonesia	Kedung Ombo	24,000
3	Brazil	Itaparica	49,500
4	Thailand	Pak Mun	4,945
5	China	Yantan	43,200
6	India	Maharashtra	40,000
7	India	Upper Krishna	240,000
8	China	Shuikou	84,400

(Source: WCD 2000)

3.2. LITERATURE REVIEW

The very important section of literature review consists of International and National studies with emphasis on the steps taken for the resettlement of the population displaced by large dams.

3.2.0. Introduction

The literature on economic aspects like cost-benefit analysis of the water resource power projects is very rich and a lot of work has been done in different parts of the world including Pakistan. However, less attention has been paid to the social and cultural issues arising due to dislocation caused by these projects. Across the world it is now recognized that building of large dams costs a lot. About 40-80 million people have been involuntarily dislocated from their homes and lands due to the construction of dams. The first detailed independent evaluation of dams, prepared by World Commission on Dams, stated that in economic development dams have made an important contribution but in many cases too heavy a price has been paid by affected community to secure those benefits. World Bank and Japan bank continue to promote and fund dams in southern countries. Building and planning of dams in countries like China, Brazil, India, Turkey, Mexico, Iran, Spain, Vietnam, Ethiopia and Laos can have severe impact on rivers and peoples (IRN, 2003; FOE, 2003).

World Commission on Dams (WCD) has carried out a series of evaluation studies to assess the development effectiveness of dams from 1997. These studies include; seven case studies, two country cases, a briefing paper, 17 thematic reviews, a cross check survey of 125 dams and about 1000 topic-related submissions reports. Country study includes India and China. Case studies cover some of the major projects of the world such as; Grand Coulee project on river Columbia in USA; Tarbela Dam project on river Indus in Pakistan; Aslantas Dam on river Ceyhan in Turkey; Kariba Dam on river Zambezi in Zambia and Zimbabwe; Tucurui Dam on river Tocantins in Brazil; Pak Mun Dam on river Mun-Mekong in Thailand; Glomma and Laagen Basin in Norway. The main objectives of these studies were to draw lessons from the worldwide experiences concerning dams (WCD, 2001).

Involuntary settlement as indicated by the Bank experience often gives rise to such severe risks which dismantles the production systems; people are impoverished where income is

lost; relocation is done to such environments where their skills are less applicable; institutions and social network are weakened; families are dispersed; cultural identity loss; mutual aid and traditional authority is diminished (World Bank, 2001).

3.2.1. International and National Experiences regarding resettlement

3.2. 1.1. Argentine and Uruguay

Bartolome and Danklmaier (1999) conducted out an evaluative study on *The Salto Grande Hydroelectric Dam* constructed on Uruguay River in Argentina and Uruguay (1973-79). The study highlights that the project displaced more than 20,000 persons affecting roads, railways and other infrastructure. It not only affected the hierarchy among urban centers of the affected area but also damaged the political and socio-economic relationships very badly. Social impacts of the project were not restricted only to the resettlement phase but continued to be felt many years after the completion of the project. Main reason for that negative impact was faulty resettlement planning and inconsistency in its implementation. The project failed in providing sufficient housing facilities to the affectees. As a result the excluded affectees were obliged to limit themselves to the leftovers of the old settlement, where their living conditions were very miserable. On the other hand, during the construction phase a large number of workers were attracted from the other areas. Majority of these workers settled there after the completion of project that resulted in a large shanty town.

Evacuated affectees got cash compensation of their houses according to market rate. They could spend that amount to purchase the residential houses. If the amount was not sufficient for that purpose, they could apply for a thirty years loan. Tenants were not considered for any compensation in the original project (1973) however, they were included later on in 1976. Besides the physical removal, the project did not implement any other plan like rehabilitation and social assistance of the affectees. New settlements were built about five kilometers away from the old one on the shores of the Lake Grande Salto. That new geographical location has adversely impacted the spatial relationships of the affectees with neighboring settlements. National road and the railways were shifted up to eighteen kilometers from the new site. The increase in distances further affected the commercial ties on account of difficult access to the agricultural colonies. For resettlement process, planning

was poor and its implementation was defective that negatively affected the poor and powerless affectees, which were excluded entirely of the benefits. Priority of the policy was only the construction and adjudication of houses while it neglected mitigation of socio-economic impacts. The remnant of old city was transformed of into an industrial area which promoted the economic activities. Later on that site became a satellite-town composed of undiminished old residential neighborhoods.

3.2.1.2. Brazil

WCD (2000) organized a study on *Itaparica dam* which was built without financing from the World Bank. Later on the Bank agreed to finance the resettlement process as part of a power sector loan. The project displaced about 49,500 persons who established a syndicate of affectees and demanded irrigated land near the reservoir. In sandy soil with difficult marketing arrangements creation of irrigated plots proved very expensive practice where resettlement costs exceeded \$1 billion amounting about \$200,000 per household. The owners of those irrigated plots were still dependent on free irrigation water and income maintenance payments. The affectees, who were resettled on their own and accepted cash compensation, received only \$5,000 per household. So resettlement process has proved a costly failure.

3.2.1.3. Egypt

Scudder and Habbob (2008) conducted an evaluative study on *Aswan High Dam* in Egypt. The dam was constructed on the Nile river in 1960s which created a 500 kilometer long reservoir (Lake Nubia in Sudan and Lake Nasser in Egypt) dislocating at least 100,000 Nubians. Out of which 48,000 were Egyptian Nubians who were resettled between 1963-64. The flooded area was composed of early historical remains of global significance, including Paleolithic artifacts, the Pharaonic temple Abu Simbel, early Christian churches and Islamic shrines. An international program for the preservation of this heritage was launched under the guidance of a team of archaeologists, artists and photographers from the Egypt and UNESCO. The Nubian Ethnological Survey which was one of the most comprehensive and detailed pre-inundation social surveys of dam-induced resettlement was carried out between 1961 and 1964. The majority of the affectees were resettled about three

to ten kilometers away from the Nile River near Kom Ombo city in 40 settlements on the basis of their relationship with each other. About 18,000 feddans (one feddan equals 1.038 acres) of agricultural land was allotted to the affected population. Nearly half of the allotted land was in sugar cane crop zone.

3.2.1.4. Togo

Picciotto et al (2000) organized a study on *Nangbeto project*, which displaced about 10, 600 persons. Out of which 3,000 lost only their houses while a very little part of their land was acquired. Remaining 7,600 persons had to move to resettlement sites built about 30 to 55 kilometers away from their ancestral lands. Initially these sites were sparsely populated areas but in-migration and natural growth have resulted in overpopulation. It adversely affected the former system of extensive agriculture based on rotation among landholdings of the area farmed in any single year. The farmers could not afford fertilizers, improved seeds, and other inputs to maintain soil fertility, resulting in low yields and less incomes. This shows that even apparently successful resettlement program requires proper monitoring and follow-up.

3.2.1.5. Laos

Imhof and Lawrence (2005) carried out an evaluative work on *Nam Theun II project*. The study reveals that it was the one of the largest and most controversial water resource projects in the Laos. It dislocated more than 6,200 indigenous people while about 100,000 persons residing on the river banks will also be affected due to increase in water flow. Though the displaced people were consulted, but the process did not qualify the concept of prior, free and informed consent as directed by the World Commission on Dams and other international human rights conventions. Majority of the fish species will be unable to flourish in the reservoir. The mitigation and compensation options for the affectees were largely untested and not properly planned. In case if these proposed measures fail, there were no contingency plans or guarantees for affectees. They were affected by the risks assumed by the government for the project such as debt incurred, project's revenue management and other socio-cultural and environmental impacts of the project. About the consequences of the project there was neither informed public debate nor meaningful participation of the affected community. To meet their livelihood and food requirements the

affectees rely mainly on fish and other aquatic products. To them these activities rank next after rice and vegetable cultivation in terms of household food security.

Imhof and Lawrence (2005) also carried out an evaluative work on *The Nam Theun-Hinboun dam*. It was completed in 1998 for which financial support was provided by the “Asian Development Bank” (ADB). It laid great impact on the living conditions of more than 25,000 population residing upstream and downstream of the project. As a result there was decrease in fish catches, vegetable gardens were destructed, dry-season drinking water sources and increased transportation problems. There were serious observations about the resettlement policy prepared for the restoration of affectees’ livelihoods regarding its effectiveness and sustainability. The poorest sectors of the communities heavily relying on water resources for their earnings have not been properly addressed in project activities. In Laos about 9,000 affectees have suffered losses in terms of drinking water supplies and fisheries. For the affectees there was no recourse mechanism, and they were in very critical situation when promises were not fulfilled. Due to the construction of *the Nam Song, Nam Mang 3 and Houay Ho* hydel projects about 23,000 settlements have been affected. These projects have endangered their food security, water supply, cultural inheritance and various other facets of the daily lives.

3.2.1.6. Zimbabwe and Zambia

WCD (2000) organized an evaluation study and made the report for *Kariba Dam*, constructed on the Zambezi River along the border between the Zimbabwe and Zambia in 1955–59. According to that report, pre-project planning document (1951) estimated that about 29 000 people would be resettled with the cost of £4 million. However, the actual number of resettlers increased to 57 000 but the budget remained the same. Compensation package comprised of money for dislocated persons for; loss of tribal lands and customary rights, loss of earnings due to clearing of new lands, construction of huts and damage to the crops. The Tonga community was not involved in planning process so they thought that the white men tricked them to capture their fertile lands. It created anti-government sentiments in Tongas. Affectees were treated like animals and packed in Lorries to be moved to their new destination. Majority of the allotted land was of poor quality lacking irrigation facilities where only one crop per year could be produced. Resettlement of a large number of people

on too small areas further aggravated many problems. With the passage of time many new problems occurred due to lack of water, breakdown of wells and other basic infrastructure provided as basic part of the resettlement program.

Social relations of the affectees living on the opposite side of the border affected very badly. However, a few things such as the access roads, schools and medical facilities were better than the pre-dam period. But majority of the promises made by the project during the resettlement campaign have not been fulfilled. However, when the project was completed a tourism industry, based on water sport and wildlife resources of the area with infrastructure like airport and mettle roads, was developed around the lake.

3.2.1.7. Guatemala

IRN and FOE (2003) reported that in the 1980s, one of the most awful human rights violence was done in Guatemala due to construction of Chixoy Dam. Due to the project paramilitaries murdered above 440 Maya Achí, mainly women and children, who refused to evacuate their homelands. No mitigation measures were adopted and survivors of the massacre have not yet received any compensation for their losses.

3.2.1.8. Indonesia

Picciotto et al (2000) organized an evaluation study of *Kedung Ombo Project* which displaced about 24,000 persons. In original plan it was decided that 90 percent of the displaced population would be moved to the outer islands under the transmigration program. But on ground only 25 percent of the displaced people did so, mainly due to serious delays in developing the transmigration sites. About 60% of the people resettled themselves in the reservoir area. Impacts of the transmigration varied considerably even at the same site because some affectees got good land, while others across the road were allotted very poor land. Some resettlers received their oil palm plantings and made their living well, while others were kept waiting for their plantings after 12 years. There was very poor follow-through in monitoring affectees' conditions to see that the plans were implemented in a timely way.

3.2.1.9. Malaysia

Nicholas (2001) carried out a study on *Temenggor dam* in Perak. The study points out that even after 20 years of its construction, the affectees' settlements were without basic amenities like electricity and piped water. They were not provided with what was promised to them. The situation was same for the people affected by *Sungei Batu project* in Selangor and the *Chenderoh project* in Perak. The affectees were not better off than they were in pre-dams phase. The main adverse impacts of those projects were; loss of their homelands, starvation and impenetrability in eking out a sustainable development. It encouraged for capitalist and colonial-style development of native population and their long-established terrain. Construction of dams removed resources from the reach of the affectees and gave it in the control of other group of people who were well off than affectees. They were enforced to evacuate their properties which threatened their socio-cultural identity and economic sustainability. As a result their political autonomy and independence was affected. In the *Bakun* project the population was increased upto 40% since the resettlement scheme. The issue of cultural heritage management was not properly addressed during the planning phase of the project.

3.2.1.10. China

IRN and FOE (2003) conducted studies to find out the impacts of dislocation on the affectees in China. Its aim was to explorer the latest situation of reservoir resettlement in China. The study reveals that dam construction in China is for electricity generation, flood control and navigation. Environmental and socio-cultural impacts of the project faced by the affectees were not properly addressed. Those who protested against the poor resettlement conditions for the Three Gorges Dam were maltreated and even sent to prisons. Youcuan et al, (2000) carried out post project evaluation study on *Shuikou Project* in Fujian Province of China. The study reveals that the dam having a reservoir area of 94 km² dislocated 67239 persons in rural and 17215 in the city. In 1988 and 1993 the physical relocation was completed, in the next 5 years jobs for the rural population was completed. The resettlement was important in boosting the transitions out of agriculture. The process was successful because per household \$14,000 were given which was the highest compensation amount in China for a project of such type. Main factors responsible for

successful resettlement were; suitable policies and their proper implementation by the Govt, affectees' participation in all stages, affectees' willingness to take the opportunity to supplement compensation amount with additional investments to construct new houses better than their affected houses and the independent evaluation of resettlement process.

Main focus of the resettlement policy was on minimizing the moving distance of displaced persons so that they could be resettled within the same environment. Whole communities of the affectees were moved into the same townships in order to maintain the existing socio-cultural structure. It helped in maintaining the social fabric within the families and avoiding changes of their professions after relocation. Three quarters of the affectees were provided with land compensation. As a result they were able to grow grains, vegetables and manage fruit and timber trees. For the remaining affectees nonfarm activities were planned.

Due to economic development and best employment opportunities better rehabilitation of affectees was done. In first step efforts were made for the development of social infrastructure while in next step assistance was provided to the affectees, especially to the low income groups of the society. By the end of 1993 about 30,000 jobs (88 % of the required) had been created. A National Highway was constructed parallel to the reservoir, which minimize distances between new sites and affected villages. A reservoir development fund amounting ¥ 50 million was established to provide low-interest loans to assist economic rehabilitation of affectees. Most of the physical relocation was completed before the start of reservoir filling.

Picciotto et al (2000) reported that due to *Shuikou* project nearly 67,000 people were displaced. 17, 000 more people were dislocated from the upstream areas due to the construction of embankments that avoided the relocation of 0.2 million people. By 1992, all relocation process was completed. It was planed that 74% of the affectees would be rehabilitated through traditional agricultural techniques. On contrary to that 75% of them were rehabilitated by means other than agriculture. The reservoir fishery, oyster beds, fruit and timber trees, and township and village enterprises were developed, and foreign investors were facilitated to establish factories for affectees. The income of displaced people reached to pre-project levels by 1994 and increased 44% by 1996. Thus treating resettlement policy as a development opportunity has made it one of the most successful resettlement policies.

Higashi and Watch (2003) carried out an evaluative study on *Yantan project*. According to that study 43,000 persons were dislocated and means of income of 19,000 persons were affected by the project. Resettlers' income increased as they were provided by a grain ration until the restoration of their income level. Majority of them were shifted to sugar estates and state farms in other areas. 14 more projects were either in planning phase or under construction along the Lancang River. Information about these projects and their impacts was very scarce. The affectees of these projects were in bad conditions as they have not got adequate compensation even after dislocation from their lands.

The *Manwan* Hydropower project, with an installed power generating capacity of 1,250 MW, was completed in 1993 on the Lancang River. According to Oxfam Hong Kong report, a total of 144 settlements in three prefectures namely Dali, Simao and Lincang were affected by the project. The official figure of the dislocated population was 3500 but to save the compensation amount the number was minimize as according to the report. 7000 people were displaced and most of them forced out of their homes without any redress. The Manwan Dam affectees were neither consulted nor were they compensated. Not only have they lost farmland but have lost their water resources which they need for income. The villagers claimed that the Govt. built a small reservoir from where water was brought to their homes. The surrounding villagers stole the water, and soon the reservoir dried up. As a consequence the villagers have to pay a fee to get water.

Dachaoshan dam was the second dam which was constructed on the Lancang River about 131 km downstream of Manwan dam with a capacity of 1350MW. 12385mu of the farmland was flooded and above 6000 people were affected. The resettlement budget was 10 times higher but it was insufficient to compensate for their losses, the affectees' houses have defects like poor foundations and tiles. Another dam constructed in 2002 on the Lancang River has a 4200MW installed capacity approximately 32000 people to be resettled (Higashi and Watch, 2003).

3.2.1.10. India

Maudgal (1991) worked on, "Environmental Impacts of water resource development projects in India". He has given valuable information regarding various aspects of environment such as, command area development, rehabilitation of the affected population,

compensatory afforestation, catchments area treatment and cultural aspects. The study reveals that the project will affect 254 villages of which 89 with the population of 139,396 and land area of 37,030ha will fully submerge. It was estimated that 40,000 ha land would be required for their resettlement. Rehabilitation was proposed in five phases but all would be finalised before filling of reservoir. Provision has been made for the creation of infrastructure such as primary schools, drinking water, internal roads and house construction. In the study, the suggestions are given for minimizing the adverse impacts of the project without sacrificing the irrigation potential.

Dalua (1993) carried out a study titled as “Environmental Impact of Large Projects on human settlements”. The study presents an overview of past experiences of various water resource development projects in India. A brief summary of these projects is as under;

Ghataprabha Project submerged about 6337 ha of land affecting 22 villages with a population of 15,660. *Malaprabha* project submerged 13,576 ha of land affecting 43 villages with a population of 41,000. The reservoirs were impounded in 1972-73. Land of the affected area was fertile. The people were reluctant to shift because of following reasons. (a) There was sentimental attachment to the houses and native land. (b) Assessment value of land and property was not adequate. (c) There was delay in payment of compensation. (d) Compensation money paid to the affectees was utilized otherwise, and they had no money to construct their houses in the new colony (Dalua, 1993).

Srisailem Project was completed in 1982 on river Krishna. The area of the reservoir was about 237 km². It submerged 85,000 acres of land affecting 78 villages and 22,000 families of 73,460 people. The dislocated population made their own rehabilitation arrangement at different placers. However the state government provided the basic amenities such as drinking water, electricity, schools etc. The state government conducted a socio-economic study to examine the pattern of utilization of compensation money, changes in the socio-economic condition of the people and to suggest measures for the economic uplift of the deprived families. The study revealed that of the total compensation money received by the affectees, 11-14% was used for land acquisition, 43-50% was invested on acquiring houses and about 15% was spent on repayment of debts etc. There was a change in the occupational

pattern of the affectees. There was decline of workers in agricultural sector while activities in non-farming sector increased. There was also decline in the livestock sector. The study suggested that in order to improve the living conditions of the displaced persons, irrigation facilities should be provided in dry lands, fishing in the reservoir should be encouraged, employment generation programs such as construction of roads in the rural areas should be taken up and dairy development programs should be encouraged.

Sardar Sarovar Project was the largest multipurpose water resource development project in India on river Narmada aimed at irrigating 2.12 million hectares of land and generating 1450 MW of installed power. The proposed reservoir will submerge about 37,000 ha of land of which about 11,000 ha is forest land. It will also affect 248 villages involving 67,000 persons in Gujarat, Maharashtra and Madhya Pradesh. In June 1991, the World Bank appointed Bradford Morse to organize an independent review of measures being taken to mitigate the human and environmental impacts of the Sardar Sarovar project. Extracts of the report were. "The only resettlement policy applicable to all the three states was the World Bank's but that has not been respected. The projects were not appraised in accordance with bank requirements. Basic information had not been gathered and adequate plans for resettlement and rehabilitations were not in place." The history of environmental aspects of Sardar Sarovar project is a history of non-compliance. There was no comprehensive impact assessment. The nature and magnitude of environmental problems and solutions remain elusive. This gives air to the controversy surrounding the projects.

Subarnarekha Project comprises two dams under construction, will submerge 25,613 ha land in Bihar and 4115 ha in Orissa affecting about 60,000 persons. Since it was not possible to provide agricultural land to each and every dislocated family, besides allotment of available Govt. land, ceiling surplus land is proposed to be acquired for allotment. Further it is proposed to provide service opportunities in the project as well as in other Government departments, self-employment schemes, vocational training etc. But as observed by the World Bank, there is much to be done in the rehabilitation plan now being acted upon by the project authorities (Dalua, 1993).

Rengali Dam Project gives a very harrowing experience about the rehabilitation of its oustees. The dam was substantially completed in 1985 and one after another all the four units have since been commissioned. But payment of compensation for acquisition of land for the reservoir, displacement of affected people and their resettlement were still unsettled issues. The special committee on rehabilitation constituted by the Orissa Legislative Assembly under the chairmanship of the honorable speaker visited the Rengali project and observed that reclamation of land has been done in a very careless and indifferent manner. There were irregularities in payment of compensation money while family enumeration has not been done properly. Land identified for allotment was not plotted and demarcated correctly. Delivery of possession in the field was also not ensured. Land allotted has been encroached at several places resulting in disputes.

Hirakud Dam Project dislocated 22144 families in 249 villages in Orissa and 36 villages in Madhya Pradesh. The reservoir was about 743 km² submerging 12,330 acres of cultivable land. According to resettlement policy the affectees were paid full compensation for acquired lands and properties. They were free to resettle on their own choice or opt to resettle in government-sponsored colonies. In the latter case, they were allotted reclaimed lands at a subsidized rate amounting Rs: 213 per acre. Actual cost of reclamation was about Rs: 500 per acre which was borne by the project. There was no maximum limit for allotment of land. House sites were given free of cost in the reclaimed areas and timber was supplied for the construction of houses at 60% of the normal rate. Affectees were provided manures and fertilizers free of cost while seed paddy was given on loan. Basic amenities like drinking water, schools, hospital and community centre were provided in the affectees' colonies. Transport was free of cost to the people of submerged area for carrying all their movables except straw. There were complaints about delay in payment of compensation money (Dalua, 1993).

Balimela Project displaced about 1200 families and the policy adopted in Hirkud was almost repeated in that project. In beginning the local people did not welcome the project, the obvious anger being against the manner in which past displacement problem was being handled. There was great agitation which delayed the completion of the project. This agitation compelled the government to approach the affectees and to solve resettlement

problems in a systematic manner, which resulted in a new and uniform Rehabilitation Policy (Dalua, 1993).

WB (1998) conducted out post project review of *The Upper Krishna Project (UKP)* which was completed in 1982. It was the world's largest resettlement task sponsored by the Bank. *Narayanpur* reservoir affected 36,306 people while number of people affected by *Almatti* project will be 340,000 to 390,000 and by the entire *Upper Krishna Project* so much as 376000 to 426000. Relocation in *Narayanpur* was not done as planned. Half of the resettlement towns were planned to be completed by 1978 and the remaining by 1980 but it preceded slowly and therefore the dam and its filling also lagged behind. People did not want to move because the new place had practically no basic facility. About 80 to 90% of the affected population had not purchased replacement land due to lack of compensation, those who did had land of poor quality. Many people continued to farm the draw down area as the reservoir was partly filled. About 40% of the land submerged could still be farmed throughout the year whereas 30% was uncovered for 3 to 4 months best for one crop harvestation. About 13000 families were partly compensated but only 354 moved at *Almatti*. The remaining got work as labors or migrated to other areas. The relocation process was poorly coordinated. The affectees were not provided water for their irrigation, services rendered were inadequate. Their role was lacking in the planning process which resulted in their dissatisfaction with the compensation. An overwhelming majority of them filed a suit, the court awarded additional compensation which doubled the amount. Even though the rates improved, with the rise of land prices these rates never caught up. The income restored was defective. The strategy was never used for the difference of time lag between the displacement and the land availability.

3.2.1.11. Pakistan

In order to cover the literature review and theoretical portion of the thesis, record of Tarbela Dam Project and library books were searched while internet was also used. The review of previous studies was done to get guidance and learn from the available literature.

Sheikh (2001) carried out a study to review the resettlement process adopted for the affectees of Mangla dam which was completed in 1967 with a gross storage capacity of

7260 M cu m. It was one of the largest resettlements of its type in the world at that time. Six towns and 255 villages were affected thus relocating 81,000 people, affecting 32,900 houses, and acquiring 35,600 ha of land. The displaced families were resettled in Punjab and Sindh provinces as well as on periphery of the reservoir. The major resettlement program included infrastructure development for new Mirpur town and seven hamlets along with construction of public amenities. A mettle road was also built around the reservoir. The resettlement process was not very successful. Most of affectees resettled in far flung areas could not get integrated in a different culture and moved back to Mirpur area after disposing off their allotted land. The socio-economic environment of the area was affected by the project, including the emergence of new economic opportunities like fishing and the emigration of affectees to the United Kingdom. The remittances from migrants in that period strengthened the urbanization process and surrounding areas of Mirpur had emerged as semi urbanized zone. A large number of palacial houses were built there which were mostly unoccupied. The presence of these houses all around the reservoir confirms the social and kinship links of affectees with their ancestral land. A large number of refugees (Muhajirs) were settled in suburbs of Mirpur in semi permanent houses constructed on WAPDA's acquired land without proper physical and social infrastructure.

Sheikh (2001) conducted out a study to highlight the impacts of Mangla dam raising on resettlement which will affect about 44,000 persons. There was a temporary loss of source of income for artisans and other various social groups. Women not only perform their traditional duties but also play a part in the income. Brick kilns provide income to low income groups. Construction of settlements for the affectees will want a high demand of bricks which will prove beneficial for the kilns industries but with the dam the kilns will have to be abandoned. With the increased capacity of the Mangla reservoir it will be beneficial for about 900 fishermen as well as fish breeding and production. Market price will be paid for compensation of land, with 15% payment paid as compulsory charges for acquisition. Permission will be given to the landowners for cultivation of their lands in winter when water recedes. House owners will be paid with 10% amount in addition to the compensation money. They will be allowed to take away the left over of their houses also. The owners of shelters will receive a minimum amount of rupees 300,000.

In light of the past experience resettlement was done in closed areas e.g. a city was made for 30000 people in vicinity of *Mirpur* town. This will has all the modern facilities. For those who want to settle near their origins 4 towns are being developed. The affectees will be given 5 marla to one kanal plots for which they will pay the cost. Settlers on Govt/WAPDA owned land will be given land for housing free of cost. To improve their earnings technical training is planned for the affectees. For heavy-traffic, a concrete bridge is being constructed which will minimize the distance between the project area and other parts of the country. It has been agreed to pay to Government of Azad Jammu and Kashmir net hydel profit of Mangla @ Rs: 0.15/kWh. A provision was also made for the old affectees who were displaced in 1960's but were not compensated.

Wescoat (2001) expressed that on technical aspects and reservoir management issues of Tarbela Dam project a significant literature was there. However, an integrated, comprehensive and long-term ex post evaluation study of the dam was lacking. Ecological, cultural and socio-economic impacts of the project were not highlighted.

World Commission on Dams (2001) has undertaken a case study on the Tarbela Dam. This report lays more emphasis on comparing the predicted and actual achievements of the project. Salient features of the report included; design characteristics, implementation schedule, cost and benefits, water management, irrigation and agriculture, hydropower, flood control, social and cultural effects (resettlement), environmental effects, options assessment and decision making process etc.

Tariq (July 1993) carried out a study on the “Environmental Impacts” of Tarbela Dam Project on behalf of Pakistan WAPDA and Project Monitoring Organization. The study evaluated the impacts qualitatively and wherever possible quantitatively as well. It divided the impacts into two broad categories i.e. the major environmental impacts and the minor environmental impacts. The Tarbela reservoir has provided better means of water transportation as compared to pre-project rugged mountainous footpaths. Tarbela has helped a lot in controlling flood in the downstream areas. It also raised the water level in the periphery of the reservoir.

UNEP-DDP (2004) reported that in Pakistan, thousands of people were displaced without adequate compensation, resettlement and rehabilitation. Case studies of Tarbela and Chotiari revealed that a gross violation of laws and constitutional provisions had been committed. The affectees were not properly informed about the fate of their land, which was the main source of their livelihood. During the land acquisition phase of Tarbela dam project, majority of the affectees were not clearly informed of the fact that their properties would be taken forever. A survey carried out in 1995 for the affected communities of Chotiari project was incomplete which declared only 596 affected families eligible for compensation. Many families were left out in the survey even a complete village (Deh Dubi II) was not surveyed. According to the Chotiari Resettlement Agency estimates, there were 594 affected families. The community representatives and their organizations challenged these figures as they claimed a total of 993 directly affected families.

UNEP, DDP (2004) worked on resettlement of Tarbela Dam affectees. It stated that initially it was estimated that a total of 100 villages would be submerged, requiring resettlement of 80,000 people. But the actual number of villages affected, completely or partially, increased to 130 displacing more than 110,000 people. Many years after completion of the project, a large number of the affectees were still awaiting compensation for losing their livelihoods. Affectees severely complained about and criticized their lack of access to the information about the resettlement sites, development works, cost and its completion time. The arrangements made by the government for the affectees were defective, insufficient and unjustifiable causing many social, economic and environmental problems. The Ministry of Water and Power issued a notification on April 23, 1996 appointing a six member commission to reinvestigate the long-standing claims of affectees under the chairmanship of a judge of the Supreme Court of Pakistan. The commission could not be convened for unknown reasons and was reconstituted on July 28, 1998. The commission finally commenced its work on August 1, 1998. The commission work was kept secret from the affected communities and even after the completion of commission report the outcome was not made public. As a result, the affected people dishonoured the legitimacy of commission and demanded another pellucid and inclusive process for the assessment of claims.

Women of the affected valley passionately recalled the abundance of natural resources and the good social life they have had there. They have emotional attachment with the submerged area where they and their forefathers lived for generations. Dislocation caused a dramatic change in their lifestyle and social value. Those who were previously involved in farm-based activities effectively and received a share of the fruits of their labor in various forms became completely dependent on the male members of the families. Their mobility, socio-cultural setup and the “collective enjoyment” appears to have declined due to the scattering of families and communities. Dislocation has limited open spaces for social gatherings. They often talk about the fairs and games of that time, marriage ceremonies, traditional healers as well as the routine work carried out by men and women in the community. The compensation provided to the affectees was not sufficient as it did not take into account all the direct and indirect affectees. The resettlement programs, designed in isolation, were not justifiable. The resettlement programs mostly focused only on physical relocation rather than the economic, cultural and social development of the affectees. So majority of those who resettled in the new sites rarely had their livelihood fully restored to the pre-project level.

WCD (2001) organized a study to review Tarbela Dam project. According to the report the project displaced about 96,000 persons (about 10,000 households) submerging 120 villages. Nearly half of the affectees (45%) were below 20 years of age while 35% of them were within age group 20-60 years. Punjab and Sindh governments allocated 12000 ha each in their respective provinces to resettle the affected population. Landowners having less than 0.2 hectare of irrigated land and 0.8 hectare non-irrigated land were given cash money. Affectees having land more than those limits were allotted alternate land in Punjab and Sindh provinces. Owners of the affected houses were paid cash compensation on the basis of 1968 market value. A total of 235 awards were accorded for the affectees. Similarly they were also offered purchase of residential plot for Rs.1300/- per kanal and shop measuring 38m² for Rs.75. Transportation facility were also provided by the project to shift their moveable assets and building material.

Affectees were given choice to get land in any of the five hamlets on “first come first served” basis. About 1906 residential plots of 127m², 254m² and 508m² were allotted to

them. In addition to these plots, 1573 commercial plots were made available. As there were only 311 residential plots in the New Darband Township for the 1282 affectees of Kala Dhaka so they refused to accept these plots. On the contrary, all of them requested that they should be granted monetary compensation instead of plots. According to the earlier commitment, the Punjab Govt. handed over all the promised land to the affectees but the Sindh Govt. withheld 7823 hectares of alternate land, which had to be allotted to the affectees. So a large number of affectees were unable to claim alternate lands in Sindh. Ineligible affectees were allotted residential plots in the five resettlement townships. The affected houses were assessed on the basis of 1968 market value.

The eligibility criteria lacked the displacement rights for most of the affectees who were declared ineligible for alternate arrangements. Normally the focus in such cases lies on valuation of land, cash compensation or alternate lands to eligible affectees. No real attempt was made to integrate the ineligible affectees into new market and livelihood milieu. Due to lack of clear policy regarding the employment of ineligible affectees, there were many complaints in the resettlement townships where majority of them were living. The main reasons were; lack of mitigation measures, prolonged delays in announcement of decrees in judicial cases, refusal of Sindh government to allot remaining land, shortage of residential plots for the affectees of New Darband Township.

During the construction of the Ghazi-Barotha Hydropower Project, the affectees of Tarbela Dam protested to the World Bank against improper measures taken by WAPDA for their rehabilitation and settlement. As a result the bank made it mandatory for the Government of Pakistan to settle first the outstanding issues of Tarbela Dam Project. A review team was appointed by WAPDA which submitted its report in May 1996. The affectees were not agreed with the report on most of the issues so Government constituted a Commission to reexamine the report on August, 1998. The Commission submitted its report to Ministry of Water and Power in July 1999. According to that report a total of 2197 affectees were not allotted alternate land and 1282 of them were not provided residential plots. The Commission identified another 4089 claims for substitute land and 7649 for residential plots.

Affectees belonging to the working area were displaced first and were provided alternate land in the Punjab province. Similarly the affectees of the reservoir area, who were displaced later, were given choice to get substitute land in Sindh province. The time for the payment for alternate land was twenty years with an interest of 4%. In Sindh the rate for alternate land was Rs.1729 per hectare. The announcement of awards was completed in 1967 while payment was made in 1974. Over this period Pakistani currency was devalued two times. Consequently it was very difficult for the affectees to purchase alternate land with the amount they received as compensation. According to WAPDA's records there were 1,953 eligible families who have applied for alternate land but still waiting for allotment. In order to provide them the minimum 6.5 ha of decided land to each of them, the size of available alternate land would have to be increased from 7823 ha to 14,226 ha.

There was lack of a clear policy for resettlement of the Tarbela affectees which created various problems for the government as well as for the affectees. Due to lack of a regulatory policy certain groups benefited while others lost. WAPDA was unable to made alternate arrangements in time. Consequently when the reservoir was filled, water level rose in the area submerging the houses with belonging of the affectees and they were evacuated by Pakistan Army with the help of boats. Due to shortage of residential plots resettlement process for plots was still incomplete.

Section 2

CHAPTER 4

IMPACT OF ALLOTMENT POLICY ON AFFECTEES SATISFACTION

4.0. Introduction

This chapter deals with the land allotment policy which was made for allotment of alternate land to the affectees. The chapter is divided into two sections. Section one describes some of the basic socio-economic and demographic characteristics of the respondents households and member of families. In next section the land allotment policy is discussed and analyzed to find out its impact on the level of affectees satisfaction with a brief conclusion in the end.

4.1. Socio-Economic Setting of the Sample Villages

This section discusses some of the socio-economic characteristics of the sample area and is divided into two parts. Part one shows some of the socio- economic aspects of the respondents. Part two discusses the basic socio-economic indicators such as population characteristics, housing structure and household size, drainage system, literacy, occupation etc; of the sample households found through field survey.

4.1.1. Socio-Economics of the respondents

4.1.1.1. Age of the respondents

Nearly 40 years have elapsed since the construction of the Tarbela dam. The affectees born in the newly resettled areas are obviously less than 40 years of age. Those who are above 40 years have witnessed the process of dislocation and resettlement. For comparative analysis the respondents have been distributed into three age groups; below 40 years (who born after dislocation), 40 – 60 years (quite young at the time of dislocation and above 60 years (mature at that time). In the sample households, majority of the respondents were mature and aged. Nearly 60 % of them were of the age group between 40 -60 years. Similarly the ratio of aged persons (above 60) was also significant (114 persons) making an average of 28.5%. The ratio of the young respondents (below 40 years) was very low (12 %) as shown in table 4.1 and figure 4.1.

Table 4.1. Tarbela Dam Affectees, Age of the Respondents by sample category

Respondent age		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Below 40 years	Count	33	6	9	48
(Young adults)	%	11.9%	9.2%	15.8%	12.0%
40 to 60 years	Count	170	41	27	238
(Mature adults)	%	61.1%	63.1%	47.4%	59.5%
Above 60 years	Count	75	18	21	114
(Aged)	%	27.0%	27.7%	36.8%	28.5%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Figure 4.1 Age of the Respondents by sample category



4.1.1.2. Education of the respondents

Field survey shows that more than one fifth (21.5 %) of the respondents were illiterate. The ratio of the respondents whose had level of education under Matric was highest making about one third (32.5 %) of the total. The proportion of respondents holding Secondary School Certificate (SSC) was 23.5 %. Only 8.5 % had passed intermediate level examination while the same numbers of respondents (8.5%) were degree holders.

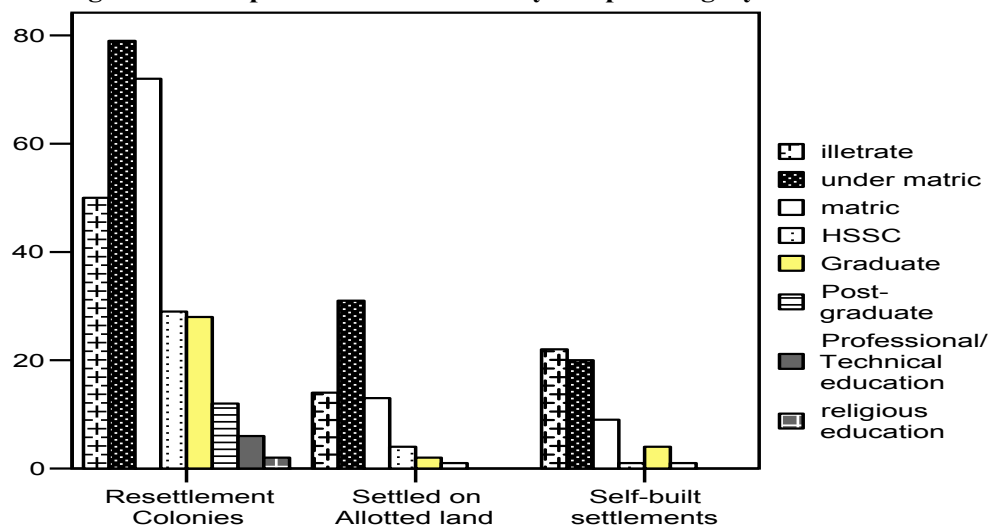
Ratio of the respondents holding postgraduate degree was 3.5 %. Detail information about the education of the respondents is shown in table 4.2 and figure 4.2.

Table 4.2 Tarbela Dam Affectees, Respondent's Education by sample category

Respondent Education		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Illiterate	Count	50	14	22	86
	%	18.0%	21.5%	38.6%	21.5%
under Matric	Count	79	31	20	130
	%	28.4%	47.7%	35.1%	32.5%
SSC	Count	72	13	9	94
	%	25.9%	20.0%	15.8%	23.5%
HSSC	Count	29	4	1	34
	%	10.4%	6.2%	1.8%	8.5%
Graduate (14 year education)	Count	28	2	4	34
	%	10.1%	3.1%	7.0%	8.5%
Post-graduate (16 year education)	Count	12	1	1	14
	%	4.3%	1.5%	1.8%	3.5%
Professional/ Technical education (after HSSC)	Count	6	0	0	6
	%	2.2%	.0%	.0%	1.5%
Religious education	Count	2	0	0	2
	%	.7%	.0%	.0%	.5%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Figure 4.2 Respondent's Education by sample category



4.1.1.3. Occupation of the respondents

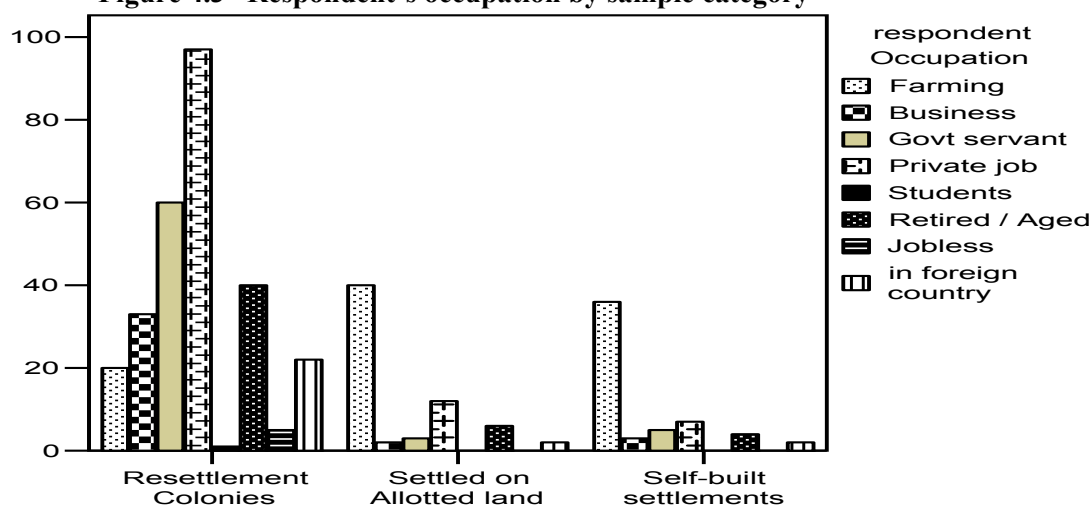
In the sample households, majority of the respondents (46%) were engaged in non-agricultural activities especially in service sector. Out of which the occupation of 29% persons was private jobs while 17% of them were government employees. The proportion of the government employees was higher (21.6%) in resettlement colonies located near the project site as compared to the other settlement categories. The basic reason of that trend was higher literacy ratio in resettlement colonies. Same trend was observed in case of private jobs. The ratio of respondents employed in private jobs was highest (34.9%) in resettlement colonies because they were located near to the urban centers and industrial estates such as Hittar at Haripur and Gadoon at Topi. Overall analysis shows that 24% of the respondents were engaged in farming. The proportion of farmers was higher in sample categories “settled on allotted land” and “self-built settlement” with representative frequency of 61.5% and 63.2%. Respondents belonging to first category were settled on allotted agricultural land while respondents of self-built settlements were settled in agricultural belt and bought land there with compensation money. So they were mainly involved in agricultural activities as shown in table 4.3 and figure 4.3.

Table 4.3. Tarbela Dam Affectees, Respondent’s occupation by sample category

Respondent Occupation		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Farming	Count	20	40	36	96
	%	7.2%	61.5%	63.2%	24.0%
Business	Count	33	2	3	38
	%	11.9%	3.1%	5.3%	9.5%
Govt. servant	Count	60	3	5	68
	%	21.6%	4.6%	8.8%	17.0%
Private job	Count	97	12	7	116
	%	34.9%	18.5%	12.3%	29.0%
Students	Count	1	0	0	1
	%	.4%	.0%	.0%	.3%
Retired / Aged	Count	40	6	4	50
	%	14.4%	9.2%	7.0%	12.5%
Jobless	Count	5	0	0	5
	%	1.8%	.0%	.0%	1.3%
in foreign country	Count	22	2	2	26
	%	7.9%	3.1%	3.5%	6.5%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Figure 4.3 Respondent's occupation by sample category



4.1.2. Socio-Economics of the sample households

4.1.2.1. Population

According to the field data, total population of the surveyed households in the sample villages was 2963 persons, out of which 1486 were male and 1477 were female making a ratio of 99.4 female per hundred male showing a dominance of male populating. Category-wise population of surveyed households is given in table 4.4.

Table 4.4 Tarbela Dam Affectees, Household population by sample category

Settlement category	House-hold surveyed	Population				
		Male	%	Female	%	Total
Resettlement Colonies	278	1022	50.5%	999	49.5%	2021
Settled on Allotted land	58	189	50%	189	50%	378
Self-built settlements	65	275	48.8%	289	51.2%	564
Total	400	1486	50.1	1477	49.9	2963

(Source: Field Survey 2009)

4.1.2.2. Age structure:

Majority of the population was young and mature in the sample households. Out of a total of 2963 persons, 1773 persons (59.8 %) were in age group of 16 – 60 years old, 958 persons (32.3 %) were below 16 years. The number of aged persons (above 60) was very low (232 persons) making an average of 7.8%. Sample category-wise detail of age composition is given in table 4.5.

Table 4.5 Tarbela Dam Affectees, Age Structure by sample category

Name of Settlement	Young (< 16 years)		Mature (16-60)		Aged (60 +)		Total
	Male	Female	Male	Female	Male	Female	
Resettlement Colonies	295	330	643	602	84	67	2021
Settled on Allotted land	59	77	111	96	19	16	378
Self-built settlements	84	113	168	153	23	23	564
Total	438	520	922	851	126	106	2963
%	14.8	17.5	31.1	28.7	4.2	3.6	100

(Source: Field Survey, 2009)

4.1.2.3. Occupation

According to the field data private jobs was the dominant occupation of the male population of the study area making a ratio of about 35 %. Farming was the second largest occupation engaging 12 % of them while the segregation for the rest of occupation is given in table 4.6.

Table 4.6. Tarbela Dam Affectees, Occupation Pattern of sample households

Occupation	Male		Female		Total	
	Number	%	Number	%	Number	%
Farming	149	16.8	0	0.00	149	8.4
Business	82	9.2	0	0.00	82	4.6
Govt. Job	128	14.5	15	1.7	143	8.0
Private Job	527	59.5	35	3.9	562	31.5
House wife	--	--	846	94.4	846	47.5
Total	886	100%	896	100%	1782	100

(Source: Field Survey 2009)

4.1.2.4. Literacy ratio

In the sample households a total of 2079 persons were literate making a ratio of 68.8%. Its ratio was 90% for males and 65% for females. Literacy ratio was higher in resettlement colonies making an average of 73% followed by settlements built on allotted land in Punjab where it was 62%. It ratio was lowest (55.2 %) in self built settlements. The detail of overall literacy ratio is shown in table 4.7.

Table 4.7. Tarbela Dam Affectees. Education in sample households by sample category

Settlement name	Illiterate	%	Literate	%	Under 5 years	Total
Resettlement Colonies	352	17.5%	1504	74.5%	165	2021
Settled on Allotted land	121	32.0%	209	55.3%	48	378
Self-built settlements	95	16.9%	366	64.9%	103	564
Total	568	19.2%	2079	70.2%	316	2963

(Source: Field Survey 2009)

4.1.2.5. Level of Education

According to the filed findings a total of 2079 persons were educated. Out of them, a single largest proportion of respondents (54.9 %) had below Matric level education. Nearly one fourth (23.1 %) were Matriculate, 15.8 % had upto graduation level education, and 3.0 % were postgraduates, while 1.9 % of them were professional / diploma certificate holders. Its detail for sample households is given in table 4.7a.

Table 4.7a. Tarbela Dam Affectees. Education in sample households by sample category

Settlement Category	Illiterate	Level of Education					Total Literate
		Below Matric	Matric	Graduate	Post-graduate	Technical /Profess.	
Resettlement Colonies	352	726	391	300	58	29	1504
Settled on Allotted land	121	148	27	19	08	07	209
Self-built settlements	95	268	60	30	04	04	366
Total	568	1142	478	349	70	40	2079
%		54.9	23.0	16.8	3.4	1.9	100

(Source: Field Survey 2009)

4.1.2.6. Housing Conditions and Accommodation

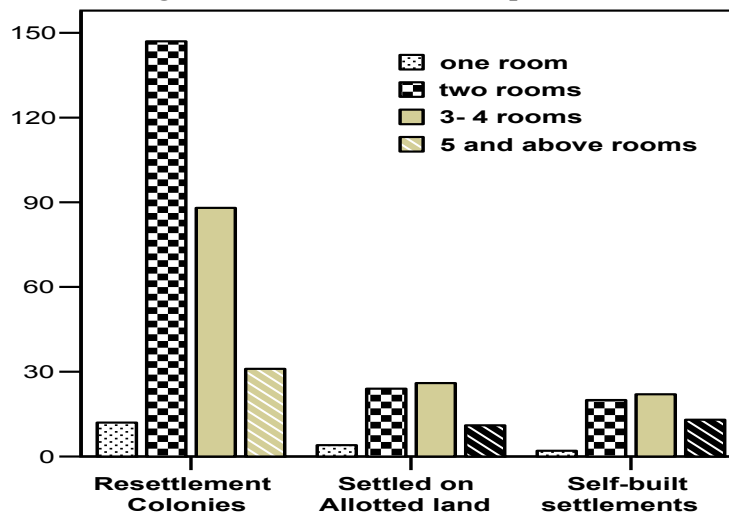
Most of the households in the sample area were pacca and the settlement pattern was nucleated depending on the availability of water, agricultural land and transportation facilities. Houses having two to four rooms were common in the sample villages making an average of 82 %. According to the findings of the field survey nearly half of the households (47.8 %) were comprised of two rooms while 34.0 % of households had three to four room accommodations. The ratio of households having 5 rooms and above was 13.7 %. Settlement category-wise detail of rooms per household in the study area is given in table 4.8 and figure 4.4.

Table 4.8. Tarbela Dam Affectees, No. of rooms per household by settlement category

Settlement Category		Number of bedrooms				Total
		one room	two rooms	3 - 4 rooms	5 and above	
Resettlement Colonies	Count	12	147	88	31	278
	%	4.3%	52.9%	31.7%	11.2%	100.0%
Settled on Allotted land	Count	4	24	26	11	65
	%	6.2%	36.9%	40.0%	16.9%	100.0%
Self-built settlements	Count	2	20	22	13	57
	%	3.5%	35.1%	38.6%	22.8%	100.0%
Total	Count	18	191	136	55	400
	%	4.5%	47.8%	34.0%	13.8%	100.0%

(Source: Field Survey, 2009)

Figure 4.4. Number of rooms per household



4.1.2.7. Households Size

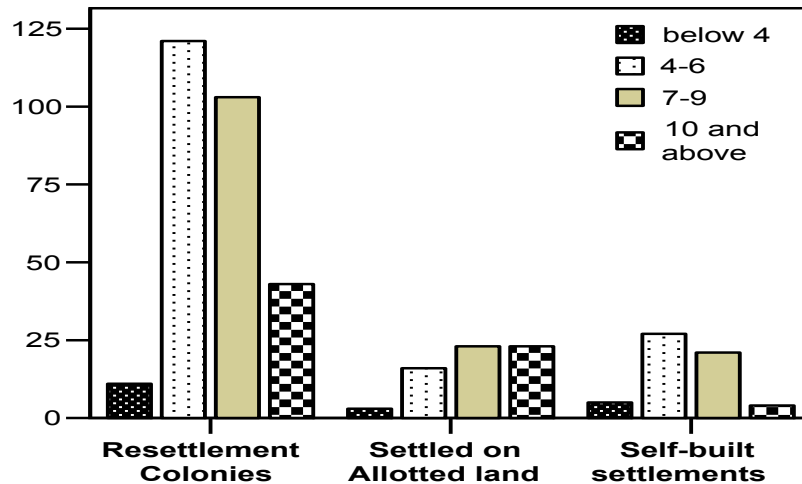
The household size which includes father, mother, their children, nephews, grandmother and grand father etc, in the area ranged from 1 to 21 persons per house. More than 82 % of households had below 10 persons per household. More than three fourth (77.7 %) of the sample households were comprised of families having 4-9 members. Its detail is shown in table 4.9 and figure 4.5.

Table 4.9. Tarbela Dam Affectees, Household size by settlement category

Settlement Category		Household size				Total
		below 4	4-6	7-9	10 and above	
Resettlement Colonies	Count	11	121	103	43	278
	%	4.0%	43.5%	37.1%	15.5%	100.0%
Settled on Allotted land	Count	3	16	23	23	65
	%	4.6%	24.6%	35.4%	35.4%	100.0%
Self-built settlements	Count	5	27	21	4	57
	%	8.8%	47.4%	36.8%	7.0%	100.0%
Total	Count	19	164	147	70	400
	%	4.8%	41.0%	36.8%	17.5%	100.0%

(Source: Field Survey, 2009)

Figure 4.5. Household size by settlement category



4.1.2.8. Housing structure and household size:

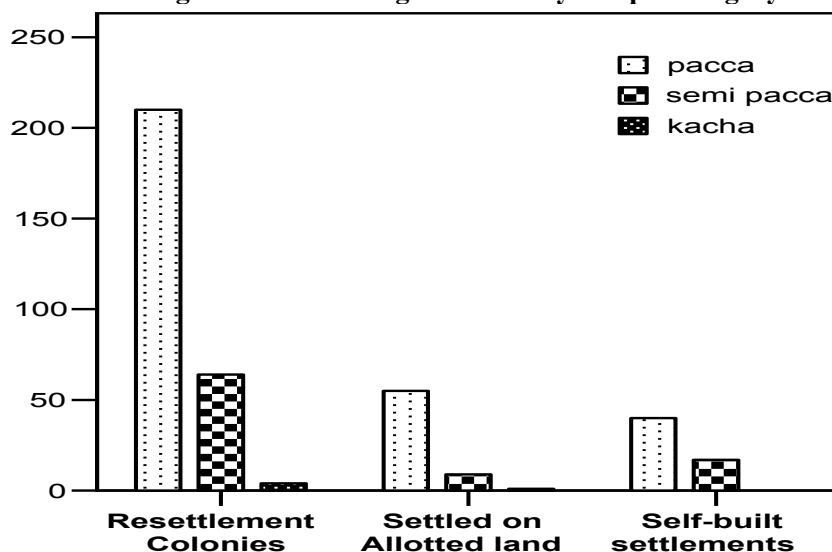
In sample households majority of the houses (76.3 %) were pacca whereas 22.5 % households were semi pacca. The ratio of katcha households was negligible (only 1.2 %). Average household size of the sample population was higher than the over all village average as shown in table 4.10 and figure 4.6. Figure 4.7 highlights the village-wise detail in this regard.

Table 4.10. Tarbela Dam Affectees, Housing structure by sample category

Settlement category		House structure			Total	Average H.H.Size
		Pacca	Semi-pacca	Kacha		
Resettlement Colonies	Count	210	64	4	278	7.2
	%	75.5%	23.0%	1.4%	100.0%	
Settled on allotted land	Count	55	9	1	65	8.6
	%	84.6%	13.8%	1.5%	100.0%	
Self-built settlements	Count	40	17	0	57	6.6
	%	70.2%	29.8%	.0%	100.0%	
Total	Count	305	90	5	400	7.4
	%	76.3 %	22.5%	1.2 %	100.0%	

(Source: Field Survey, 2009)

Figure 4.6 Housing structure by sample category



4.1.2.9. Cooking Fuel

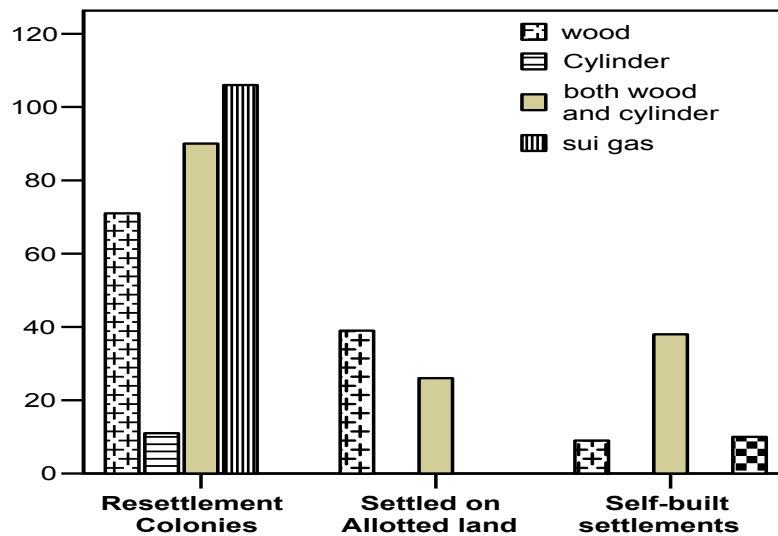
About three fourth of the surveyed households, precisely 71.1 %, were using wood and cylinder as cooking fuel in their houses while 26.5 % were using sui gas for this purpose. The consumers of the gas were the residents of only one settlement, i.e. Khalabat Township. Settlement-wise detail of percentage and number of housing units by source of cooking fuel is given in and table 4.11 and figure 4.8.

Table 4.11 Tarbela Dam Affectees, Source of cooking fuel by sample category

Settlement category		Cooking fuel					Total
		Wood	Cylinder	both wood & cylinder	sui gas	wood & dungbel	
Resettlement Colonies	Count %	71 25.5%	11 4.0%	90 32.4%	106 38.1%	0 .0%	278 100.0%
Settled on Allotted land	Count %	39 60.0%	0 .0%	26 40.0%	0 .0%	0 .0%	65 100.0%
Self-built settlements	Count %	9 15.8%	0 .0%	38 66.7%	0 .0%	10 17.5%	57 100.0%
Total	Count %	119 29.8%	11 2.8%	154 38.5%	106 26.5%	10 2.5%	400 100.0%

(Source: Field Survey 2009)

Figure 4.8 Source of cooking fuel by sample category



4.1.2.10. Garbage disposal system

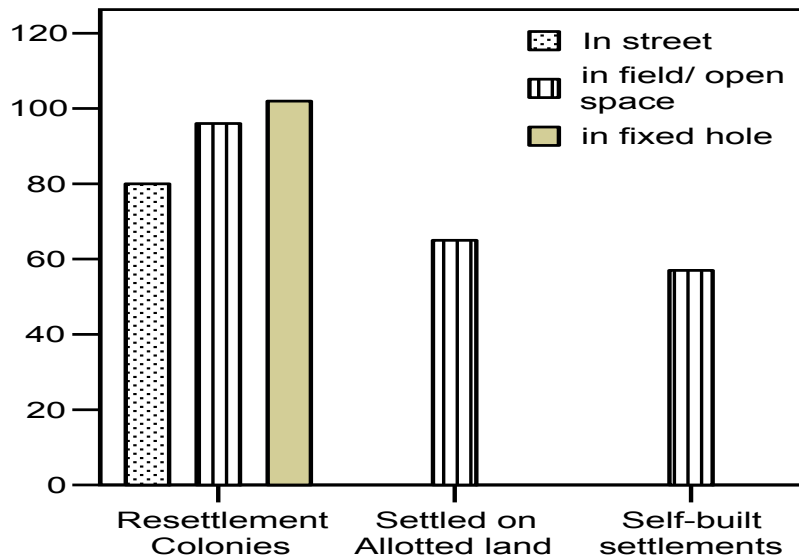
In the sample households more than half of the surveyed population (54.5 %) were using field or open space for disposing off Garbage of their houses while 20.0 % have no proper place and were throwing it in the streets. Only 25.5 % responded that they have fixed holes for garbage disposal. Its detail is given in table 4.12 and figure 4.9. Settlement-wise detail is shown by figure 4.10.

Table 4.12. Tarbela Dam Affectees, Garbage disposal system by sample category

Settlement Category		Garbage disposal			Total
		In street	in field/ open space	in fixed hole	
Resettlement Colonies	Count	80	96	102	278
	%	28.8%	34.5%	36.7%	100.0%
Settled on Allotted land	Count	0	65	0	65
	%	.0%	100.0%	.0%	100.0%
Self-built settlements	Count	0	57	0	57
	%	.0%	100.0%	.0%	100.0%
Total	Count	80	218	102	400
	%	20.0%	54.5%	25.5%	100.0%

(Source: Field Survey 2009)

Figure 4.9. Garbage disposal system by sample category



4.1.2.11. Drainage system

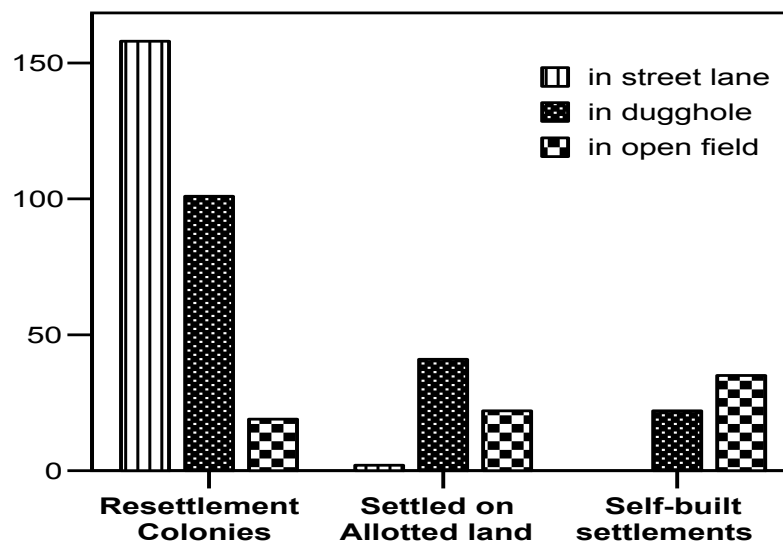
In sample settlements 40.0 % households were using streets lanes for drainage system whereas 19.0 % were using open fields for drainage purposes. Remaining 41.0 % had dug holes for this purpose. Village-wise detail of drainage system in sample settlements is given in table 4.13 and figure 4.11 while settlement-wise details are shown on figure 4.12.

Table 4.13. Tarbela Dam Affectees, Drainage system by sample category

Settlement category		Drainage system			Total
		in street lane	in dug hole	in open field	
Resettlement Colonies	Count %	158 39.5%	101 25.3%	19 4.8%	278 69.5%
Settled on Allotted land	Count %	2 .5%	41 10.3%	22 5.5%	65 16.3%
Self-built settlements	Count %	0 .0%	22 5.5%	35 8.8%	57 14.3%
Total	Count %	160 40.0%	164 41.0%	76 19.0%	400 100.0%

(Source: Field Survey 2009)

Figure 4.11. Drainage system by sample category



4.1.2.12. Residential plots

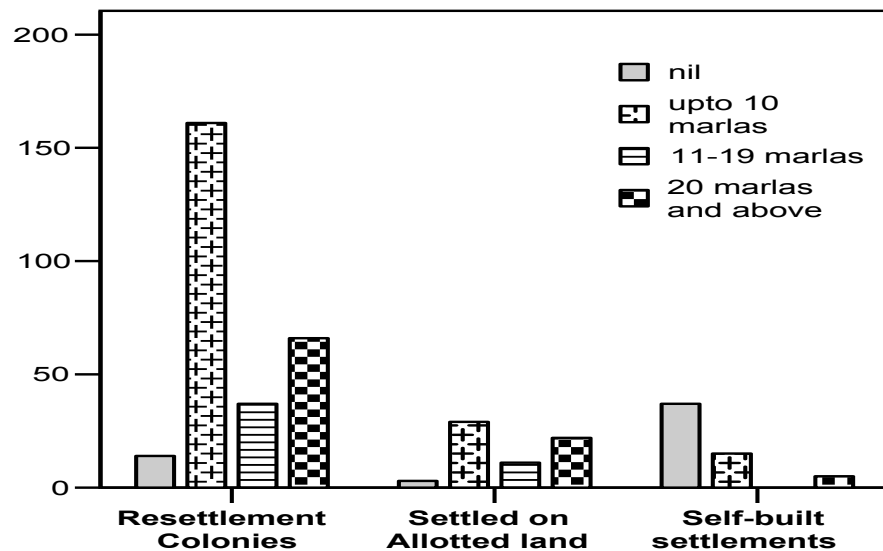
According to filed data more than half (51.3%) respondents were allotted residential plots below 10 Marlas. Only 12.0 % of them were allotted between 11-19 Marlas while 23.3 % had residential plot of 20 Marlas and above 20 Marlas. Table 4.14 and figure 4.13 give detail of the size of residential plot which was allotted to the affectees. Its village-wise status is highlighted in figure 4.14.

Table 4.14. Tarbela Dam Affectees, Residential plots allotted by sample category

Settlement category		Residential plot allotted				Total
		nil	upto 10 marlas	11-19 marlas	20 marlas & above	
Resettlement Colonies	Count	14	161	37	66	278
	%	3.5%	40.3%	9.3%	16.5%	69.5%
Settled on Allotted land	Count	3	29	11	22	65
	%	.8%	7.3%	2.8%	5.5%	16.3%
Self-built settlements	Count	37	15	0	5	57
	%	9.3%	3.8%	.0%	1.3%	14.3%
Total		Count	54	205	48	93
		%	13.5%	51.3%	12.0%	23.3%
						100.0%

(Source: Field Survey 2009)

Figure 4.13. Residential plots allotted by sample category



4.1.2.13. Land tenure system on allotted land

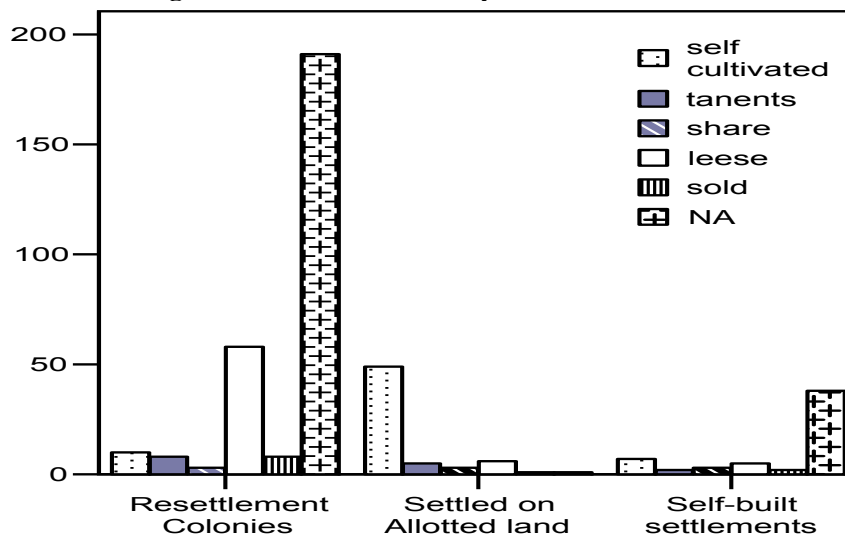
Land tenure system is expressed in table 4.15 that shows that 16.5% respondents were owner occupied and practicing self-cultivation on the allotted land. 3.8% have tenants and 2.2% have given their land on share to the other formers. 17.3 % have given their land on lease while 2.7% respondents have sold/disposed off their lands due to various reasons e.g. low quality of allotted land, difficulties in getting possession of land and tension with local landlords. Figure 4.15 further explains the situation in sample categories.

Table 4.15. Land tenure system on allotted land by sample category

Settlement Category		Land tenure system						Total
		self cultivated	tenants	share	lease	sold	NA	
Resettlement Colonies	Count	10	8	3	58	8	191	278
	%	3.6%	2.9%	1.1%	20.9%	2.9%	68.7%	100.0%
Settled on Allotted land	Count	49	5	3	6	1	1	65
	%	75.4%	7.7%	4.6%	9.2%	1.5%	1.5%	100.0%
Self-built settlements	Count	7	2	3	5	2	38	57
	%	12.3%	3.5%	5.3%	8.8%	3.5%	66.7%	100.0%
Total	Count	66	15	9	69	11	230	400
	%	16.5%	3.8%	2.3%	17.3%	2.8%	57.5%	100.0%

(Source: Field Survey 2009)

Figure 4.15. Land tenure system on allotted land



4.2. Land Allotment Policy

A high level meeting was held on 3rd May 1967 under the chairmanship of the then President of Pakistan Field Marshal Mohammad Ayub Khan that approved 13-point plan/agenda for the resettlement of Tarbela Dam affectees (Annexure B) Its point VII states *“the owners of agricultural land possessing a minimum of half acre (4 Kanals) of irrigated land or two acres (16 Kanals) of barani land under cultivation in the affected area should be given the option to purchase agricultural lands in the old Colonies of Punjab and Barrage areas of Sindh: (a) The minimum area to be offered will not be less than 12.5 acres (100 Kanals) in Colony areas and 16 acres (128 Kanals) in Barrage areas depending on the quality of the land. (b) In Colony areas maximum of 50 acres (400 Kanals) will be offered while in Barrage areas there should be no size restriction”*. Point XII of the agenda states *“village sites should be developed along the Periphery of the reservoir and elsewhere in Hazara in consultation with the affected people. Road access and Power supply should be ensured in these newly developed areas. Plots should be sold to affectees willing to establish their new homes in these areas”*

It was decided that those who had a minimum of 0.2 ha of irrigated and/or 0.8 ha of non-irrigated land would be eligible for alternate land. In Punjab, each eligible affectee would receive a minimum of 5 ha and a maximum of 20 ha of land. In Sindh the minimum was set at 6.5 ha, but affectees were given the option of purchasing more land. Both Punjab and Sindh governments were to commit 30,000 acres (12000 ha) each for the resettlement of Tarbela Dam affectees. While Punjab handed over all of this land, the Sindh government continues to withhold remaining 7823 ha of alternate land it was supposed to provide. As a result, a sizeable number of affectees have been unable to claim alternate lands in Sindh, which has severely disturbed the resettlement process.

Allotment of alternate land was done on a slip (Annexure “C”) that was issued to the displaced persons containing the necessary information and verification. To receive an allotment receipt, the affectees would have to be declared eligible for alternate land by the allotment committee. Allotment slip would then be presented to the Assistant Colonization Officer in the resettlement area either in Punjab or Sindh. Affectees displaced first were provided alternate land in the Punjab. First of all the affectees

belonging to the working area were displaced which were mostly resettled in Toba Tek Singh district. At the next stage they were resettled in other Districts of Punjab. While those displaced at last phase were given option to obtain land in Sindh. The payment schedule for alternate land was based on twenty years with 4% interest. The rate per acre for alternate land was Rs.700 (Rs.1729 per ha) in Sindh. The announcement of awards was completed in 1967 while payment was made in 1974. Over this period Pakistan currency was devalued twice. Consequently the affectees were unable to purchase alternate land with the cash compensation received from the government.

4.2.1. Pre - Project Land Ownership Status

Before dislocation the people of the area were occupied mainly in agriculture and agriculture related activities. Agricultural products were major source of all kinds of trade and even artesian and labours receive their payments in the form of grains at the end of each cropping season. In order to explore their pre-project land ownership status the affectees were asked the question about the size of land holding which they had possessed. To assess the situation more clearly the information was acquired about the three categories of land, i.e. irrigated land, barani (rain fed) land and non-agricultural land. Detail about each individual category is given in following paragraphs.

4.2.1.1 Ownership of irrigated land before the Project

Field data shows that, out of the total 400 respondents, nearly two fifth (39.3%) reported that they had no irrigated land before the project. In so far as the settlement category is concerned the corresponding figure was highest (52.6%) for self-built settlements followed by resettlement colonies where 42.8% respondents had no irrigated land. This figure was very low (12.3%) in settlements on allotted land. Remaining 243 (60.7%) respondents stated that they possessed irrigated land before the project. However their land holding size was small in majority of the cases. Among them 22% land owner had land holding below 0.5 Acres while nearly same number of respondents (22.3%) had irrigated land between 0.5 to 1.0 Acres. The figure for land owners having 1 - 2.5 Acres was 8.3% while same percentage was noted for land owners having 2.5 – 5.0 Acres of irrigated land. Project area is a mountainous area where the proportion of irrigated land

holding was very small. Therefore, majority of the affectees (61.3%) did not qualify for land allotment. In the settlement category the corresponding proportion was highest (68%) for resettlement colonies followed by 65% in self-built settlements. However, the ratio of affectees was small (29.2%) for category “settled on allotted land” who did not qualify the criterion for land allotment as shown in table 4.16.

Table 4.16 Tarbela Dam Affectees, Ownership of irrigated land before the Project

Ownership of irrigated land		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Irrigated landless people	Count %	119 42.8%	8 12.3%	30 52.6%	157 39.3
Below 0.5 Acres	Count %	70 25.2%	11 16.9%	7 12.3%	88 22.0
0.5 - 1.0 Acres	Count %	42 15.1%	29 44.6%	18 31.6%	89 22.3
1- 2.5 Acres	Count %	19 6.8%	12 18.5%	2 3.5%	33 8.3
2.5- 5.0 Acres	Count %	28 10.1%	5 7.7%	0 0.0	33 8.3
Total	Count %	278 100.0%	65 100.0%	57 100.0%	400 100.0%

Source: Field Survey 2009)

4.2.1.2. Ownership of Barani (rain fed) land before the Project

Field data shows that, out of the total 400 respondents, nearly one third (33%) stated that they had no barani land before the project. In the settlement category the corresponding figure was highest (41.4%) for resettlement colonies followed by self-built settlements where 26.3% respondents had no barani land. For settlements on allotted land the figure was negligible (3%) as shown in table 4.2. Remaining 268 (67%) respondents stated that they had ownership of barani land before the project. However their land holding size was small and nearly half of them (132) had land holding below 2.0 Acres while 21.3% of them had land between 2.0 – 6.0 Acres. Settlement category-wise detail of irrigated land holding is given below in table 4.17.

Table 4.17 Tarbela Dam Affectees, Ownership of Barani land before the Project

Ownership of Barani land		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Barani landless people	Count %	115 41.4%	2 3.0%	15 26.3%	132 33.0%
Below 2.0 Acres	Count %	82 29.5%	28 43.1%	22 38.6%	132 33.0%
2.0- 6.0 Acres	Count %	48 17.3%	21 32.3%	16 28.0%	85 21.3%
6.1- 12.0 Acres	Count %	21 7.5%	10 15.4%	4 7.1%	35 8.8%
Above 12 Acres	Count %	12 4.3%	4 6.1%	0 .0%	16 4.0%
Total	Count %	278 100.0%	65 100.0%	57 100.0%	400 100.0%

(Source: Field Survey 2009)

4.2.1.3. Ownership of non-agricultural land before the Project

According to the survey result, more than half (51.3%) respondents had no non-agricultural land before the project. In the settlement category the corresponding figure was highest (64.7%) for resettlement colonies followed by self-built settlements where 24.6% respondents had no non-agricultural land. For settlements on allotted land that figure was 17%. Remaining 195 (48.7%) respondents stated that they had ownership of non-agricultural land before the project. Settlement category-wise detail of irrigated land holding is given below in table 4.18.

Table 4.18 Tarbela Dam Affectees, Pre-Dam Ownership of Nonagricultural land

Ownership of Nonagricultural land		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Nonagricultural landless people	Count %	180 64.7%	11 17.0%	14 24.6%	205 51.3%
Below 2.0 Acres	Count %	36 13.0%	5 7.7%	10 17.5%	51 12.8%
2.0- 6.0 Acres	Count %	22 7.9%	20 30.8%	11 19.3%	53 13.3%
6.1- 12.0 Acres	Count %	7 2.5%	14 21.5%	13 22.8%	34 8.5%
Above 12 Acres	Count %	33 11.9%	15 23.1%	9 15.8%	57 14.3%
Total	Count %	278 100.0%	65 100.0%	57 100.0%	400 100.0%

(Source: Field Survey 2009)

4.2.2.0. Land acquired during the project

In order to find out the details about the land acquired by the project the information was acquired about the three categories of land, i.e. irrigated land, barani (rain fed) land and non-agricultural land. Detail about each individual category is given in following paragraphs.

4.2.2.1. Irrigated land acquired

The findings of the field data show that the figures are same like table 4.16, indicating that irrigated land was acquired from the land owners by the project. Table 4.19 shows the detail of irrigated land acquired by the project.

Table 4.19. Tarbela Dam Affectees, irrigated land acquired by the Project

Irrigated land acquired		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
No irrigated land acquired	Count %	119 42.8%	8 12.3%	30 52.6%	157 39.3%
Below 0.5 Acres acquired	Count %	70 25.2%	11 16.9%	7 12.3%	88 22.0%
0.5 - 1.0 Acres acquired	Count %	42 15.1%	29 44.6%	18 31.6%	89 22.3%
1- 2.5 Acres acquired	Count %	19 6.8%	12 18.5%	2 3.5%	33 8.3%
2.5- 5.0 Acres acquired	Count %	28 10.1%	5 7.7%	0 0.0	33 8.3%
Total	Count %	278 100.0%	65 100.0%	57 100.0%	400 100.0%

(Source: Field Survey, 2009)

4.2.2.2. Barani land acquired

According to the statements of the respondents all the Barani agricultural land, which they possess, was not acquired by the authority. The ratio of land owners having land holding size above 12 Acres was 7.7 % while the land acquired from same category was 6.4 %. Table 4.20 gives category-wise detail of the land acquired by the project.

Table 4.20. Tarbela Dam Affectees, Barani land acquired by the Project

Barani land acquired		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
No barani land acquired	Count	119	6	15	140
	%	42.8%	9.2%	26.3%	35.0%
Below 2.0 Acres acquired	Count	86	27	22	135
	%	30.9%	41.5%	38.6%	33.8%
2.0- 6.0 Acres acquired	Count	49	21	16	86
	%	17.6%	32.3%	28.1%	21.5%
6.1- 12.0 Acres acquired	Count	17	7	4	28
	%	6.1%	10.8%	7.0%	7.0%
Above 12 Acres acquired	Count	7	4	0	11
	%	2.5%	6.2%	.0%	2.8%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey, 2009)

4.2.2.3. Non- agricultural land acquired by the project

According to the statements of the respondents all of the non- agricultural land under their possession was not acquired by the authority. Below 2.0 acres land was acquired from 15.5 % respondents, while the ratio of land owners was 12.3 % from whom more than 12 acres land was acquired. The proportion of other land holding categories is given below in table 4.21.

Table 4.21. Tarbela Dam Affectees, Non-agricultural land acquired by the Project

Nonagricultural land acquired		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Nil	Count	185	16	13	214
	%	66.5%	24.6%	22.8%	53.5%
Below 2.0 Acres	Count	39	13	10	62
	%	14.0%	20.0%	17.5%	15.5%
2.0- 6.0 Acres	Count	19	15	12	46
	%	6.8%	23.1%	21.1%	11.5%
6.1- 12.0 Acres	Count	7	9	13	29
	%	2.5%	13.8%	22.8%	7.3%
Above 12 Acres	Count	28	12	9	49
	%	10.1%	18.5%	15.8%	12.3%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

4.2.3. Land Allotment Criteria

According to the record of WAPDA Revenue Office at Tarbela Dam the total numbers of families affected by the project were 23,000, of which only 5317 families (23 %) could qualify for alternate land on the basis of set criteria which shows an overwhelming majority of affectees could not qualify for allotment of land due to unjust allotment criteria. Both Punjab and Sindh governments were to commit 30,000 acres (12000 ha) each for the resettlement of Tarbela Dam affectees. Punjab Province has provided 30,000 acres of land and 2,400 (45%) families have been settled there, whereas the Sindh Province has provided only 10,667 acres of land where only 667 (12.5%) families were allotted land. Remaining families (1301) are still waiting for allotment of the balance 19,333 acres land yet to be allocated by the Sindh Government. Punjab handed over all of this land whereas the Sindh government continues to withhold 19333 acres of alternate land it was supposed to provide. As a result, a sizeable number of affectees have been unable to acquire alternate lands in Sindh, which has severely disturbed the process. From the affected families only 3067 (57.6%) could get allotted land. Twenty four hundred affectees were allotted lands in different parts of Punjab including Toba Tek Singh, Faisalabad, Multan, Lodhran, Jhang and Khaniwal Districts.

4.2.3.1. Satisfaction level from land allotment criteria

Due to aforesaid issues the affectees were not satisfied with the criteria adopted for the allotment of alternate land in Punjab and Sindh provinces. During the field survey it was found that majority of the affectees were not agreed with the criteria adopted for land allotment to them. As shown in table 4.22, three fourth (74.7 %) of the total affectees were not satisfied from land allotment policy. The proportion of dissatisfied affectees was more in resettlement colonies and self-built settlements with respective figures of 78% and 77.2%. One of the reasons for self-built settlements was due to the negligence of the government authorities for making arrangement for their settlement. They were left with no choice but to make arrangement for themselves as they were not fulfilling land allotment criteria. Remaining one fourth (25.3 %) of them were agreed with land

allotment policy as they responded in the favour of it. (Settlement-wise detail is shown on figure 4.16).

Affectees' level of agreement regarding the land allotment criteria is shown in table 4.23. Out of total agreed (25.3 %), only 1.2 % respondents stated that they were fully agreed with the criteria set for affectees to declare them eligible or otherwise for allotment of the land. 24 % of them were agreed with the criteria only to some extent. Out of 74.7 % disagreed respondents, 62 % were simply disagreed while 12.8 % were strongly against the policy and showed their great concern over it. Some of the affectees were not satisfied with the criteria for compensation and filed court cases against the government. Based on WAPDA figures, that were verified through the commission formed to sort out the affectees' claims, there were 38 cases still pending.

Table 4.22 Tarbela Dam Affectees, Agreed with land allotment criteria

Agreed with land allotment criteria		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Yes	Count	61	27	13	101
	%	22.0%	41.5%	22.8%	25.3%
No	Count	217	38	44	299
	%	78.0%	58.5%	77.2%	74.8%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Table 4.23 Tarbela Dam Affectees, Level of agreement with land allotment criteria

Agreed with land allotment criteria	Settlement category			Total	
	Resettlement Colonies	Settled on Allotted land	Self-built settlements	No.	%
Strongly agreed	5	0	0	5	1.2%
To some extent agreed	56	27	13	96	24%
Disagreed	180	38	30	248	62%
Strongly disagreed	37	0	14	51	12.8%
Total	278	65	65	400	100%

(Source: Field Survey 2009)

4.2.3.2. Qualify the eligibility criteria

Field data shows that nearly half of the affected population (46.3 %) could not qualify for allotment of substitute agricultural land. Remaining 53.8 % reported that the alternative land was allotted to them as a compensation of their affected land as shown in table 4.24. Settlement-wise detail is shown on figure 4.17.

Table 4.24. Tarbela Dam Affectees, Qualified for alternate land

Qualified the Land allotment criteria		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Yes	Count	132	64	19	215
	%	47.5%	98.5%	33.3%	53.8%
No	Count	146	1	38	185
	%	52.5%	1.5%	66.7%	46.3%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

In present study Chi-Square test have been applied to find out statistical significance of the relationship ($p \leq 01$ indicate significant relationship). Phi, Cramer's V and Pearson Correlation tests are used to find out strength of association /relation between two variables (+1.0, a perfect positive association, through 0.0, no relationship to -1.0, a perfect negative relationship).

Correlation test was applied to know the relationship of independent variable 'Qualified for allotment' with the dependent variable 'Agreed with land allotment criteria'. Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 4.26). Thus we can reject the null hypothesis of no association between these variables. Table 4.27 shows that a strong association (**.510**) exists between the variables qualified for allotment and agreed with land allotment criteria. The association is positive which means that, as the qualification for land allotment increases the degree of satisfaction also increases, in same sequence.

Table 4.25. Cross tabulation -Qualified for allotment & agreed with land allotment criteria

Qualified for allotment		Agreed with land allotment criteria		Total
		Yes	No	
Yes	Count	101	125	226
	% within criteria	100.0%	41.8%	56.5%
	% of Total	25.3%	31.3%	56.5%
No	Count	0	174	174
	% within criteria	.0%	58.2%	43.5%
	% of Total	.0%	43.5%	43.5%
Total	Count	101	299	400
	% within criteria	100.0%	100.0%	100.0%
	% of Total	25.3%	74.8%	100.0%

(Source: Field Survey 2009)

Table 4.26. Tarbela Dam Affectees, Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	104.028	1	.000
Continuity Correction(a)	101.674	1	.000
Likelihood Ratio	141.303	1	.000
Fisher's Exact Test			
Linear-by-Linear Association	103.768	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 4.27. Tarbela Dam Affectees, Correlation Measures

		Value	Asymp. Std. Error (a)	Approx. T (b)	Approx. Sig.
Nominal by Nominal	Phi	.510			.000
	Cramer's V	.510			.000
Ordinal by Ordinal	Kendall's tau-b	.510	.027	13.306	.000
	Spearman Correlation	.510	.027	11.827	.000
N of Valid Cases		400			

(Source: Field Survey 2009)

4.2.3.3. Whether land was allotted

When the respondents were asked whether they were allotted the substitute land or not, 53.8 % respondents answered this question in affirmative. Category-wise corresponding figures were: resettlement colonies 47.5 %, settled on allotted land 98.5 % and self-built settlements 33.3 %. Its detail is given in table 4.28.

Table 4.28. Tarbela Dam Affectees, Whether Land was allotted

	Settlement Category	Total
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Land was allotted		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Yes	Count	132	64	19	215
	%	47.5%	98.5%	33.3%	53.8%
No	Count	146	1	38	185
	%	52.5%	1.5%	66.7%	46.3%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

Overall analysis shows that these variables have direct relation with each other. Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 4.29). Thus we can reject the null hypothesis of no association between these variables. Table 4.30 shows that a strong positive association (.539) exists between the variables qualified for allotment and agreed with land allotment criteria.

Table 4.29. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	116.264(b)	1	.000
Continuity Correction(a)	113.788	1	.000
Likelihood Ratio	154.785	1	.000
Linear-by-Linear Association	115.973	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 4.30. Tarbela Dam Affectees, Symmetric Measures

	Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Nominal by Nominal	Phi	.539		.000
	Cramer's V	.539		.000
Ordinal by Ordinal	Kendall's tau-b	.539	13.728	.000
	Spearman Correlation	.539	12.770	.000
N of Valid Cases	400			

(Source: Field Survey 2009)

4.2.3.4. How much land allotted

To investigate how much land was allotted the respondents were asked a question in this regard. Out of total 215 eligible affectees, 200 (93.0%) of them were allotted 12.5 acres of land while only 7% of them were allotted land more than 12.5 acres. Its detail is given in table 4.31.

Table 4.31. Tarbela Dam Affectees, Details of allotted land

How much land allotted		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Nil	Count	146	1	38	185
	%	52.5%	1.5%	66.7%	46.3%
12.5 acres	Count	128	54	18	200
	%	46.0%	83.1%	31.6%	50.0%
25 acres	Count	4	8	1	13
	%	1.4%	12.3%	1.8%	3.3%
50 Acres	Count	0	2	0	2
	%	.0%	3.1%	.0%	.5%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Table 4.32 shows cross-tabulation between the variables how much land allotted and agreed with allotment criteria. Overall analysis shows that these variables have direct relation with each other. Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 4.33). Thus we can reject the null hypothesis of no association between these variables Table 4.34 shows that a strong association (**-.506**) exists between the variables qualified for allotment and agreed with land allotment criteria.

Table 4.32. Cross tabulation- How much land allotted & Agreed with allotment criteria

How much land allotted		Agreed with land allotment criteria		Total
		Yes	No	
Nil	Count	1	182	183
	%	1.0%	60.9%	45.8%

12.5 acres	Count %	94 93.1%	108 36.1%	202 50.5%
25 acres	Count %	6 5.9%	7 2.3%	13 3.3%
50 Acres	Count %	0 .0%	2 .7%	2 .5%
Total	Count %	101 25.3%	299 74.8%	400 100.0%

(Source: Field Survey 2009)

Table 4.33. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	111.340(a)	3	.000
Likelihood Ratio	142.633	3	.000
Linear-by-Linear Association	86.095	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 4.34. Tarbela Dam Affectees, Symmetric Measures

	Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Nominal by Nominal Phi	.528			.000
Cramer's V	.528			.000
Ordinal by Ordinal Kendall's tau-b	-.497	.032	-12.524	.000
Spearman Correlation	-.506	.032	-11.696	.000
N of Valid Cases	400			

(Source: Field Survey 2009)

4.2.4. Ineligible Affectees

Ineligible population categorises those who possessed either no land or less than the required minimum holdings (0.2 ha of irrigated or 0.8 ha of non-irrigated land), landless tenants, artisans and fishermen. The affectees challenged that criteria in the initial stages but it remained unchanged. According to the resettlement policies and procedures provided by the project it becomes clear that the decision regarding eligibility criteria was not re-considered because it had already been made under the authority of the President

of Pakistan. Anyhow, various measures were made to qualify maximum affectees for substitute land. New provisions were made for those who fell under the ceiling to increase their ratio of non-irrigated (*barani*) land to irrigated land (through dug wells). It was assumed that by putting part of their rain fed land under the category of irrigated land farmers with more than 0.2 hectare of non-irrigated land could become eligible for alternate land.

The eligibility criteria lacked the displacement rights for most of the affectees who were declared ineligible for alternate arrangement. Normally the focus in such cases lies on valuation of land, cash compensation or alternate lands to eligible affectees. No real attempt was made to integrate the ineligible affectees into new market and livelihood milieu. During the field visit it was found that the resettlement process adversely affected the livelihood of landless and ineligible affectees. The main reason was that the tenants and ineligible affectees had no technical knowhow to compete in the new semi-urban economy especially in the resettlement towns. So the male affectees of the area opted for unskilled labour and migrated to the foreign countries. Field data show that there were nearly one-fifth (17.3 %) of the sample households where one individual was serving in the foreign countries especially in the Middle East. There were 13 households (3.3 %) where two individuals were in foreign for earning livelihood. From one household three persons while five persons from another household were serving in the foreign countries. Its detail is given as under in table 4.35.

Table 4.35. Tarbela Dam Affectees, Male serving in foreign country

Male serving in foreign		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built Settlements	
No one	Count	224	40	52	316
	%	80.6%	61.5%	91.2%	79.0%
One person	Count	45	19	5	69
	%	16.2%	29.2%	8.8%	17.3%
2 persons	Count	9	4	0	13
	%	3.2%	6.2%	.0%	3.3%
3 persons	Count	0	1	0	1
	%	.0%	1.5%	.0%	.25%
5 persons	Count	0	1	0	1
	%	%	1.5%	.0%	.25%

Total	Count %	278 69.5%	.0% 16.3%	57 14.3%	.0% 100.0%
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(Source: Field Survey 2009)

4.2.5. Housing Problems

In the affected areas, displaced population faced two problems in provision of housing facilities to their families. The first being that their acquired homes were valued insufficiently ignoring the devaluation of rupees. So when they received compensation, that amount was insufficient for the construction of new houses, particularly for those affectees whose properties were evaluated before 1973, whereas 123% devaluation of the rupee occurred. No doubt, the eligible affectees had allotted agricultural land and residential plots either in Punjab or Sindh provinces, but the ineligible affectees were not given preference in the allotment of residential plots by the WAPDA authorities. Consequently, eligible affectees also purchased many of the residential plots in resettlement townships as they had the advance money to purchase plots from ineligible affectees. Thus the disparity still exists in the resettlement townships to accommodate the affected families. Though housing policy was one-affectee one allotment but there was no regularity in the provision of residential plots. The affectees who sold their plots out of plight still need housing and lodging facilities. A few managed to arrange housing on a joint family system and are leading precarious life with least hygienic arrangements. A number of affectees, especially members of a joint-owned home, still hold unprocessed residential allotment slips.

4.2.5.1. Size of allotted residential plots

According to filed data more than half (51.3%) respondents were allotted residential plots upto 10 Marlas. The ratio of those affectees was only 12 % who were allotted plots between 11-19 Marlas. Remaining 23.3 % respondents stated that they got plots of 20 Marlas or above than that. Another 13.5% of them replied that they did not allotted residential plot at all. Its detail is given in table 4.36.

Table 4.36. Tarbela Dam Affectees, Got residential plot

	Settlement Category	Total
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Got residential plot		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Nil	Count %	14 5.0%	3 4.6%	37 64.9%	54 13.5%
upto 10 marlas	Count %	161 57.9%	29 44.6%	15 26.3%	205 51.3%
11-19 marlas	Count %	37 13.3%	11 16.9%	0 .0%	48 12.0%
20 marlas and above	Count %	66 23.7%	22 33.8%	5 8.8%	93 23.3%
Total	Count %	278 69.5%	65 16.3%	57 14.3%	400 100.0%

(Source: Field Survey 2009)

Overall analysis shows that the variables, size of the allotted residential plot and agreed with land allotment criteria have direct relation with each other (table 4.37). Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables. Thus we can reject the null hypothesis of no association between these variables (4.38). Table 4.39 shows that a smaller than typical association (.245) exists between these variables. The association is negative which means that, as the size of the allotted residential plot increases the degree of dissatisfaction decreases.

Table 4.37. Tarbela Dam Affectees, Cross tabulation

Get residential plot		Agreed with land allotment criteria		Total
		yes	No	
nil	Count %	6 11.1%	48 88.9%	54 100.0%
upto 10 marlas	Count %	40 19.5%	165 80.5%	205 100.0%
11-19 marlas	Count %	17 35.4%	31 64.6%	48 100.0%
20 marlas and above	Count %	38 40.9%	55 59.1%	93 100.0%
Total	Count %	101 25.3%	299 74.8%	400 100.0%

(Source: Field Survey 2009)

Table 4.38. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.931(a)	3	.000
Likelihood Ratio	23.817	3	.000
Linear-by-Linear Association	23.216	1	.000

N of Valid Cases	400	
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(Source: Field Survey 2009)

Table 4.39. Tarbela Dam Affectees, Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.245	.000
	Cramer's V	.245	.000
Ordinal by Ordinal	Kendall's tau-b	-.225	.000
	Spearman Correlation	-.242	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

4.2.5.2. Resources used for new house construction

The results of the field data show that the majority of the affectees were unable to construct their houses on new plots by the money they got as a compensation of their acquired houses. Below one fifth (19.4 %) of them replied that they constructed their new houses by compensation money. more than one third (34.2 %) were of the view that they used their previous savings for this purpose. 28.1 % responded that they used both compensation money as well as their previous savings for the constructions of the houses. 8.8 % replied that they made very limited construction due to shortage of money. Views of the affectees are presented below in table 4.40.

Table 4.40. Tarbela Dam Affectees, resources used for construction of new house

How built new house		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlement	
By compensation money	Count	86	2	0	88
	%	30.9%	3.1%	.0%	22.0%
By loan	Count	27	7	2	36
	%	9.7%	10.8%	3.5%	9.0%
By previous savings	Count	60	31	41	132
	%	21.6%	47.7%	71.9%	33.0%
Built kacha house	Count	2	3	0	5
	%	.7%	4.6%	.0%	1.3%
Very limited construction	Count	24	4	5	33
	%	8.6%	6.2%	8.8%	8.3%
Both compensation & saving	Count	79	18	9	106
	%	28.4%	27.7%	15.8%	26.5%
Total	Count	278	65	57	400

%	100.0%	100.0%	100.0%	100.0%
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Source: Field Survey 2009)

4.2.5.3. Scope for expansion of townships

There was no planning for the future expansion of resettlement townships. During the Dam's construction phase, the colonies were built for the workers and employees of the project. Later on when the project was completed these colonies were handed over to WAPDA employees. These colonies were well planned and all basic amenities were provided at initial stage. A sizeable spare area was acquired around these colonies. There was proper arrangement for open places, parks, playgrounds, polo ground, rest house etc. On the other hand there was no such planning for residential colonies. Only plots were given to them without basic amenities. No spare land was acquired for future expansion of the colonies. At that time the area was not much costly but later on it values increased when these colonies were developed. Now land in the vicinity of these colonies is very costly as well as very limited. Moreover, agricultural land around these settlements is being used for residential purposes. With the passage of time the size of families grew and their houses were no longer sufficient to cope with the present time residential needs. During the field survey it was found that all the affectees (100 %) belonging to resettlement townships have showed great concern over the expansion of their settlements. They were of the view that no provisions were made for the future expansion of the townships. Their views are shown in the table 4.41.

Table 4.41. Tarbela Dam Affectees, Space for Town's expansion

Space for Town's expansion		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
No	Count	278	0	0	278
	%	100.0%	.0%	.0%	69.5%
NA	Count	0	65	57	122
	%	.0%	100.0%	100.0%	30.5%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

4.2.5.4. Land selection for Resettlement Townships

During the field visit it was found that majority of the affectees were not satisfied with land selected for the construction of new settlements. An overwhelming majority (63%) of the affectees stated that the land selected for their resettlement townships was barren and undeveloped. Nearly one fifth of them reported that the land was of normal quality while only a negligible ratio (3.5%) was satisfied with the quality of land (table 4.42).

Table 4.42. Tarbela Dam Affectees, Site selected for Colonies

Land selected for Colonies		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Developed Area	Count	14	0	0	14
	%	5.0%	.0%	.0%	3.5%
Normal	Count	74	2	0	76
	%	26.6%	3.1%	.0%	19.0%
Undeveloped Area	Count	190	62	0	252
	%	68.3%	95.4%	.0%	63.0%
NA	Count	0	1	57	58
	%	.0%	1.5%	100.0%	14.5%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

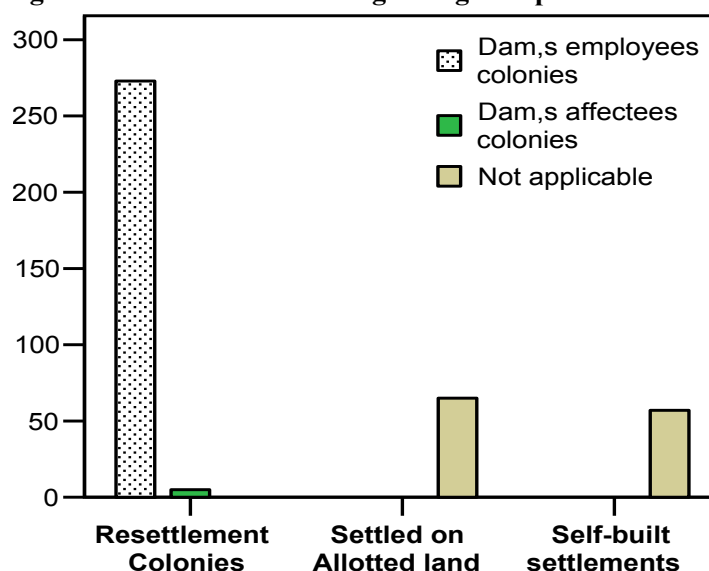
Residential colonies built for project employees were well planned and all basic amenities were provided at initial stage. A sizeable spare area was acquired around these colonies. On the other hand there was no proper planning for affectees' townships. Only plots were given to them without basic amenities. No spare land was acquired for future expansion of the colonies. In order to find out their view a question was asked in this regard during the field visit. 98.2% of the affectees belonging to resettlement townships stated that the colonies built for Dam's employees were well planned. Only 1.8% of them were of the view that the planning was best for colonies built for affectees. Table 4.43 and figure 4.18 presents clear picture of the affectee's views about this aspect.

Table 4.43 Tarbela Dam Affectees, Best planned colonies by WAPDA

Planning was best for		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Dam's employees Colonies	Count	273	0	0	273
	%	98.2%	.0%	.0%	68.3%
Dam's affectees Colonies	Count	5	0	0	5
	%	1.8%	.0%	.0%	1.3%
Not applicable	Count	0	65	57	122
	%	.0%	100.0%	100.0%	30.5%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

Figure 4.18. Affectees view regarding best planned colonies



Overall analysis shows that these variables, provision for future expansion of towns and planning was best for which colony, have direct relation with each other. Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables. Thus we can reject the null hypothesis of no association between these variables (4.45). Table 4.46 shows that a strong association (**.980**) exists between these variables. The association is positive which means that as the ratio of ‘no’ response to the space for town’s expansion increases the degree of dissatisfaction over the planning for Dam’s affectees colonies also increases.

Table 4.44. Cross tabulation, ‘best designed colonies’ and ‘Space for Town's expansion’

Planning was best for		Space for Town's expansion		Total
		No	NA	
Dam's employees colonies	Count	273	0	273
	%	98.2%	.0%	68.3%
Dam's affectees colonies	Count	5	0	5
	%	1.8%	.0%	1.3%
Not applicable	Count	0	122	122
	%	.0%	100.0%	30.5%
Total	Count	278	122	400
	%	69.5%	30.5%	100.0%

(Source: Field Survey 2009)

Table 4.45. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	400.000(a)	2	.000
Likelihood Ratio	492.033	2	.000
Linear-by-Linear Association	398.527	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 4.46. Tarbela Dam Affectees, Symmetric Measures

		Value	Asymp. Std. Error(a)	Approx. T(b)	Approx. Sig.
Nominal by Nominal	Cramer's V	1.000			.000
Ordinal by Ordinal	Kendall's tau-b	.980	.009	23.611	.000
	Spearman Correlation	.986	.006	119.285	.000
Interval by Interval	Pearson's R				
N of Valid Cases		400			

(Source: Field Survey 2009)

Field visits showed that the townships built around the reservoir were in a poor condition. There was lack of maintenance work and infrastructure development. According to WAPDA the maintenance and repair work of townships is the responsibility of Local Government and Rural Development Department (LG and RDD) while these institutions claim that it is responsibility of WAPDA.

4.2.5.5. Accommodation fulfill Present residential needs

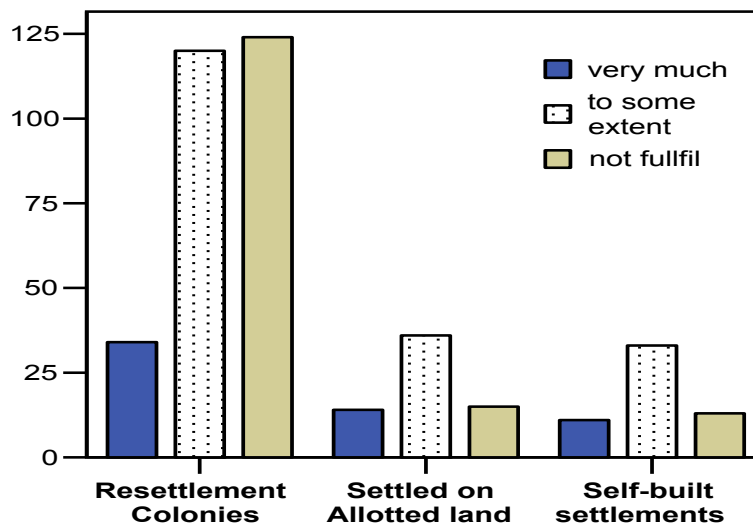
During the field survey it was found that majority of the affectees were not satisfied with the capacity of their present residences. From sample population only 14.8 % respondents were satisfied with the present accommodation stated that their houses were sufficient to fulfill the residential needs. Another 47.3 % of them were satisfied to some extent with the capacity of their present residences. Remaining 38 % respondent were of the view that their present abode was not sufficient for their residential requirements. The residents of resettlement townships have severe complaints about the shortage of space. Settlement-wise detail of the respondent's views on this issue is given in table 4.47 and figure 4.19.

Table 4.47 Tarbela Dam Affectees, Present house fulfill residential needs

Settlement Category		Present house fulfill residential needs			Total
		very much	to some extent	not fulfill	
Resettlement Colonies	Count	34	120	124	278
	%	12.2%	43.2%	44.6%	100.0%
Settled on Allotted land	Count	14	36	15	65
	%	21.5%	55.4%	23.1%	100.0%
Self-built settlements	Count	11	33	13	57
	%	19.3%	57.9%	22.8%	100.0%
Total	Count	59	189	152	400
	%	14.8%	47.3%	38.0%	100.0%

(Source: Field Survey 2009)

Figure 4.19 Present house fulfill residential needs



4.3 Summary and conclusion

In sample settlement, taken as a whole, an overwhelming majority of the respondents (78.5%) was literate. Out of them the ratio of under Matric was high (32.5%) followed by Matriculate with the ratio of 23.5%. Of the literate sample only 22% of the respondents had attained post-Matric education. For individual settlement categories, College and University education profile was highest in 'resettlement colonies' with a ratio of 27% followed by 'settlements on allotted land' and 'self-built settlements' with corresponding figures of 10.8% and 10.6% respectively.

In the study area majority of the respondents was mature with age group of 40-60 years making a ratio of 59.6% followed by old (above 60 years) with a ratio of 28.5%. Proportion of young respondents (below 40 years) was very low making a ratio of only 12%. Major occupation of the respondents of the sample settlements was private jobs and farming followed by government jobs and business. A considerable number of the respondents (6.5%) was serving in foreign countries earning foreign exchange for the country. Among the sample population majority of the population was young and mature comprising 60% of the total sample. While dependent population (< 16 and > 60) was 40%. Overall literacy ratio of the study area was 68.8% which was higher than national level (42%). In the sample settlement categories taken individually, the literacy ratio was highest in resettlement colonies and lowest in self built settlement.

In the study area there was joint family system where more than 3/4th of the sample household comprised of 4 to 9 family members. Similarly 47.8% household comprised of 2 rooms accommodation making an average household size of 7.4. In the settlement on allotted land average household size was highest (8.5) while lowest in self-built settlements. In the study area, taken as a whole, only 53.8% of the respondents qualified for alternate land on the basis of criteria set for land allotment. From resettled colonies more than half of the affectees were not qualified for substitute land while the corresponding figure was 33.3% for self-built settlement. Therefore nearly 3/4th of the respondents were not satisfied with land allotment criteria.

Results of the Chi-square test also indicate that there was significance relation between variables qualified for land allotment and satisfied with allotment criteria. Ineligible affectees were most affected section of the sample population because they were having no right for alternate land or residential plots. In the sample area majority of the respondents (58%) were allotted with residential plots only up to 10 Marla. With the passage of time these plots became insufficient to fulfill the residential needs of the sample population. Majority of household were overpopulated making an average household ratio of 7.8% which was higher than the national average.

CHAPTER 5

Inconsistency in Resettlement Planning and Value Assessment

5.0. Introduction

This chapter discusses the inconsistency and deficiencies in the implementation of resettlement policy and value assessment. The chapter is divided into three sections. Section one deals with the issues related to allotted land while section two focuses on finding out facts about value assessment and compensation of acquired property and its impact on the level of affectees satisfaction. In next section the issues regarding surplus land are discussed and analyzed

5.1.0. Issues related to allotted land

5.1.1. Possession of allotted land

Many of the affectees could not get possession of the allotted land. In Sindh almost all the affectees were unable to get hold of that land. Main factor affecting the provision of alternate land was the non-availability of alternate land in Sindh province. To provide the minimum 6.5 ha to each of these 2,197 affectees in Sindh, the size of alternate land would have to be increased from 7823 ha to 14,226 ha. The figures for outstanding claims continue to increase and more land is required to compensate all legitimate claimants. GBTI report (June 1999) reveals that out of total applications only 4.4% were found correct while 69% were incorrect and therefore rejected. Remaining 26% applications were listed but their record was not found in the documents provided by WAPDA. It is interesting to note that those applications rejected were due to wrong verification by Revenue Department. Representation of the affectees still not compensated, feels that the screening process often penalized genuine affectees even for minor clerical mistakes and thus the rules formulated were unfairly biased towards them. There was one unit system in Pakistan when resettlement policy was prepared and the consent of provincial government was presumed for allotment of alternate lands in various canal commands. However, after dissolution of one unit on 30 June 1970, the provincial government of Sindh refused to provide its balance share of 7823 ha land. WAPDA carried out a critical review in 1996 which indicates that the remaining land in

Sindh is far below what can meet the minimum existing demand of affectees. Implying that even if the remaining 7823 ha of land in Sindh were to be made available for the affectees, it would be insufficient.

Another factor, which very badly affected the land provision process in Sindh, was the lack of smooth possession of substitute land. The affectees who were allotted agricultural land in Sindh faced serious hostility from local landowners and farmers who actively jeopardized their agricultural potential in these areas. Local people were using these lands before the displaced persons arrived in Sindh. This was without tenurial agreements with the local government as they were squatting on this land. Despite being given legal title to the allotted land in Sindh, affectees often confronted with the threat of having their irrigation supply disrupted by local landlords who were deriving benefit from that land before the affectees. So they physically threatened the affectees who were attempting to cultivate allotted lands in Sindh. Local feudals were the land owners in Barrage areas of Sindh and entry of a small farmer from affected areas was obviously interference to their local socio-economic arena. Moreover, there were vast cultural differences between the local ethnic population and affectees resettled there.

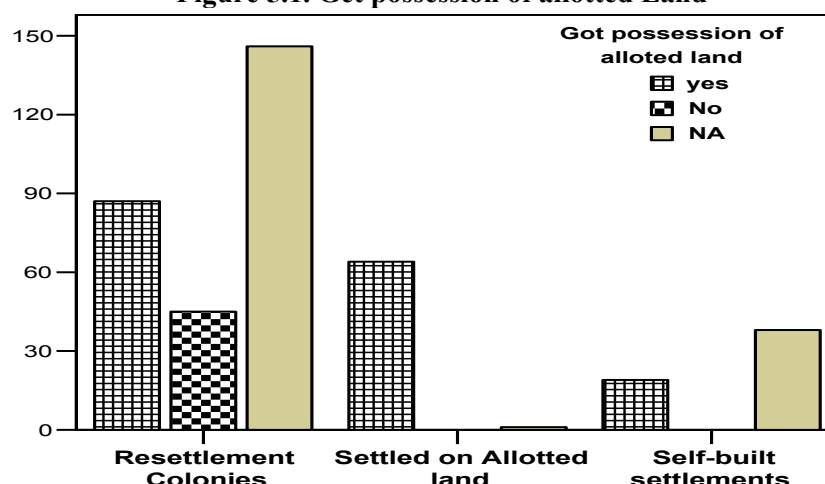
According to field data, 53.7 % of the total sample population was allotted substitute land in Punjab and Sindh. Out of which 42.5 % succeeded to get possession of that land whereas 11.3 % could not get possession of allotted land. From Sindh province only one respondent was able to get possession of allotted land. Category-wise detail regarding land possession is presented in table 5.1 and figure 5.1.

Table 5.1. Tarbela Dam Affectees, Get possession of allotted Land

Got possession of allotted Land		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Yes	Count %	87 31.3%	64 98.5%	19 33.3%	170 42.5%
No	Count %	45 16.2%	0 .0%	0 .0%	45 11.3%
NA	Count %	146 52.5%	1 1.5%	38 66.7%	185 46.3%
Total	Count %	278 100.0%	65 100.0%	57 100.0%	400 100.0%

(Source: Field Survey 2009)

Figure 5.1. Get possession of allotted Land



5.1.1.1. Association between variables ‘Agreed with allotment criteria’ and ‘got possession of allotted Land’

Correlation test was applied to find out the relationship of independent variable ‘Got possession of allotted land’ with the dependent variable ‘Land allotment criteria’. Cross tabulation of these variables is shown in table 5.2. Smaller P-value (.000) of Chi-square test indicates that there is a statistically significant relation between the two variables (Table 5.3). Thus we can reject the null hypothesis of no association between these variables. Table 5.4 shows that a strong association (.597) exists between the two variables. The association is positive which means that, as the ratio of the affectees who get possession of allotted land increases the degree of satisfaction with allotment criteria also increases, in same sequence.

Table 5.2. Cross tabulation - Got possession & agreed with land allotment criteria

Got possession of allotted land		Agreed with land allotment criteria		Total
		Yes	No	
Yes	Count	94	76	170
	% within criteria	93.1%	25.4%	42.5%
	% of Total	23.5%	19.0%	42.5%
No	Count	7	38	45
	% within criteria	6.9%	12.7%	11.3%
	% of Total	1.8%	9.5%	11.3%
NA	Count	0	185	185
	% within criteria	.0%	61.9%	46.3%
	% of Total	.0%	46.3%	46.3%
Total	Count	101	299	400
	% of Total	25.3%	74.8%	100.0%

(Source: Field Survey 2009)

Table 5.3. Tarbela Dam Affectees, Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	146.033(a)	2	.000
Likelihood Ratio	179.391	2	.000
Linear-by-Linear Association	125.568	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 5.4. Tarbela Dam Affectees, correlation Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.604	.000
Ordinal by Ordinal	Kendall's tau-b	.574	.000
	Spearman Correlation	.597	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

5.1.2. Quality of allotted land

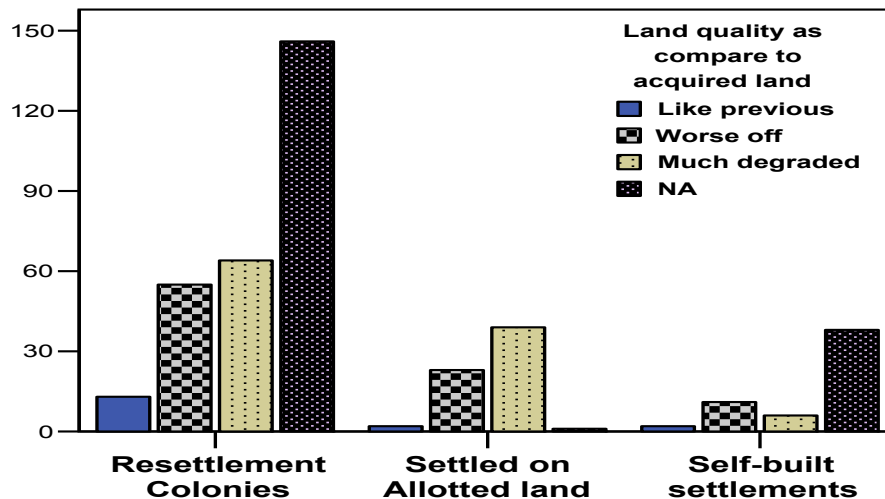
The land allotted to the affectees was uncultivated and rough. The result of the field findings show that majority of the respondents were not pleased with the quality of the land allotted to them. Out of 400 house holds, 215 (53.7%) were allotted land in Punjab and Sindh provinces. When affectees were asked to compare allotted land with the land that was acquired by the project, majority of them have severe reservations on the quality of land. Half of them responded that allotted land was of much low quality being banjar, water logged and saline. Only 4.2% respondents were of the view that the quality of the allotted land was same like their previous land as shown in table 5.5 and figure 5.2.

Table 5.5. Quality of allotted land as compared to acquired land

Land quality as compare to acquired land		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
same to previous	Count	13	2	2	17
	%	3.3%	.5%	.5%	4.3%
worse off	Count	55	23	11	89
	%	13.8%	5.8%	2.8%	22.3%
much degraded	Count	64	39	6	109
	%	16.0%	9.8%	1.5%	27.3%
NA	Count	146	1	38	185
	%	36.5%	.3%	9.5%	46.3%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

Figure 5.2. Land quality of allotted land with compare to affected land



5.1.2.1. Association between Land quality and agreed with land allotment criteria

Cross tabulation of these variables is shown in table 5.6. Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 5.7). Thus we can reject the null hypothesis of no association between these variables. Correlation test was applied to find out the relationship of independent variable 'Quality of allotted land' with the dependent variable 'Land allotment criteria'. Table 5.8 shows that a strong association (**.766**) exists between the two variables. The association is positive which means that, as the ratio of affectees being allotted degraded

category of allotted land increases the degree of dissatisfaction with allotment criteria also increases, in same sequence.

Table 5.6. Cross tabulation – Land quality & agreed with land allotment criteria

Land quality as compare to acquired land		Agreed with land allotment criteria		Total
		Yes	No	
as same as	Count	16	1	17
	%	4.0%	.3%	4.3%
worse off	Count	80	9	89
	%	20.0%	2.3%	22.3%
much degraded	Count	5	104	109
	%	1.3%	26.0%	27.3%
NA	Count	0	185	185
	%	.0%	46.3%	46.3%
Total	Count	101	299	400
	%	25.3%	74.8%	100.0%

(Source: Field Survey 2009)

Figure 5.3 Quality of allotted land and affectees agreed with allotment criteria

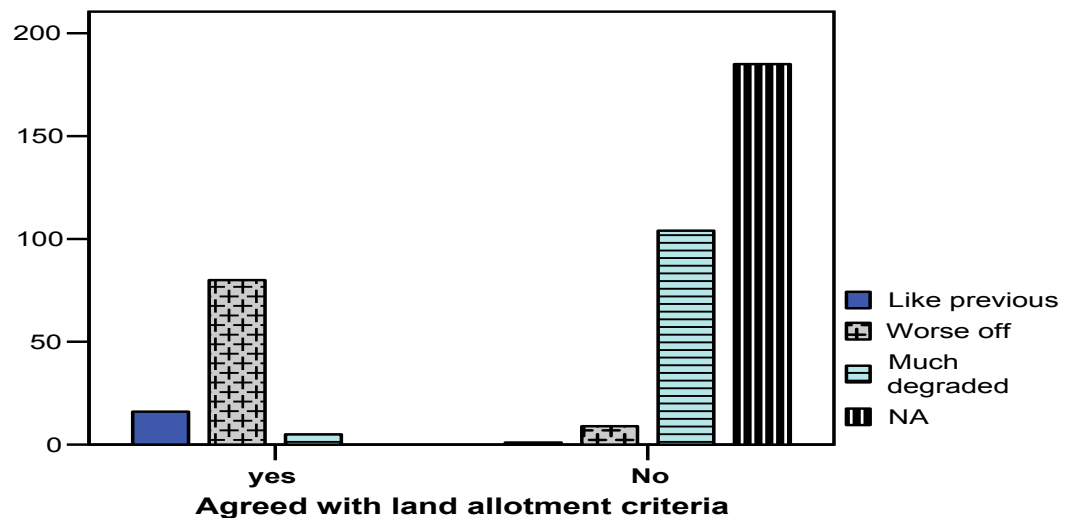


Table 5.7. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	326.876(a)	3	.000
Likelihood Ratio	345.556	3	.000
Linear-by-Linear Association	190.572	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 5.8. Tarbela Dam Affectees, correlation Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.904	.000
Ordinal by Ordinal	Kendall's tau-b	.718	.000
	Spearman Correlation	.766	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

5.1.3. Causes for no Allotment or possession

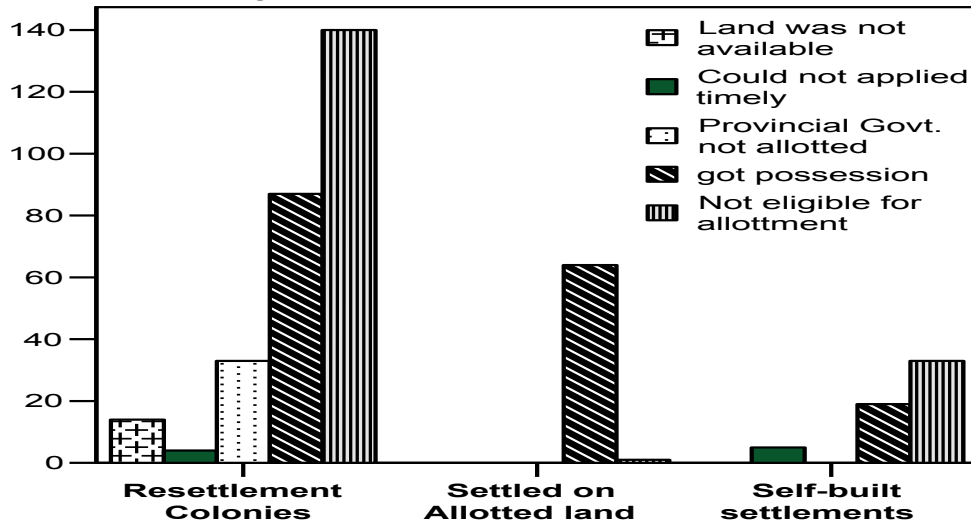
To know the main causes of no allotment or possession of allotted land, affectees were inquired in this regard. The resulting response to this question is summarized in Table 5.9. Field findings show that about 14% of the total respondents could not get the allotment / possession. Out of which 8.3% stated that Sindh Government did not allot the land. “Could not apply timely” was the response of 2.3% while another 3.5% of them were of the view that land was not available for allotment.

Table 5.9 Tarbela Dam Affectees, Reason for no Allotment or possession

Reason for no Allotment or possession		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlement	
Land was not available	Count	14	0	0	14
	%	5.0%	.0%	.0%	3.5%
Could not apply timely	Count	4	0	5	9
	%	1.4%	.0%	8.8%	2.3%
Sindh Govt. not allotted	Count	33	0	0	33
	%	11.9%	.0%	.0%	8.3%
got possession	Count	87	64	19	170
	%	31.3%	98.5%	33.3%	42.5%
Not eligible for allotment	Count	140	1	33	174
	%	50.4%	1.5%	57.9%	43.6%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Figure 5.4 Reasons for no land allotment



5.1.4. District where land was allotted

During the field survey it was found that out of total 400 respondents, 226 (56.5 %) were eligible affectees who were compensated with alternate agricultural land in different parts of Punjab and Sindh provinces. Remaining 174 (43.5 %) were non eligible affectees who could not qualify for alternate land. Out of the eligible affectees, an overwhelming majority (58 %) of them was allotted land in Toba Tek Singh District where 1000 Acres of land was allotted to the affectees. Next higher proportion of the affectees was in Jhang District where 13 % of the eligible affectees were allotted substitute land followed by Khaniwal District where 8.5 % of the eligible affectees were allotted land. In Sindh province only 35 respondents were allotted land making a ratio of 15.5 % of the eligible affectees. A complete detail in this regard is presented in Table 5.10 and figure 5.5.

Figure 5.5. District where land allotted

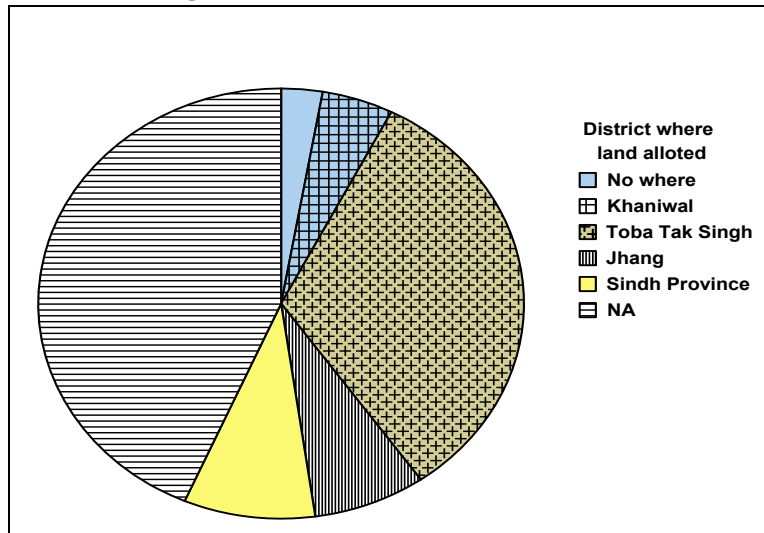


Table 5.10. Tarbela Dam Affectees, District where land allotted * Settlement Category

District where land allotted		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
No where	Count %	6 2.2%	0 .0%	5 8.8%	11 2.8%
Khaniwal	Count %	4 1.4%	0 .0%	15 26.3%	19 4.8%
Toba Tek Singh	Count %	64 23.0%	64 98.5%	3 5.3%	131 32.8%
Jhang	Count %	30 10.8%	0 .0%	0 .0%	30 7.5%
Sindh Province	Count %	34 12.2%	0 .0%	1 1.8%	35 8.8%
NA	Count %	140 50.4%	1 1.5%	33 57.9%	174 43.5%
Total	Count %	278 69.5%	65 16.3%	57 14.3%	400 100.0%

(Source: Field Survey 2009)

5.1.4.1. Association between District of allotment and quality of allotted Land

Overall analysis shows that the variables, District where land allotted and Land quality as compare to acquired land have direct relation with each other. Cross tabulation between these variables is shown below in table 5.11.

Table 5.11. Tarbela Dam Affectees, District of allotment and quality of allotted land

District where land allotted		Land quality as compare to acquired land				Total
		same	worse off	much degraded	NA	
No where	Count	0	0	0	11	11
	%	.0%	.0%	.0%	5.9%	2.8%
Khaniwal	Count	1	11	7	0	19
	%	5.9%	12.4%	6.4%	.0%	4.8%
Toba Tek Singh	Count	16	63	52	0	131
	%	94.1%	70.8%	47.7%	.0%	32.8%
Jhang	Count	0	9	21	0	30
	%	.0%	10.1%	19.3%	.0%	7.5%
Sindh Province	Count	0	6	29	0	35
	%	.0%	6.7%	26.6%	.0%	8.8%
NA	Count	0	0	0	174	174
	%	.0%	.0%	.0%	94.1%	43.5%
Total	Count	17	89	109	185	400
	%	4.2%	22.3%	27.2%	46.3%	100.0%

(Source: Field Survey 2009)

Smaller P-value (.000) of Chi-square test (Table 5.12) indicates that there is a statistically significant relationship between the two variables. Thus we can reject the null hypothesis of no association between these variables. Table 5.13 shows the strength of association or effect size between two variables. Large Phi, Kendall's tau-b and Spearman Correlation values indicate that strong association exists between these variables. The association is positive which means that as the distance from central district (Toba Tek Singh) increases, the complaint about quality of land also increases, in same sequence.

Table 5.12. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	147.568(a)	5	.000
Likelihood Ratio	180.450	5	.000
Linear-by-Linear Association	69.351	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 5.13. Tarbela Dam Affectees, correlation Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.607	.000
	Cramer's V	.607	.000
Ordinal by Ordinal	Spearman Correlation	.531	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

5.1.4.2. Association between District of allotment and got possession of allotted Land

Table 5.14 shows overall analysis of the variables ‘District where land allotted’ and ‘get possession of allotted land’. Smaller P-value (.000) of Chi-square test indicates that there is a statistical significant relationship between the two variables (5.15). Table 5.16 sows the strength of association / effect size between two variables. Large Phi, Kendall’s tau-b and Spearman Correlation values indicate that strong association exists between these variables. The association is positive which means that as the distance from central district increases, the problem of land possession also increases in same sequence.

Table 5.14. Tarbela Dam Affectees, District of allotment * Got possession of allotted land

District where land allotted		Got possession of allotted land			Total
		yes	No	NA	
No where	Count	0	0	11	11
	%	.0%	.0%	5.9%	2.8%
Khaniwal	Count	19	0	0	19
	%	11.2%	.0%	.0%	4.8%
Toba Tak Singh	Count	128	3	0	131
	%	75.3%	6.7%	.0%	32.8%
Jhang	Count	22	8	0	30
	%	12.9%	17.8%	.0%	7.5%
Sindh Province	Count	1	34	0	35
	%	.6%	75.6%	.0%	8.8%
NA	Count	0	0	174	174
	%	.0%	.0%	94.1%	43.5%
Total	Count	170	45	185	400
	%	42.5%	11.3%	46.3%	100.0%

(Source: Field Survey 2009)

Figure 5.6 District of allotment & possession of allotted land

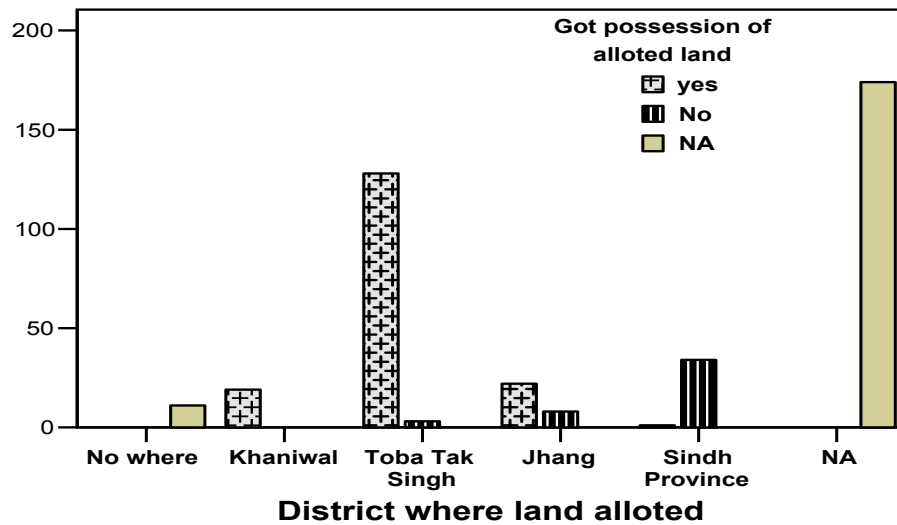


Table 5.15. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	690.174(a)	10	.000
Likelihood Ratio	700.402	10	.000
Linear-by-Linear Association	150.967	1	.000
N of Valid Cases	400		

Source: Field Survey 2009)

Table 5.16. Tarbela Dam Affectees, correlation Measures

		Value	Approx. Sig.
Nominal by Nominal	Cramer's V	.929	.000
Ordinal by Ordinal	Kendall's tau-b	.821	.000
	Spearman Correlation	.853	.000(c)
Interval by Interval	Pearson's R	.615	.000(c)
N of Valid Cases		400	

(Source: Field Survey 2009)

Paired Samples Correlation between variables related to allotted land and level of satisfaction of affectees with land allotment criteria is shown in table 5.17.

Table 5.17. Tarbela Dam Affectees, Paired Samples Correlations

Pairs		N	Correlation	Sig.
Pair 1	Got possession of allotted land & agreed with land allotment criteria	400	.561	.000
Pair 2	Land quality as compare to acquired land & Agreed with land allotment criteria	400	.691	.000
Pair 3	District where land allotted & agreed with land allotment criteria	400	.417	.000

(Source: Field Survey 2009)

5.2. Assessment of Compensation value

The issue of compensation awarded to affectees has been a major bone of contention of the displaced communities. Although successive governments established a series of commissions to resolve the problem, it still remains an outstanding issue. According to the field data, out of 400 respondents surveyed in 2009, 366 (91.5 %) respondents were not satisfied with compensation awarded to them. To them awarded compensation was less than market values. Assessment of the compensation was done on the basis of average value calculated from the revenue record of the last one year. To them, land sold in certain condition and land involuntarily acquired for developmental project is two different things. In normal condition nobody wants to sale his land. In case of any emergency need the owner sales the land or property even at low cost. In the study area it has remained common practice that less prices were written at the time of sale transaction in order to minimize the revenue and Government taxes.

5.2.1. Value of compensation

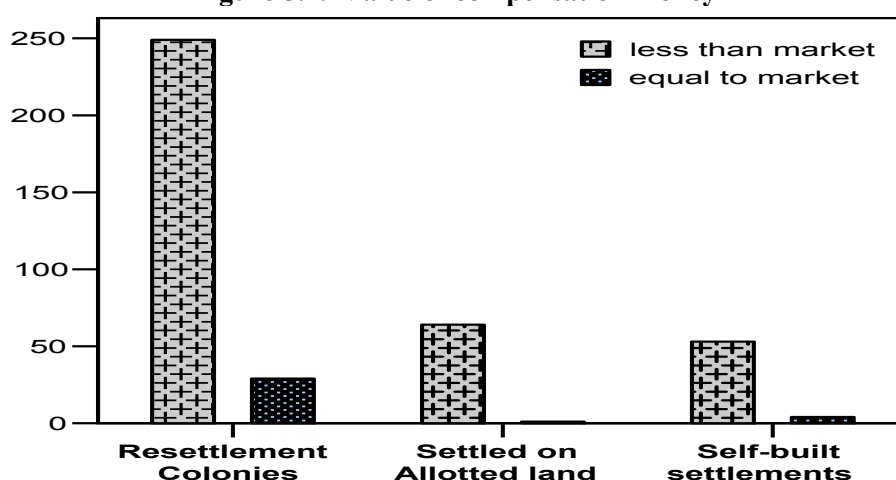
When asked about the value of compensation, 91.5 % of the respondents were of the view that the value they got as compensation of their land and property was less than the market value. Only 6.5 % of them replied that the value of compensation was equal to the then market. Category wise detail of the affectee's views is shown in table 5.18 and figure 5.7.

Table 5.18. Tarbela Dam Affectees, Value of compensation money

Value of compensation money		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
less than market	Count	249	64	53	366
	%	62.3%	16.0%	13.3%	91.5%
equal to market	Count	29	1	4	34
	%	7.3%	.3%	1.0%	8.5%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

Figure 5.7. Value of compensation money



Category-wise details show that the affectees settled on allotted land had great concern over the assessment of the values of their properties during the award. All of them, except one person, stated that the amount of compensation money was well below the market rates of that time. The corresponding ratio was 93.0 % for affectees settled in self-built settlements and 89.6 % for the affectees of resettlement colonies.

5.2.2. When got compensation

Field data shows that majority of the respondents had got their compensation money before evocating their areas. A little less than three fourth (72.0 %) of the respondents stated that they got compensation before their dislocation. Another 9.8 % got some compensation before the vocation and some after the vocation. Only 11.3 % replied that

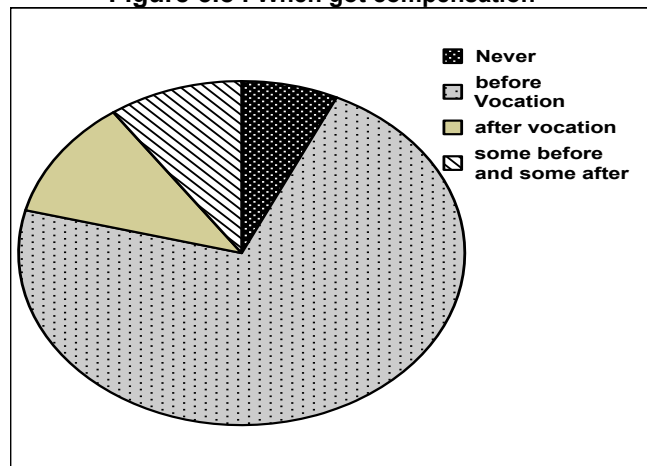
they could not get their compensation before vocation and got all the compensation money after their vocation. 7 % of the respondents stated that they did not receive any compensation at all. Category- wise details about the timing of compensation value are given in table 5.19 and figure 5.8.

Table 5.19 Tarbela Dam Affectees, When got compensation

When got compensation		Settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlement	
Never	Count	28	0	0	28
	%	10.1%	.0%	.0%	7.0%
Before vocation	Count	207	53	28	288
	%	74.5%	81.5%	49.1%	72.0%
After vocation	Count	30	4	11	45
	%	10.8%	6.2%	19.3%	11.3%
Some before & some after	Count	13	8	18	39
	%	4.6%	12.3%	31.6%	9.8%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

Source: Field Survey 2009)

Figure 5.8 . When got compensation



5.2.3. Value of compensation for new construction

In the affected area value of the houses was not properly assessed according to the wishes of the affected population. During the field survey when asked question in this regard, all of them replied that compensation money was not sufficient for the construction of house in the new areas. Only 8.5 % responded that the money was hardly sufficient for new construction. 38.2 % replied that the compensation money was in sufficient while 53.3 %

of them were of the view that it was very much in sufficient for the construction of substitute accommodation especially in Resettlement Towns. Village wise detail of the affectees' views is given in table 5.20.

Table 5.20. Tarbela Dam Affectees, Value of compensation for house construction

Compensation was sufficient for house construction		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
hardly sufficient	Count	22	5	6	33
	%	5.5%	1.3%	1.5%	8.3%
in sufficient	Count	92	24	31	147
	%	23.0%	6.0%	7.8%	36.8%
very much in sufficient	Count	164	36	20	220
	%	41.0%	9.0%	5.0%	55.0%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

5.2.4. Resources used for new house construction

The results of the field data show that the majority of the affectees were unable to construct their houses on new plots by the money they got as a compensation of their acquired houses as shown in table 5.21.

Table 5.21 Tarbela Dam Affectees, Resources used to built new house

How built new house		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlement	
by compensation money	Count	86	2	0	88
	%	97.7%	2.3%	.0%	100.0%
by loan	Count	27	7	2	36
	%	75.0%	19.4%	5.6%	100.0%
by previous savings	Count	60	31	41	132
	%	45.5%	23.5%	31.1%	100.0%
built kacha house	Count	2	3	0	5
	%	40.0%	60.0%	.0%	100.0%
very limited construction	Count	24	4	5	33
	%	72.7%	12.1%	15.2%	100.0%
by compensation & saving	Count	79	18	9	106
	%	74.5%	17.0%	8.5%	100.0%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

Below one fifth (19.4 %) of them replied that they constructed their new houses by compensation money. more then one third (34.2 %) were of the view that they used their previous savings for this purpose. 28.1 % responded that they used both compensation money as well as their previous savings for the constructions of the houses. 8.8 % replied that they made very limited construction due to shortage of money.

5.2.5. Satisfied with compensation

Due to these issues of the compensation, as mentioned in the previous paragraphs, the majority of the affectees were not satisfied with the compensation policy. To find out their view a question was asked in this regard. An overwhelming majority (91.5 %) of them were not satisfied with the policy adopted for award of compensation. To measure their degree of dissatisfaction the question was divided into satisfaction categories. Field results show that 28.3 % of the respondents were highly dissatisfied whereas 42.0 % were dissatisfied with the policy. Remaining 21.5 % of them were somewhat dissatisfied while only 8.5 % were satisfied with that policy. Settlement-wise details about the level of affectee's satisfaction are given in table 5.22.

Table 5.22. Tarbela Dam Affectees, Satisfied with compensation

Satisfied with compensation		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Satisfied	Count	28	1	5	34
	%	7.0%	.3%	1.3%	8.5%
Dissatisfied	Count	250	64	52	366
	%	62.5%	16.0%	13.0%	91.5%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

5.2.6. Satisfied with resettlement process

On consequence upon the above mentioned factors, the majority of the affectees were not satisfied with the process and procedure adopted for their resettlement. To find out their view a question was asked in this regard. Data analysis indicates that an overwhelming majority (92.3 %) of them were not satisfied with the policy adopted for their

resettlement. Only 7.8 % of them were satisfied with that process as shown in table 5.23 and figure 5.9.

Table 5.23. Tarbela Dam Affectees, Satisfied with resettlement process

Satisfied with resettlement process		settlement category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
yes	Count	28	0	3	31
	%	10.1%	.0%	5.2%	7.8%
No	Count	250	65	54	369
	%	89.9%	100.0%	94.8%	92.3%
Total	Count	278	65	57	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)



5.2.6.1. Association between variables- Satisfied with compensation and Satisfied with resettlement process

Correlation test is applied to find out the relationship of variable ‘Satisfied with compensation’ with ‘Satisfied with resettlement processes. Cross tabulation of these variables is shown in table 5.24.

Table 5.24. Correlation between Satisfied with resettlement process and Satisfied with compensation

Satisfied with resettlement process		Satisfied with compensation		Total
		satisfied	Dissatisfied	
yes	Count	17	14	31
	%	50.0%	3.8%	7.8%
No	Count	17	352	369
	%	50.0%	96.2%	92.3%
Total	Count	34	366	400
	%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 5.25). Thus we can reject the null hypothesis of no association between these variables. Table 5.26 shows that a medium to strong association (.482) exists between the two variables. The association is positive which means that, as the ratio of affectees 'satisfied with compensation' decreases their ratio 'Satisfied with resettlement processes' also decreases in same sequence.

Table 5.25. Tarbela Dam Affectees, Chi-Square Tests

Test	Value	Df	Exact Sig. (1-sided)
Pearson Chi-Square	92.778(b)	1	.000
Continuity Correction(a)	86.431	1	
Likelihood Ratio	52.125	1	
Fisher's Exact Test			
Linear-by-Linear Association	92.546	1	
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 5.26. Tarbela Dam Affectees, correlation

Correlation		Value	Approx. Sig.
Nominal by Nominal	Phi	.482	.000
Ordinal by Ordinal	Kendall's tau-b	.482	.000
	Spearman Correlation	.482	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

5.2.6.2. Association between variables- Satisfied with compensation and value of compensation money

Correlation test was applied to find out the relationship of variable ‘Satisfied with compensation’ with ‘value of compensation money’. Cross tabulation of these variables is shown in table 5.27.

Table 5.27. Tarbela Dam Affectees, Cross tabulation between Value of compensation and Satisfied with resettlement process

Value of compensation money		Satisfied with resettlement process		Total
		yes	No	
less than market	Count	2	364	366
	%	6.5%	98.6%	91.5%
equal to market	Count	29	5	34
	%	93.5%	1.4%	8.5%
Total	Count	31	369	400
	%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 5.28). Thus we can reject the null hypothesis of no association between these variables. Table 5.29 shows that a very strong association (-.884) exists between the two variables. The association is negative which means that, as the value of compensation decreases from market rates the level of affectee’s dissatisfaction increases in same sequence.

Table 5.28. Tarbela Dam Affectees, Chi-Square Tests

Test	Value	Df	Exact Sig. (1-sided)
Pearson Chi-Square	312.527(b)	1	.000
Continuity Correction(a)	300.785	1	
Likelihood Ratio	164.875	1	
Fisher's Exact Test			
Linear-by-Linear Association	311.746	1	
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 5.29. Tarbela Dam Affectees, correlation

		Value	Approx. Sig.
Nominal by Nominal	Phi	-.884	.000
Ordinal by Ordinal	Kendall's tau-b	-.884	.000
	Spearman Correlation	-.884	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

5.2.6.3. Association between variables- Got possession and Area under Project

Correlation test is applied to find out the relationship of variable 'Got possession of allotted land and 'Area under Project. Cross tabulation of these variables is shown in table 5.30. Field data shows that from working area, out of 127 eligible affectees, 125 (98.5 %) succeeded to get possession of allotted land. On the other hand out of 88 eligible affectees, only 45 respondents (51 %) got possession from the reservoir area.

Table 5.30. Tarbela Dam Affectees, Cross tabulation between got possession of allotted land and area under project

Got possession of allotted land		Area under Project		Total
		Working Area	Reservoir Area	
Yes	Count	125	45	170
	%	70.2%	20.3%	42.5%
No	Count	2	43	45
	%	1.1%	19.4%	11.3%
NA	Count	51	134	185
	%	28.7%	60.3%	46.3%
Total	Count	178	222	400
	%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 5.31). Thus we can reject the null hypothesis of no association between these variables.

Table 5.32 shows that medium to strong association (.428) exists between the two variables. The association is positive which means that, as the ratio of affectees belonging

to the working area increases then the ratio of affectees who got possession of land also increases in same sequence.

Table 5.31. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	108.716(a)	2	.000
Likelihood Ratio	118.946	2	.000
Linear-by-Linear Association	49.217	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 5.32. Tarbela Dam Affectees, correlation

	Value	Approx. Sig.
Nominal by Nominal Phi	.521	.000
Ordinal by Ordinal Kendall's tau-b	.412	.000
Spearman Correlation	.428	.000
N of Valid Cases	400	

(Source: Field Survey 2009)

5.3.0 Issues related to surplus land:

5.3.1. Nature of surplus land

At the start of the project, preliminary assessment was made for the acquisition of land. After the completion of the project a sizeable land remained surplus and useless from the project mainly in the working areas. That area includes the villages of Sobra, Daal, Mohat, Ghari Maira and Umer Khana on the left bank of river Indus in district Haripur whereas the villages of Kia, Bara, Pehur and Topi were situated on the right bank of the river in Swabi district of KPK province.

About 2935 ha of land was acquired by the TDP management in 1968 for development of the project. After the completion of the project, 167 ha of that land was declared surplus by WAPDA. Under the rules stipulated in the KPK Revenue Circular 54, surplus land should be given back to the original owners at the price at which it was acquired. If the original owners are unwilling to repurchase their property, then the land could be

auctioned. The original owners in Topi region claim that they were never given the option to repurchase their surplus holdings. Instead the land was utilized for the University of Engineering and the Ghulam Ishaq Khan Institute of Technology without giving any benefit to the owners. During the field survey, the respondents were inquired whether their land remained surplus from the project or not. About 30 % respondents replied that their land was declared surplus from the project, which is still lying unused. Table 5.33 indicates the village wise situation regarding this issue.

Table 5.33. Tarbela Dam Affectees, land remained surplus from the project

Land remained surplus		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
yes	Count	47	45	15	107
	%	11.8%	11.3%	3.8%	26.8%
No	Count	231	20	42	293
	%	57.8%	5.0%	10.5%	73.3%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

5.3.2. Status of surplus land

To find out the status of surplus land a question was asked during the field visit. In response of the question whether they got back their surplus lands, the answer of almost all of them was in negative. Only one of the affectees, who belonged to Kia Hund stated that he had got his surplus land back. Its detail is given below in table 5.34.

Table 5.34. Tarbela Dam Affectees, surplus land was returned back

Get back surplus land		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
yes	Count	0	0	1	1
	%	.0%	.0%	.3%	.3%
No	Count	47	45	14	106
	%	11.8%	11.3%	3.5%	26.5%
NA	Count	231	20	42	293
	%	57.8%	5.0%	10.5%	73.3%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

5.3.2.1. Association between variables-Area under the project and land remained surplus from the project.

Table 5.35 shows overall analysis of the variables; Area under the project and land remained surplus from the project. From the results of Cross tabulation of these variables it becomes clear that majority of the surplus land belonged to the affectees of the working area. During the field survey more than half of the respondents of the working area stated that their land had remained surplus from the project. On the other hand only insignificant proportion of the respondents of the reservoir area responded positively to that question.

Table 5.35. Tarbela Dam Affectees, Area under Project * Land remained surplus

Area under Project		Land remained surplus		Total
		yes	No	
Working/ Dam Area	Count	91	87	178
	%	51.1%	48.9%	44.5%
Reservoir Area	Count	16	206	222
	%	7.2%	92.8%	100.0%
Total	Count	107	293	400
	%	26.8%	73.3%	100.0%

(Source: Field Survey 2009)

Smaller P-value (.000) of Chi-square tests indicates that there is a statistically significant relation between the two variables (Table 5.36). Thus we can reject the null hypothesis of no association between these variables. Table 5.37 shows the strength of association or effect size between two variables. Phi, Kendall's tau-b and Spearman Correlation values indicate that a medium to strong (**.493**) association exists between these variables. The association is positive which means that, as the ratio of affectees belonging to the working area increases the amount of land remained surplus from the project also increases in same sequence.

Table 5.36. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Exact Sig. (1-sided)
Pearson Chi-Square	97.238(b)	1	.000
Continuity Correction(a)	95.009	1	
Likelihood Ratio	102.954	1	
Fisher's Exact Test			
Linear-by-Linear Association	96.995	1	
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 5.37 Tarbela Dam Affectees, Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.493	.000
Ordinal by Ordinal	Kendall's tau-b	.493	.000
	Spearman Correlation	.493	.000
No. of Valid Cases		400	

(Source: Field Survey 2009)

5.4. Summary and conclusion

There was inconsistency in resettlement planning and value assessment. In the study area, 11.3% of sample respondents (21% of the eligible affectees) could not get possession of the allotted land especially from the Sindh province. Moreover, the quality of allotted land was not as much productive as it was acquired. So majority of the affectees were not satisfied with the quality of allotted land. The affectees of the central districts like Toba Tek Singh were satisfied in comparison to the outer districts of Punjab like Lodhran and Khanewal and Sindh province. There was strong association between place of land allotted and complaint about the quality of land.

Assessment of compensation value was made on the basis of average values of sale deeds of the last one year which was not justify able according to affectees. An over whelming majority of the affectees reported that assessed value of their properties was less than market values. The total compensation granted both for the land and houses did not suffice their needs so the majority of affectees spent compensation grant for substitute lands added by their savings for the construction of new houses. Therefore majority of them were not satisfied with the policy and procedure adopted for their resettlement and rehabilitation.

CHAPTER 6

SOCIO-ECONOMIC IMPACTS

6.0. Introduction

This chapter deals with the socio-economic impacts of the project on the affectees and is divided into two sections. Section one describes project's impacts on family structure and social linkage. In next section the impacts on local traditional institutions are discussed while section three tries to find out its impact on the economic conditions of affectees.

6.1. Impacts on social interaction contacts / networks

Loss of land and property is perceptible which can easily be measured but loss of socio-cultural values is impossible to quantify which cannot be compensated once it is lost. Involuntary dislocation involves destruction of socio-cultural network of the displaced people. In case of Tarbela Dam's affectees, the relocation left negative marks on their social and cultural activities. Traditionally folks of this area used to getting together and help each other en mass during the harvesting season, on occasion of marriage ceremonies and funeral processions. Several traditional games were played in leisure hours. *Hujra* system was the major factor for preserving the traditional customs. The women folk were quite familiar with each other owing to their same tribal affinity. As a result of dislocation these values were changed in new environmental setup.

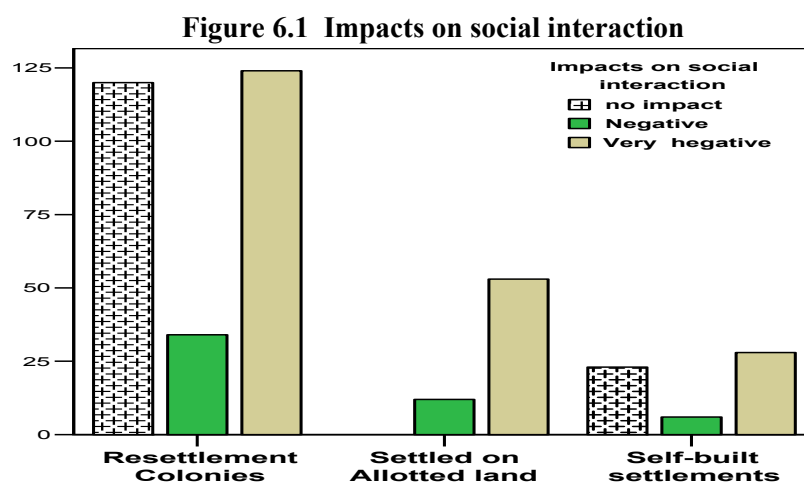
6.1.1. Impacts on mutual contacts

Analysis of the field data showed that nearly two third (65.5 %) of the respondents were of the view that relocation has negatively impacted their social life and mutual interaction among the families. Out of which, 52.2 % stated that the project has very negatively impacted the system of their social linkages and mutual interaction, while 13.3 % replied that it has negative impacts on their social lives. The rest of them replied that project had no impact on their social life. These affectees were those whose relatives were resettled in the same settlement or nearby areas. Category-wise details of responses of the affected population in this regard are shown in table 6.1 and figure 6.1 while settlement-wise detail is shown in figure 6.2.

Table 6.1 Tarbela Dam Affectees, Category-wise Impacts on social interaction

Impacts on social interaction		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
No impact	Count	120	0	23	143
	%	43.2%	.0%	40.4%	35.8%
Negative	Count	34	12	6	52
	%	12.2%	18.5%	10.5%	13.0%
Very negative	Count	124	53	28	205
	%	44.6%	81.5%	49.1%	51.3%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)



6.1.2. Dispersion of the families

On the basis of field findings it becomes clear that as a result of dislocation the affectees were dispersed in different areas. When a question was asked in this regard, nearly two third of the respondents replied that their relatives have been dispersed in various parts of the country. They expressed their views by saying that their families have been dispersed like Popcorn when baked on heat. Remaining one third replied that their relatives have been resettled either in the same settlement or in nearby areas. Respondent's perception, shown in table 6.2, explains the situation more clearly. Settlement-wise response of the affectees in the sample area is shown on figure 6.3.

Table 6.2. Tarbela Dam Affectees, Category-wise areas where other relatives resettled

Other relatives resettled		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
In near by area	Count	120	0	23	143
	%	43.2%	.0%	40.4%	35.8%
Far flung areas	Count	158	65	34	257
	%	56.8%	100.0%	59.6%	64.3%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

6.1.3. Impacts on family linkage

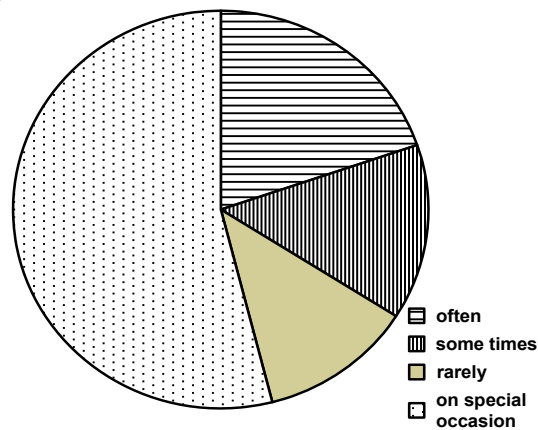
Due to dislocation the affected population has been dispersed in various parts, which resulted in snapping of family linkages and mutual interaction. Table 6.3 is an indicative of the pattern of usual visit among the affectees Field data shows that about 71 % respondents now visit to their relatives only on special occasions due a long distance. 3.45 % replied that they visit their relatives rarely while 14 % of them replied that they visit some time. Only 12 % respondents were of the view that that they have close link with their relatives and they visit often to them. Figure 6.4 and 6.5 further highlight the respondent's viewpoints.

Table 6.3. Tarbela Dam Affectees, Category-wise detail of Usual visit to relatives

Usual visit to relatives		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Often	Count	72	0	7	79
	%	25.9%	.0%	12.3%	19.8%
some times	Count	40	3	14	57
	%	14.4%	4.6%	24.6%	14.3%
Rarely	Count	28	15	5	48
	%	10.1%	23.1%	8.8%	12.0%
on special occasion	Count	138	47	31	216
	%	49.6%	72.3%	54.4%	54.0%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

Figure 6.4. Affectee's usual visit to their relatives



6.1.3.1. Association between variables; 'Other relative's resettlement' & 'Impacts on social interaction'

Cross tabulation between these variables is shown in table 6.7. Smaller P-value (.000) indicates that variables 'resettlement place of other relatives' and 'impacts on social interaction' are associated variables i.e. the impacts on social interaction depends upon the place where other relatives were resettled. As correlation between these variables was statistically significant, thus we can reject the null hypothesis of no association between these variables. Symmetric measures show the strength of association (effect size) between two variables as shown in table 6.6. Phi, Kendall's tau-b and Spearman Correlation values were 1.0, .880 and .918 respectively indicating that the effect size was quite high. The association was positive which means that as the dispersion of respondent's relatives increases, their impacts on social interaction also increases in same sequence.

Table 6.4. Tarbela Dam Affectees, Relatives resettlement & Impacts on social interaction

Other relatives resettled in		Impacts on social interaction			Total
		no impact	Negative	very negative	
in near by area	Count	143	0	0	143
	%	100%	.0%	.0%	35.8%
far flung areas	Count	0	52	205	257
	%	.0%	100%	100%	64.3%
Total	Count	143	52	205	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Table 6.5. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	400.000(a)	2	.000
Likelihood Ratio	521.573	2	.000
Linear-by-Linear Association	350.092	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 6.6. Tarbela Dam Affectees, Symmetric Measures

	Value	Approx. Sig.
Nominal by Nominal Phi	1.000	.000
Ordinal by Ordinal Kendall's tau-b	.880	.000.
No of Valid Cases		400

(Source: Field Survey 2009)

6.1.3.2. Association between variables; ‘usual visit to other relatives’ and ‘impacts on social interaction’

Chi-square tests were applied to find out relationship between the variables ‘usual visit to other relatives’ and ‘impacts on social interaction’. Cross tabulation between these variables is shown in table 6.7. P-value (.000) was smaller (less than .05) which indicates that afore mentioned variables were associated variables (table 6.8). Thus we can reject the null hypothesis of no association between these variables. To find out the strength of association / effect size between two variables, Phi, Kendall’s tau-b and Spearman Correlation tests were applied as shown in table 6.9. High values of these tests indicate that the association was quite strong and positive which means that as the gap in the visits to the relatives’ increases, their impacts on social interaction also increases in same sequence and vice versa. Cross tabulation between these variables is highlighted in figure 6.6.

Table 6.7. Tarbela Dam Affectees, Usual visit to relatives * Impacts on social interaction

Usual visit to relatives		Impacts on social interaction			Total
		No impact	Negative	Very negative	
Often	Count	79	0	0	79
	%	55.2%	.0%	.0%	19.8%
some times	Count	53	1	3	57
	%	37.1%	1.9%	1.5%	14.3%
Rarely	Count	8	5	35	48
	%	5.6%	9.6%	17.1%	12.0%
on special occasion	Count	3	46	167	216
	%	2.1%	88.5%	81.5%	54.0%
Total	Count	143	52	205	400
	%	100.0%	100.0%	100.0%	100.0%

(Source: Field Survey 2009)

Figure 6.6. Usual visit to relatives & its Impact on interaction

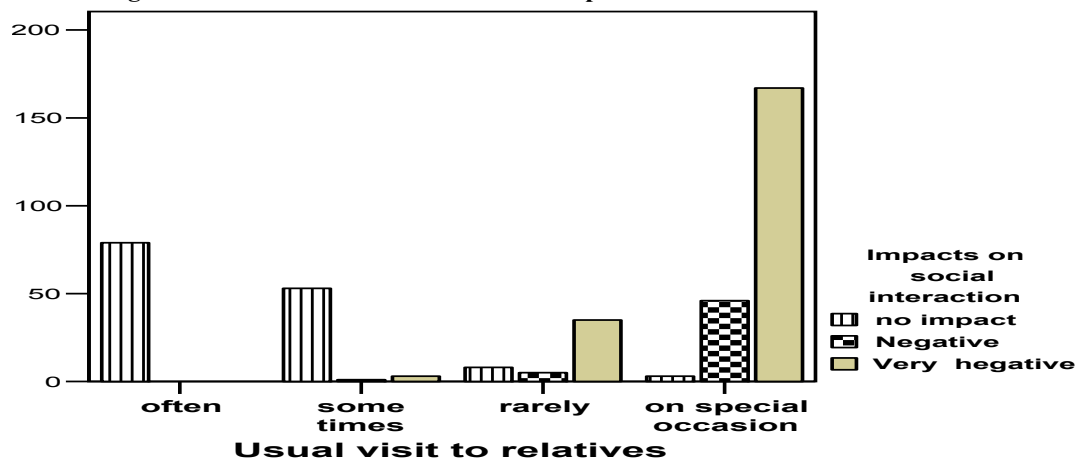


Table 6.8. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	344.209(a)	6	.000
Likelihood Ratio	419.690	6	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 6.9. Tarbela Dam Affectees, Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.928	.000
Ordinal by Ordinal	Kendall's tau-b	.704	.000
Interval by Interval	Spearman Correlation	.791	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

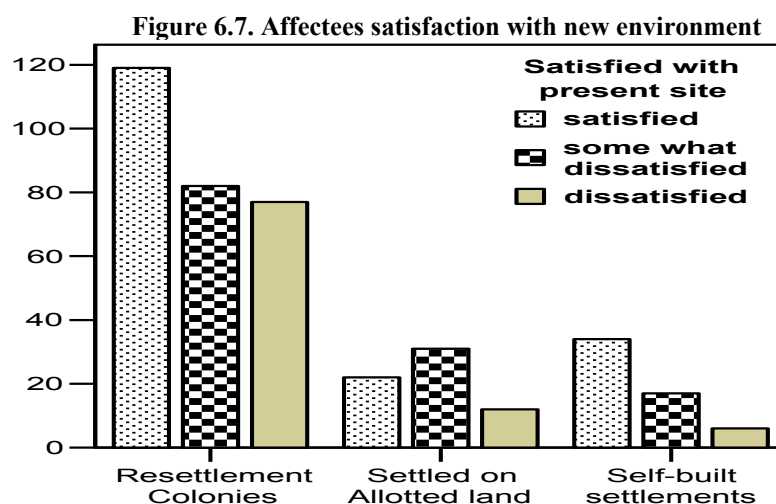
6.1.4. Problem of integrating in the host community

The Affectees had the problem of fitting into the new geographical milieu. The host community was not cordially willing to receive the resettlers because they share land and other resources with them. When asked to express their views about their satisfaction with the present site, 43.8% of them replied that they were satisfied at the present site. However, more than half of them (56.2%) were not satisfied with their present environment. Out of which 32.5% stated that they were somewhat dissatisfied whereas 23.8% were highly dissatisfied with the present site. Category-wise detail is shown in table 6.10 and figure 6.7 whereas figure 6.8 highlights the situation in sample settlements.

Table 6.10. Tarbela Dam Affectees, Category-wise Satisfied with present site

Satisfied with present site		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlement	
Satisfied	Count	119	22	34	175
	%	42.8%	33.8%	59.6%	43.8%
some what Dissatisfied	Count	82	31	17	130
	%	29.5%	47.7%	29.8%	32.5%
Dissatisfied	Count	77	12	6	95
	%	27.7%	18.5%	10.5%	23.8%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)



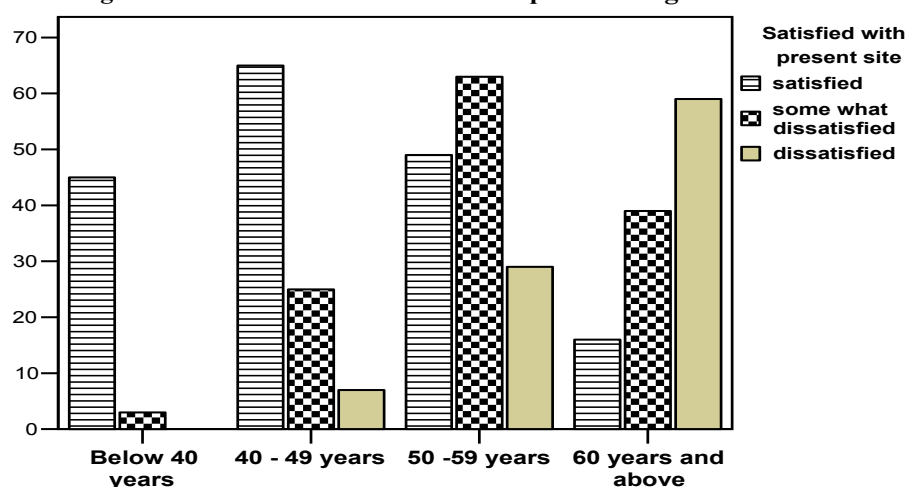
Dislocated people had difficulties in adjusting themselves into the new environment. Especially first generation did not become properly adjusted in host community even after many years of dislocation. From the study's findings it becomes clear that a strong relationship exists between the age group of the affectees and their level of dissatisfaction with the present site. Table 6.11 brings up an interesting observation in this regard. They were asked the question whether satisfied or not at the present site, an overwhelming majority (62.1%) of the respondents of age group 60 years and above were not satisfied with the present site. Among the age group below 40 years, no one showed dissatisfaction in this regard. Figure 6.9 shows an overview of the respondent's views in this regard.

Table 6.11. Tarbela Dam Affectees, Respondent Age & Satisfied with present site

Respondent Age		Satisfied with present site			Total
		Satisfied	somewhat dissatisfied	dissatisfied	
Below 40 years	Count	45	3	0	48
	%	25.7%	2.3%	.0%	12.0%
40 to 49 years	Count	65	25	7	97
	%	37.1%	19.2%	7.4%	24.3%
50 to 59 years	Count	49	63	29	141
	%	28.0%	48.5%	30.5%	35.3%
60 years & above	Count	16	39	59	114
	%	9.1%	30.0%	62.1%	28.5%
Total	Count	175	130	95	400
	%	43.7 %	32.5%	23.8%	100.0%

(Source: Field Survey 2009)

Figure 6.9. Level of satisfaction with respondent's age



Chi-square tests were applied to determine if there was a statistically significant relation between the two variables. Smaller P-value (.000) indicates that age group of the respondents and their levels of dissatisfaction are associated variables i.e. the respondents level of satisfaction depends upon his age group (table 6.12). Thus we can reject the null hypothesis of no association between these variables. Symmetric measures provide the strength of correlation between two variables as shown in table 8.13. Phi, Kendall's tau-b and Spearman Correlation values were .600, .504 and .565 respectively indicating that effect size was larger than typical. The association was positive which means that as the age of respondent's increases, their level of dissatisfaction also increases in same sequence and vice versa.

Table 6.12. Tarbela Dam Affectees, Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	143.918(a)	6	.000
Likelihood Ratio	154.583	6	.000
Linear-by-Linear Association	124.466	1	.000
N of Valid Cases	400		

(Source: Field Survey 2009)

Table 6.13. Tarbela Dam Affectees, Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.600	.000
Ordinal by Ordinal	Kendall's tau-b	.504	.000
	Spearman Correlation	.565	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

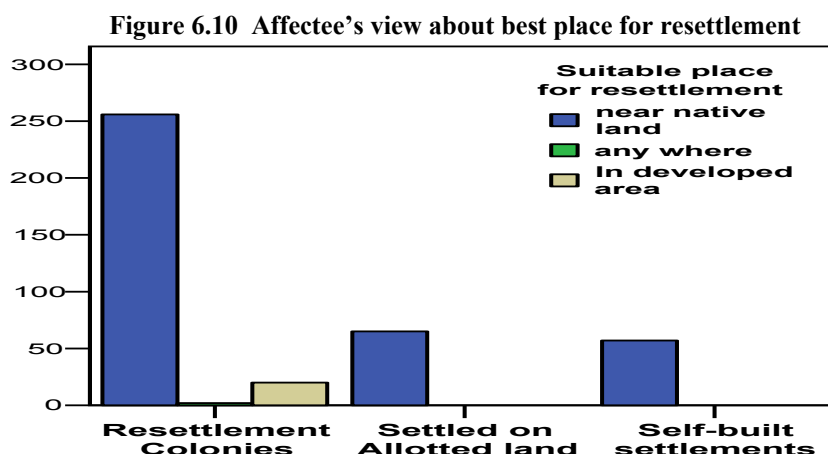
6.1.5. People don't like to move to faraway areas

British demographer Ernest Ravenstein proposed laws about the human trend regarding the resettlement. According to him the majority of the migrant like to move a short distance from their native abode. His law was tested in the field and it was noted that when inquired about the suitable choice on resettlement, majority of the sample population preferred to resettle in close by areas. Among 400 affected households in the sample population, an overwhelming majority (94.5%) was of the view that best place for resettlement is near native land while only 5.0 % preferred relocation in developed areas. Its detail is given in table 6.14.

Table 6.14. Tarbela Dam Affectees, Affectee's view about best place for resettlement

Suitable place for resettlement		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
near native land	Count	256	65	57	378
	%	64.0%	16.3%	14.3%	94.5%
any where	Count	2	0	0	2
	%	.5%	.0%	.0%	.5%
In developed area	Count	20	0	0	20
	%	5.0%	.0%	.0%	5.0%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)



6.2. Employment Opportunities in the project

6.2.1. During the construction phase

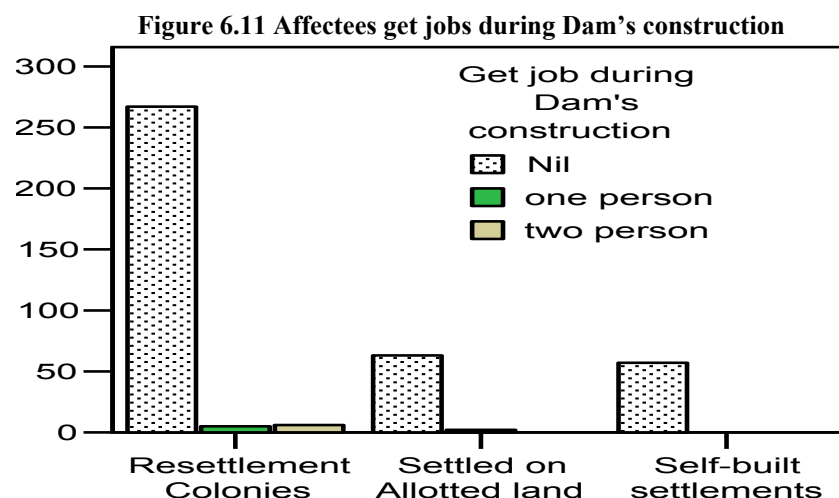
In the affected area mostly the people were unskilled and non-technical. Majority of the displaced population was involved in agricultural activities to receive income and subsistence from either ownership of agricultural land or as tenant. So the loss of livelihood from agriculture was the most significant impact of the project on the affected population. There was no obligation to employ local people, so the project contractors employed skilled as well as unskilled workers from other parts of the country.

Field data showed that out of total 400 surveyed households, there were 387 (96.8 %) households where no person could get job during the construction phase of the project. There were only 1.7 % of such households from which one individual was able to get job and from 1.5 % households two persons could get job in the project. Most of the complaints were from the resettlement townships where majority of the ineligible affectees were residing. It shows that policy, regarding employment opportunities for that section of the community, was improper and defective. Its detail is given in table 6.15 and figure 6.11.

6.15. Tarbela Dam Affectees, job during dam construction (Per household)

Got job during Dam's construction		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Nil	Count	267	63	57	387
	%	66.8%	15.8%	14.3%	96.8%
one person	Count	5	2	0	7
	%	1.3%	.5%	.0%	1.8%
two person	Count	6	0	0	6
	%	1.5%	.0%	.0%	1.5%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)



6.2.2. Post - project phase employment (In Pakistan WAPDA)

As the people of the project area were unskilled so they were involved mainly in agricultural activities. So they could not get job opportunities during the project construction phase. Skilled workers from the other areas got chance of employment during the construction period. Majority of these workers were adjusted in WAPDA when the project was completed. So the affectees of Tarbela Dam could not get appropriate job opportunities.

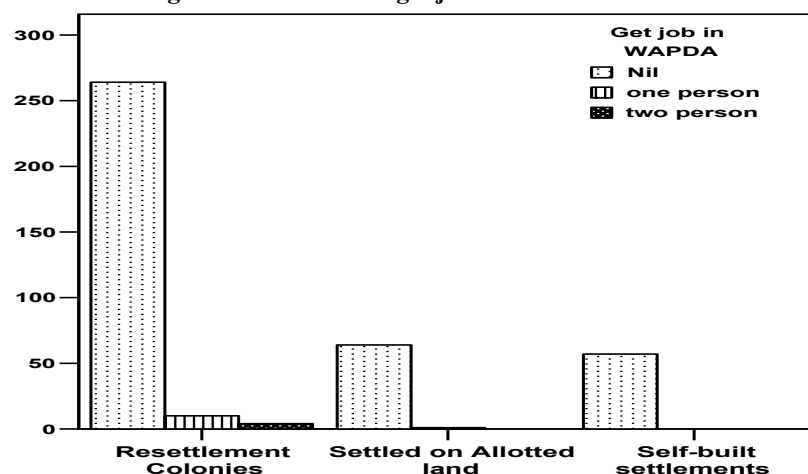
Field data showed that out of total 400 surveyed households, there were 385 (96 %) households from which no person could get a job in WAPDA. That ratio was 2.8 % for such households where only one individual was able to get a job and only 1.0 % where two members could get a job in WAPDA as shown in table 6.16 and figure 6.12.

Table 6.16. Tarbela Dam Affectees, Get job in WAPDA by sample category

Got job during Dam's construction		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Nil	Count	264	64	57	385
	%	66.0%	16.0%	14.3%	96.3%
One person	Count	10	1	0	11
	%	2.5%	.3%	.0%	2.8%
Two person	Count	4	0	0	4
	%	1.0%	.0%	.0%	1.0%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

Figure 6.12. Affectees get job in Pakistan WAPDA



During the field visit it was found that the resettlement process adversely affected the livelihood of landless and ineligible affectees. The main reason was that these segments of the society, tenants and artisans, had no productive skill to compete the new semi-urban economy especially in the townships. As a result the male affectees opted for unskilled labour and out migration to earn livelihood. Field data showed that there were nearly one-fifth (18.1 %) of the sample households where at least one person was serving in the foreign countries especially in the Middle East. There were 13 households (3.5 %) where two individuals were employed abroad for earning money. From one household three persons while five persons from another household were serving in the foreign countries. Details are given in table 6.17 below.

Table 6.17. Tarbela Dam Affectees, Persons serving in foreign country

Male serving in foreign country		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
No one	Count	224	40	52	316
	%	56.0%	10.0%	13.0%	79.0%
One person	Count	45	19	5	69
	%	11.3%	4.8%	1.3%	17.3%
2 persons	Count	9	4	0	13
	%	2.3%	1.0%	.0%	3.3%
3 persons	Count	0	2	0	2
	%	.0%	.5%	.0%	.5%
Total	Count	278	65	57	400
	%	69.5%	16.3%	14.3%	100.0%

(Source: Field Survey 2009)

The process adopted for provision of employment opportunities to the affectees resettled in township was incompatible and inconsistent. In 1967, in a high level meeting headed by the President of Pakistan it was decided that throughout the affected area small industrial estates should be established. But in practice most units were established in Khalabat Township where no one was in operation as reported by the affectees. Main reason was that after the tax holiday period these units were closed. However, in those established units, the affectees were not given preference in employment opportunities and employers often neglected them on the basis of their lack of skills.

Chi-square tests were applied to determine if there is a statistical significant relation between the two variables. Smaller P-value (.000) indicates that number of working members and satisfaction of affectees with present site are associated variables i.e. the respondents level of satisfaction depends upon number of working members (table 6.18 ad figure 6.13). Correlation between these variables is statistically significant because the value of sig. (p) is.000, which is less than .05 (table 6.19). Thus we can reject the null hypothesis of no association between these variables. Symmetric measures provide measures to find out the strength of association / relation or effect size between two variables as shown in table 6.20. Phi and Spearman Correlation values were **.422** and **-.405** respectively indicating that effect size medium level. The association is negative which means that as the number of working member's increases, their level of dissatisfaction decreases in same sequence.

Table 6.18. Tarbela Dam Affectees, No. of working members * Satisfied with present site

No. of working members		Satisfied with present site			Total
		satisfied	some what dissatisfied	dissatisfied	
Below 2 person	Count	23	47	58	128
	%	13.1%	36.2%	61.1%	32.0%
2- 3 persons	Count	107	67	31	205
	%	61.1%	51.5%	32.6%	51.3%
4 and above persons	Count	45	16	6	67
	%	25.7%	12.3%	6.3%	16.8%
Total	Count	175	130	95	400
	% of Total	43.8%	32.5%	23.8%	100.0%

(Source: Field Survey 2009)

Table 6.19. Tarbela Dam Affectees, Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	71.077(a)	4	.000
Likelihood Ratio	73.021	4	.000
Linear-by-Linear Association	62.856	1	.000
N of Valid Cases	400		

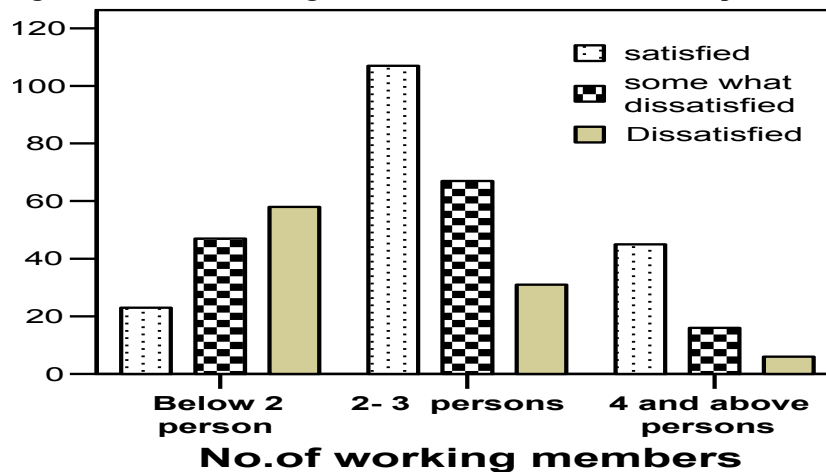
(Source: Field Survey 2009)

Table 6.20. Tarbela Dam Affectees, Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.422	.000
Ordinal by Ordinal	Spearman Correlation	-.405	.000
N of Valid Cases		400	

(Source: Field Survey 2009)

Figure 6.13 No. of working members & their satisfaction with present site



6.3. Summary and conclusion

Dislocation of affectees has adversely affected their social and cultural fabric and values and they are not satisfied. Traditionally folks of this area used to get together and help each other en masse during the crops harvesting season, marriage and death ceremonies and funeral processions. *Hujra system* was the major local institution for preserving their customs. Artisan's workshops were not only the places of mending works but also provided forum of mutual discussions. The women folk owing to their common language, culture and tradition used to get together on daily basis to perform the routine work such as fetching water, collection of wood, grasses and weeds, cooking on same *tandoor* etc. As a result of dislocation these local traditions and values are almost eliminated.

As a result of dislocation the affected families were scattered and dispersed in different parts of the country which negatively affected their family linkage and mutual interaction. Their social contacts became weaker as more than half of the respondents were usually paying visit to their relatives only on special occasions. Findings of the study showed that place of resettlement of the affected families had significant impacts on their social interaction. As the dispersion of families increases, their impact on social interaction also increases.

Affectees could not integrate themselves in the host community even after passage of a long time and they still feel themselves alien in new environmental set up. In the sample area more than half of the respondents were not satisfied with new residential site and expressed their dissatisfaction in this regard. Especially first generations have not properly adjusted within the host community and an overwhelming majority (90.9%) of respondents above 60 years of age was not satisfied with their present sites. On the other hand from respondents below 40 years of age no one showed dissatisfaction with new environment. So there was a strong correlation between respondent's age and their level of dissatisfaction. An overwhelming majority of the affectees (94.5%) reported that best site for the resettlement of dislocated population is near their native land. Their view support the Ernest Ravensten law which states that majority of the migrant like to move a short distance from their native abode.

CHAPTER 7

SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS

7.0. Introduction

This chapter is divided in to three sections. Section one concludes the study in the particular context of the study's hypotheses. Second section presents summery of the main findings of the study. Some recommendations for the mitigation of adverse impact on resettlement of the affected population are given in third section of the chapter.

7.1. Main findings of the study

7.1.1 Allotment and Possession of land

According to land allotment policy land owners having a minimum of 0.2 ha of irrigated land or 0.8 ha of non-irrigated land under cultivation were declared eligible for alternate land. Among the sample population 53.7 % of the surveyed population could qualify for allotment of substitute land in Punjab and Sindh Provinces. The corresponding data of the three zones taken individually shows that majority of the eligible affectees could not get possession of the allotted land. Among the total, 42.5 % get possession of that land whereas 11.3 % could not get possession of allotted land. The ratio of the respondents who were unable to got possession was highest in Sindh province where only one respondent could succeed in getting possession of allotted land.

7.1.2. Quality of allotted land

The quality of the land allotted to the affectees was not good and majority of the respondents were not pleased with the quality of the allotted land as it was uncultivated and rough. Out of 400 house holds, more than half (53.7%) were allotted lands but majority of them have severe reservations on the quality of that land. Among the eligible affectees an overwhelming majority responded that allotted land was of much low quality being banjar, water logged and saline land. Only 8 % respondents were of the view that the quality of the allotted land was same like their previous land. A strong positive association (.766) exists between the two variables which mean that, as the ratio of

affectees being allotted degraded category of land increases the degree of dissatisfaction with allotment criteria also increases, in the same sequence.

7.1.3. Causes for no Allotment or possession

The views of the respondents were divided about the causes of no allotment or possession of allotted land. Results of the study reveal that about 14 % of the total respondents were unable to get the allotment / possession. More than half of them stated that Sindh Government did not allot them promised land. Another 2.3 % mentioned that they could not apply timely for allotment while 3.5 % of them were of the view that land was not available for allotment.

7.1.4. Districts where land was allotted

Out of the eligible affectees, an overwhelming majority (58 %) of respondent was allotted land in Toba Tek Singh District where 1000 Acres of land was allotted to the affectees. Next higher proportion of the affectees was in Jhang District where 13 % of the eligible affectees were allotted substitute land. In Khaniwal District 8.5 % of the eligible affectees were allotted land. In Sindh province only 35 respondents were allotted land making a ratio of 15.5 % of the eligible affectees. Over all analysis shows that the distance from the central district has direct relation with the quality of allotted land. The correlation was positive which means that as the distance from central district (central Punjab) increases, the complaint about quality of allotted land also increases in same sequence.

7.1.5. Satisfaction level with land allotment criteria

Nearly half of the respondents (46.3%) could not qualify the criteria designed for the allotment of the substitute land. Therefore majority of them were not satisfied with the criteria adopted for the allotment of alternate land in Punjab and Sindh provinces. In the surveyed regions, taken as a whole, three fourth (74.7 %) of the total affectees did not agreed with that criteria as they opposed the land allotment policy. The ratio of respondents who opposed the policy was highest in category one (Resettlement Colonies) as compared to 77.2% in category two (Self-built settlements) and 58.5% in category three

(Settled on Allotted land). Only 25.3% agreed with land allotment policy as they responded in favour of it.

7.1.6. Assessment of Compensation value

The policy adopted for the award of compensation to the affectees has been a major bone of contention of the displaced communities. Findings of the present research show that an overwhelming majority of the respondents were dissatisfied with compensation money awarded to them. To them awarded compensation was less than market value.

7.1.7. Value of compensation

When asked about the value of compensation, 91.5 % of the respondents were of the view that the value they got as compensation of their land and property was less than the market value. Only 6.5 % of them replied that the value of compensation was equal to the then market. Category-wise details showed that the affectees settled on allotted land had great concern over the assessment of the values of their properties during the award. All of them, except one person, stated that the amount of compensation money was well below the market rates of that time. The corresponding ratio was 93.0 % for affectees settled in self-built settlements and 89.6 % for the affectees of resettlement colonies.

7.1.8 Compensation time

Field data showed that majority of the respondents had got their compensation money before their evacuation. Near about three fourth (72.0 %) of the respondents stated that they got compensation before their dislocation. Another 9.8 % got some compensation before the vocation and some after the vocation. Only 11.3 % reported that they could not get their compensation before vocation while. 7 % of the respondents mentioned that they did not get any compensation at all.

7.1.9. Finance used for construction of new house

The results of the field data showed that the majority of the affectees were unable to construct their new houses by the compensation money of their acquired houses. Below one fifth (19.4 %) of them constructed their new houses by compensation money. More

than one third (34.2 %) used their previous savings for this purpose. 28.1 % used both compensation money as well as their previous savings for the constructions of the houses. 8.8 % replied that they made very limited construction due to shortage of money.

7.1.10. Satisfaction with compensation price

Due to the issues of the compensation an overwhelming majority (91.5 %) of them were not satisfied with the value awarded them as compensation of their properties and lands. Out of which, 28.3 % of the respondents were highly dissatisfied whereas 42.0 % were dissatisfied with the policy. Remaining 21.5 % of them were somewhat dissatisfied while only 8.5 % were satisfied with that policy.

7.1.11. Satisfaction with resettlement process

Majority of the affectees were not satisfied with the process and procedure adopted for their resettlement. Data analysis indicates that most of them (92.3 %) were not satisfied with the policy adopted for their resettlement. Only 7.8 % of them expressed their satisfaction on that process. Overall analysis showed that as the value of compensation decreases from market rates the level of affectees' dissatisfaction increases in same sequence indicating a very strong negative association (- .884).

7.1.12 Issues related to surplus land

Nearly one third of the respondents expressed that their land had remained surplus from the project, which is lying unused still to date. Cross tabulation of these variables shows that majority of the surplus land belonged to the affectees of the working area. To find out the status of surplus land a question was asked during the field visit. In response of the question whether they had got back their surplus lands, the answer of almost all of them was in negative

7.1.13 Impacts on social interaction

Findings of the field data show that when taken as a whole nearly two third (64.2%) of the respondent mentioned that dislocation has negatively impacted their social life and mutual interaction among the families. More than half of them stated that the project has very

negatively impacted the system of their social linkages and mutual interaction. Only a third of the respondents whose relatives were resettled in the same settlement or nearby areas stated that project did not impacted their social life. The corresponding category-wise percentages showed a declining trend from ‘Settled on Allotted land’ with 100% to ‘Resettlement Colonies’ with 56.6%.

7.1.14. Dispersion of the families

The families of the Tarbela Dam Affectees were dispersed and resettled in various parts of the country. They expressed their views by saying that their families have been dispersed like Popcorn when baked on heat. In the surveyed zones taken as a whole there was an overwhelming majority (64.7%) of the respondents whose relatives were dispersed in various areas. The ratio of the respondents whose relatives were resettled either in the same settlement or in near by areas was 35.3%.

When Category-wise respondent’s perception was taken, the corresponding figure was highest (100%) for category three (Settled on Allotted land) as opposed to 59.6% for category two (Self-built settlement) and 56.8% for category one (Resettlement Colonies). Over all analysis shows that as the dispersion of the families increases from their ancestral land, the negative impacts on mutual interaction also increases in same sequence.

7.1.15. Impacts on family linkage

Dislocation the affectees resulted in snapping of family linkages and mutual interaction. More than half of the respondents (54%) mentioned that their interaction with other relatives has become very limited. They usually paid visit to their relatives only on special occasions. Nearly one fifth (19.8%) of the respondents had close link with their relatives as they visited them often. Overall analysis showed that there was a strong positive correlation between the period of visits and negative impact on mutual interaction. As the gap between visits to the relatives increases the negative impacts on mutual interaction also increases.

7.1.16. Integration in the host community

The resettlers had the problem of fitting into the new geographical milieu. Majority of the affectees could not integrate themselves in the host community. Less than half (43.8%) of the respondents found satisfied with the present site. Remaining 56.2 % were not satisfied with their present environment as they could not integrate themselves in the host community. Among them, 32.5% were somewhat dissatisfied whereas 23.8% were highly dissatisfied with the present site.

There was a strong correlation between age group of the respondents and their levels of dissatisfaction. Especially first generation did not adjust itself in host villages even after many years of dislocation. An overwhelming majority (62.1%) of the respondents above 60 years age were not satisfied with the present site. Overall analysis of the field data showed a strong positive correlation of .56 between above mentioned variables.

7.1.17. Favorite site for resettlement

To record the views of the respondents about the favorite site for resettlement a question inquired about the suitable choice for resettlement. An overwhelming majority (94.5%) of the respondents mentioned that best place for the resettlement could be near to their native lands. A small proportion of the respondents (5%) preferred to resettle in developed areas.

7.1.18 Employment Opportunities During the construction phase

In the affected area mostly the people were unskilled and non-technical involved in agricultural activities. So the loss of agricultural land and benefits incurred from that land was the most adverse impact of the project on the economy of affected population. Since there was no trend of the affectees to the project job, the project contractors employed skilled as well as unskilled workers from all over the country during the project construction phase. That was a great loss of employment to the affectees. Out of total 400 surveyed households, there was an overwhelming majority (96.8%) of households where not a single person could get job during the project phase. Only a small proportion of the households (3.3%) were lucky enough where one or two individuals were able to get job in the project.

7.1.19 Employment Opportunities in WAPDA

Findings of the field data show that the affectees were not properly compensated in WAPDA in terms of job opportunities. Majority of project phase employees were adjusted in WAPDA when the project was completed, so the affectees of Tarbela Dam were left stranded. There was an overwhelming majority of households where not a single individual of the family was able to get employment in WAPDA. Only insignificant numbers of affectees from the sample households (3.2%) were successful to get job opportunities.

The process adopted for provision of employment opportunities to the affectees resettled in township was incompatible and inconsistent. It was decided that throughout the affected area small and household industries should be established. But in practice these units were established in Khalabat Township where no one was in operation as reported by the affectees. Moreover affectees were not given proper employment preference in these units. Unskilled affectees opted for casual labour and those who get chance, migrated to foreign countries especially to the Middle East as unskilled workers. Nearly one-fourth (22%) of the sample households had at least one person serving in the foreign countries. Over all analysis shows that number of working members and satisfaction of affectees with present site are associated variables. As the working members of a family increases their level of dissatisfaction decreases indicating a negative correlation.

7.2. Conclusions

This part tries to recapitulate and analyze the study findings with respect to key questions given in research hypotheses. All the research hypotheses were tested turn by turn. The following were the research hypotheses of the study:

7.2.1. Hypothesis 1: *Land allotment and resettlement policies were not efficiently designed thus resulting in dissatisfaction of affectees on the issues of land allotment and housing.*

Variables tested for above hypothesis were; eligibility criteria for alternate land, size of the allotted residential plots and scope for expansion of Townships. Smaller P-value of

Chi-square tests indicated that there was a statistically significant relationship between these variables. A medium to strong correlation existed between the above mentioned independent variables and dependent variable 'agreed with land allotment criteria'. So the hypothesis was found valid in the sense that majority of the affected population did not qualify the eligibility criteria for land allotment.

7.2.2 Hypothesis 2: *There was inconsistency in the implementation of Resettlement Program thus adversely impacting the affected population in term of quality and possession of allotted land and value assessment of acquired property.*

Independent variables tested for this hypothesis were; Get possession of allotted land, Quality of allotted land, Assessment of compensation value of acquired property, District where land allotted, Issue of surplus land. To know the statistical significance between these variables Chi-square tests were applied. From the results of these tests, indicating smaller P value, null hypothesis of no association can easily be rejected. The hypothesis was found valid as a medium to strong association existed between the independent variables and dependent variable 'Satisfaction of affectees'.

7.2.2 Hypothesis 3: *Dislocation of affectees resulted in their resettlement in new milieu away from natural abode thus negatively impacting their family linkage, socio-economic conditions and local traditional values.*

Variables tested for this hypothesis were; 'Impacts on social interaction contacts / networks', 'Dispersion of the families', 'Impacts on family linkage', 'Problem of integrating into the host community' and 'Employment opportunities'.

The hypothesis was found valid as Smaller P-value (.000) of Chi-square tests indicated that there was a significant relation between the variables. So the null hypothesis can easily be rejected. Similarly a strong to medium association existed between the independent variables and dependent variable which also support the above hypothesis.

7.3 Recommendations and Suggestions

In the light of conducted study some recommendations are proposed for mitigation of adverse impacts of resettlement on the dislocated population.

7.3.1 Resettlers' Participation in Planning Process

Since resettlement planning involves critical decisions about the future of the displaced population, their active participation should be ensured during the whole planning process. Affected populations should be consulted directly as well as through their representatives and NGOs during designing, planning, financing and implementing resettlement. They should be informed about schedule and procedure of dislocation, resettlers' rights, compensation procedures etc. It will help to understand their needs, resources and preferences and will also reduce their reluctance to move and the stress associated with the dislocation.

7.3.2 Provision of suitable (same) environment

The dislocated people should be resettled in the vicinity of the project because dislocation not only impacts their economic and cultural conditions but also the social fabric of local communities. The economic and socio-cultural integration of the affectees with the host community is a slow process, which cannot be directed through administrative measures. However, purposively designed policies may be helpful to integrate host and resettlers relationships and to rebuild new social networks. If possible dislocated person should be resettled on a separate tract of land without mixing with host community. Sudden population influx increases population density of the area to the levels above the carrying capacity of the land and the natural resources. However if affectees are dispersed in the host community than necessary arrangements should be made to prevent impoverishment effects and destructive environmental consequences on the host community caused by induced overpopulation due to influx of affectees.

7.3.3 Industrial Development

Small and household industries are very important instrument for the economic uplift of the affected area. Industrial estate should be established and keeping in view the physiological characteristics of the area, environment friendly cottage industry should be planned. It is also in compliance with the mandated guidelines of the World Bank that the affected people should not be plagued with major depressions after the project.

7.3.4 Expansion of Resettlement Townships

In order to cope with population pressure there should be a provision for the future expansion of new townships at the planning phase. The Affectees have no other land except these residential plots which decreases generation after generation. Public library and community centers be established for the people of each township.

7.3.5 Improvement in Land Acquisition System

Land Acquisition Act 1894 should be reviewed and amended according to the requirements of present time. Land valuation and compensation process should be transparent and smooth. The planning should be according to proper schedule and the whole process be completed within a given time frame. The delay in the process deteriorates the situation which causes various problems like increase in demands of compensation money and increase in rates due to delay in implementation process. Instead of determining the value of land basing upon sale documents, which are not true representative sales, it may be done by capitalizing annual net profit from the land to be acquired.

7.3.6 Socio-Cultural Development

Adequate budgetary provision should be there in the project funds for the socio-cultural development of the project affected persons. It should be ensured that affectees could get fair opportunities to establish themselves socio-economically and make self-sustained development in the minimum possible time.

Keeping in view the gender and age group technical education programs should be planned for the affectees while formal education programs should be launched in the shape of Model Schools. Ladies/children Parks should be provided in the study area along with play grounds. For this purpose, all the line agencies should be consulted for the improvement of state of affairs lying in their respective jurisdictions.

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Chapter 4**Annex Table.4.1 Tarbela Dam Affectees. Population of the sample households**

Village Name	House-hold surveyed	Population				
		Male	%	Female	%	Total
Ghazi Hamlet	55	175	52.1	161	47.9	336
Pehur Hamlet	58	242	49.0	252	51.0	494
Khalabat Town	106	362	47.9	397	52.3	759
Darband Town	59	243	56.3	189	43.7	432
Kiya Hund	30	97	51.0	93	49.0	190
Utman Abad	27	92	48.9	96	51.1	188
255 GB	18	71	50.7	69	49.3	140
256 GB	15	52	50.5	52	49.5	104
289 GB	12	56	49.6	57	50.4	113
358 GB	20	96	46.4	111	53.6	207
Total	400	1484	50.5	1456	49.5	2940

(Source: Field Survey 2009)

Annex Table.4.2 Tarbela Dam Affectees, Age Structure of sample population

Name of Settlement	Young (< 16 years)		Mature (16-60)		Aged (60 +)		Total
	Male	Female	Male	Female	Male	Female	
Ghazi Hamlet	43	38	120	117	12	6	336
Galla Hamlet	68	102	154	130	20	20	494
Khalabat	105	128	219	240	38	29	759
Darband	79	62	150	115	14	12	432
Kiya Hund	28	35	56	49	13	9	190
Utman Abad	31	42	55	47	6	7	188
255 GB	19	31	47	34	5	4	140
256 GB	13	20	36	29	3	3	104
289 GB	16	19	35	35	5	3	113
358 GB	36	43	50	55	10	13	207
Total	438	520	922	851	126	106	2963
%	14.8	17.5	31.1	28.7	4.2	3.6	100

(Source: Field Survey, 2009)

Annex Table.4.3 Tarbela Dam Affectees, Occupation Pattern of sample households

Occupation	Male		Female		Total	
	Number	%	Number	%	Number	%
Farming	149	16.8	0	0.00	149	8.4
Business	82	9.2	0	0.00	82	4.6
Govt. Job	128	14.5	15	1.7	143	8.0
Private Job	527	59.5	35	3.9	562	31.5
House wife	--	--	846	94.4	846	47.5
Total	886	100%	896	100%	1782	100

(Source: Field Survey 2009)

Annex Table.4.4 Tarbela Dam Affectees. Education in sample households

Settlement name	Level of Education					Total
	Below Matric	Matric	Graduate	Post graduate	Technical	
Ghazi Hamlet	122	75	58	10	15	280
Galla Hamlet	161	90	54	5	1	311
Khalabat Township	265	156	150	37	10	618
Darband Township	178	70	38	6	3	295
Kiya Hund	76	14	10	3	2	105
Utman Abad	72	13	09	5	5	104
255 GB	71	18	08	0	1	98
256 GB	46	15	09	2	1	73
289 GB	36	12	07	1	0	56
358 GB	115	15	06	1	2	139
Total	1142	478	349	70	40	2079
%	54.9	23.0	16.8	3.4	1.9	100

(Source: Field Survey 2009)

Annex Table.4.5 Tarbela Dam Affectees. Family size of sample households (2009)

Settlement name	No. of persons						Total
	Below 4	4-6	7-9	10-12	13-15	15+	
Ghazi Hamlet	4	29	17	5	0	0	55
Galla Hamlet	2	20	22	7	3	4	58
Khalabat Township	3	43	47	11	2	0	106
Darband Township	2	29	17	4	6	1	59
Kiya Hund	3	13	13	0	1	0	30
Utman Abad	2	14	8	1	1	1	27
255 GB	1	8	4	4	0	1	18
256 GB	1	7	5	1	1	0	15
289 GB	1	0	6	4	1	0	12
358 GB	0	1	8	8	1	2	20
Total	19	164	147	45	16	9	400
%	4.7	41.0	36.7	11.2	4.0	2.3	100

(Source: Field Survey, 2009)

Annex Table.4.6 Tarbela Dam Affectees, Housing Conditions of the sample population

Settlement Name		House structure			Total	Average House-Hold Size
		Pacca	Semi-pacca	Kacha		
Ghazi Hamlet	Count	46	9	0	55	6.1
	%	15.1%	10.0%	.0%	13.8%	
Galla Hamlet	Count	47	9	2	58	8.5
	%	15.4%	10.0%	40.0%	14.5%	
Khalabat Town	Count	84	22	0	106	7.0
	%	27.5%	24.4%	.0%	26.5%	
Darband Town	Count	33	24	2	59	7.3
	%	10.8%	26.7%	40.0%	14.8%	
Kiya Hund	Count	20	10	0	30	6.3
	%	6.6%	11.1%	.0%	7.5%	
Utman Abad	Count	20	7	0	27	6.9
	%	6.6%	7.8%	.0%	6.8%	
255 GB	Count	17	1	0	18	7.7
	%	5.6%	1.1%	.0%	4.5%	
256 GB	Count	13	2	0	15	6.9
	%	4.3%	2.2%	.0%	3.8%	
289 GB	Count	10	2	0	12	9.4
	%	3.3%	2.2%	.0%	3.0%	
58 GB	Count	15	4	1	20	10.3
	%	4.9%	4.4%	20.0%	5.0%	
Total	Count	305	90	5	400	7.4
	%	76.3 %	22.5%	1.2 %	100.0%	

(Source: Field Survey, 2009)

Annex Table.4.7 Tarbela Dam Affectees, No. of rooms in sample households

Settlement Name		Number of bedrooms				Total
		One room	2 rooms	3-4 rooms	5 & above	
Ghazi Hamlet	Count %	5 27.8%	25 13.1%	19 14.0%	6 10.9%	55 13.8%
Galla Hamlet	Count %	0 .0%	21 11.0%	28 20.6%	9 16.4%	58 14.5%
Khalabat Town	Count %	7 38.9%	66 34.6%	24 17.6%	9 16.4%	106 26.5%
Darband Town	Count %	0 .0%	35 18.3%	17 12.5%	7 12.7%	59 14.8%
Kiya Hund	Count %	1 5.6%	17 8.9%	10 7.4%	2 3.6%	30 7.5%
Utman Abad	Count %	1 5.6%	3 1.6%	12 8.8%	11 20.0%	27 6.8%
255 GB	Count %	1 5.6%	10 5.2%	7 5.1%	0 .0%	18 4.5%
256 GB	Count %	2 11.1%	7 3.7%	4 2.9%	2 3.6%	15 3.8%
289 GB	Count %	0 .0%	3 1.6%	7 5.1%	2 3.6%	12 3.0%
358 GB	Count %	1 5.6%	4 2.1%	8 5.9%	7 12.7%	20 5.0%
Total	Count %	18 4.5 %	191 47.8%	136 34.0%	55 13.7%	400 100.0%

(Source: Field Survey, 2009)

nnex Table.4.8 Tarbela Dam Affectees. Source of cooking fuel in sample households

Settlement Name		Cooking fuel					Total
		wood	cylinder	both wood & cylinder	sui gas	wood & dungbel	
Ghazi Hamlet	Count %	7 5.9%	6 54.5%	42 27.3%	0 .0%	0 .0%	55 13.8%
Galla Hamlet	Count %	34 28.6%	0 .0%	24 15.6%	0 .0%	0 .0%	58 14.5%
Khalabat Town	Count %	0 .0%	0 .0%	0 .0%	106 100.0%	0 .0%	106 26.5%
Darband Town	Count %	30 25.2%	5 45.5%	24 15.6%	0 .0%	0 .0%	59 14.8%
Kiya Hund	Count %	1 .8%	0 .0%	19 12.3%	0 .0%	10 100.0%	30 7.5%
Utman Abad	Count %	8 6.7%	0 .0%	19 12.3%	0 .0%	0 .0%	27 6.8%
255 GB	Count %	10 8.4%	0 .0%	8 5.2%	0 .0%	0 .0%	18 4.5%
256 GB	Count %	4 3.4%	0 .0%	11 7.1%	0 .0%	0 .0%	15 3.8%
289 GB	Count %	5 4.2%	0 .0%	7 4.5%	0 .0%	0 .0%	12 3.0%
358 GB	Count %	20 16.8%	0 .0%	0 .0%	0 .0%	0 .0%	20 5.0%
Total	Count %	119 29.8%	11 2.8%	154 38.5%	106 26.5%	10 2.5%	400 100.0%

(Source: Field Survey 2009)

Annex Table.4.9 Tarbela Dam Affectees, Village-wise detail of Garbage disposal system

Settlement Name	Garbage disposal			Total
	In street	in field/ open space	in fixed hole	
Ghazi Hamlet	8	47	0	55
Galla Hamlet	55	3	0	58
Khalabat Township	4	0	102	106
Darband Township	13	46	0	59
Kiya Hund	0	30	0	30
Utman Abad	0	27	0	27
255 GB	0	18	0	18
256 GB	0	15	0	15
289 GB	0	12	0	12
358 GB	0	20	0	20
Total	80	218	102	400

(Source: Field Survey 2009)

Annex Table.4.10 Tarbela Dam Affectees. Drainage system in sample households

Settlement Name		Drainage system			Total
		in street lane	in dug hole	in open field	
Ghazi Hamlet	Count	13	23	19	55
	%	8.1%	14.0%	25.0%	13.8%
Galla Hamlet	Count	1	57	0	58
	%	.6%	34.8%	.0%	14.5%
Khalabat Township	Count	106	0	0	106
	%	66.3%	.0%	.0%	26.5%
Darband Township	Count	38	21	0	59
	%	23.8%	12.8%	.0%	14.8%
Kiya Hund	Count	0	6	24	30
	%	.0%	3.7%	31.6%	7.5%
Utman Abad	Count	0	16	11	27
	%	.0%	9.8%	14.5%	6.8%
255 GB	Count	2	13	3	18
	%	1.3%	7.9%	3.9%	4.5%
256 GB	Count	0	15	0	15
	%	.0%	9.1%	.0%	3.8%
289 GB	Count	0	8	4	12
	%	.0%	4.9%	5.3%	3.0%
358 GB	Count	0	5	15	20
	%	.0%	3.0%	19.7%	5.0%
Total	Count	160	164	76	400
	%	40.0%	41.0%	19.0%	100.0%

(Source: Field Survey 2009)

Annex Table.4.11 Tarbela Dam Affectees, Get residential plots

Settlement Name		Size of residential plot (in Marlas)				Total
		nil	≤ 10	11-19	≥ 20	
Ghazi Hamlet	Count	2	14	2	37	55
	%	3.7%	6.8%	4.2%	39.8%	13.8%
Galla Hamlet	Count	4	17	13	24	58
	%	7.4%	8.3%	27.1%	25.8%	14.5%
Khalabat Township	Count	2	84	18	2	106
	%	3.7%	41.0%	37.5%	2.2%	26.5%
Darband Township	Count	6	46	4	3	59
	%	11.1%	22.4%	8.3%	3.2%	14.8%
Kiya Hund	Count	18	10	0	2	30
	%	33.3%	4.9%	.0%	2.2%	7.5%
Utman Abad	Count	19	5	0	3	27
	%	35.2%	2.4%	.0%	3.2%	6.8%
255 GB	Count	2	11	0	5	18
	%	3.7%	5.4%	.0%	5.4%	4.5%
256 GB	Count	0	10	1	4	15
	%	.0%	4.9%	2.1%	4.3%	3.8%
289 GB	Count	0	3	3	6	12
	%	.0%	1.5%	6.3%	6.5%	3.0%
358 GB	Count	1	5	7	7	20
	%	1.9%	2.4%	14.6%	7.5%	5.0%
Total	Count	54	205	48	93	400
	%	13.5%	51.3%	12.0%	23.3%	100.0%

(Source: Field Survey 2009)

Annex Table.4.12 Tarbela Dam Affectees, Land tenure system

Settlement Name		Land tenure system						Total
		self cultivated	Tenants	share	Lease	Sold	NA	
Ghazi Hamlet	Count	9	0	2	25	1	18	55
	%	13.6%	.0%	22.2%	36.2%	9.1%	7.8%	13.8%
Pehur Hamlet	Count	0	3	1	20	0	34	58
	%	.0%	20.0%	11.1%	29.0%	.0%	14.8%	14.5%
Khalabat Town	Count	1	4	0	12	7	82	106
	%	1.5%	26.7%	.0%	17.4%	63.6%	35.7%	26.5%
Darband Town	Count	0	1	0	1	0	57	59
	%	.0%	6.7%	.0%	1.4%	.0%	24.8%	14.8%
Kiya Hund	Count	4	2	2	0	1	21	30
	%	6.1%	13.3%	22.2%	.0%	9.1%	9.1%	7.5%
Utman Abad	Count	3	0	1	5	1	17	27
	%	4.5%	.0%	11.1%	7.2%	9.1%	7.4%	6.8%
255 GB	Count	11	5	1	1	0	0	18
	%	16.7%	33.3%	11.1%	1.4%	.0%	.0%	4.5%
256 GB	Count	9	0	1	5	0	0	15
	%	13.6%	.0%	11.1%	7.2%	.0%	.0%	3.8%
289 GB	Count	11	0	1	0	0	0	12
	%	16.7%	.0%	11.1%	.0%	.0%	.0%	3.0%
358 GB	Count	18	0	0	0	1	1	20
	%	27.3%	.0%	.0%	.0%	9.1%	.4%	5.0%
Total	Count	66	15	9	69	11	230	400
	%	16.5%	3.8%	2.2%	17.3%	2.7%	57.5%	100.0%

(Source: Field Survey 2009)

Annex Table.4.13 Tarbela Dam Affectees, Present house fulfill residential needs

Settlement Name		Present house fulfill residential needs			Total
		very much	to some extent	not fulfill	
Ghazi Hamlet	Count	1	12	42	55
	%	1.7%	6.3%	27.6%	13.8%
Galla Hamlet	Count	20	26	12	58
	%	33.9%	13.8%	7.9%	14.5%
Khalabat Township	Count	0	61	45	106
	%	.0%	32.3%	29.6%	26.5%
Darband Township	Count	13	21	25	59
	%	22.0%	11.1%	16.4%	14.8%
Kiya Hund	Count	4	16	10	30
	%	6.8%	8.5%	6.6%	7.5%
Utman Abad	Count	7	17	3	27
	%	11.9%	9.0%	2.0%	6.8%
255 GB	Count	4	11	3	18
	%	6.8%	5.8%	2.0%	4.5%
256 GB	Count	0	10	5	15
	%	.0%	5.3%	3.3%	3.8%
289 GB	Count	1	8	3	12
	%	1.7%	4.2%	2.0%	3.0%
358 GB	Count	9	7	4	20
	%	15.3%	3.7%	2.6%	5.0%
Total	Count	59	189	152	400
	%	14.8%	47.3%	38.0%	100.0%

(Source: Field Survey 2009)

Chapter 5

Annex Table.5.1 Quality of allotted land as compared to acquired land

Settlement Name	Respondent's view				Total
	same	worse than that	much degraded	NA	
Ghazi Hamlet	0	25	13	17	55
Galla Hamlet	11	14	0	33	58
Khalabat Town	0	14	50	42	106
Darband Town	2	2	1	54	59
Kiya Hund	2	5	2	21	30
Utman Abad	0	6	4	17	27
255 GB	0	6	12	0	18
256 GB	0	7	8	0	15
289 GB	0	6	6	0	12
358 GB	2	4	13	1	20
Total	17	89	109	185	400
%	4.2	22.2	27.3	46.3	100.0

(Source: Field Survey 2009)

Annex Table.5.2 Tarbela Dam Affectees, Value of compensation money

Settlement name	Less than market		Equal to market		Total
	No.	%	No.	%	
Ghazi Hamlet	55	100	0	0	55
Galla Hamlet	51	88	7	12	58
Khalabat Town	101	95	5	5	106
Darband Town	52	88	7	12	59
Kiya Hund	27	90	3	10	30
Utman Abad	26	96.2	1	3.8	27
255 GB	18	100	0	0	18
256 GB	15	100	0	0	15
289 GB	12	100	0	0	12
358 GB	19	95	1	5.0	20
Total	376	93.5	24	6.5	400

(Source: Field Survey 2009)

Annex Table.5.3 Tarbela Dam Affectees, When got compensation

Settlement Name	When got compensation				Total	
	Never	before vocation	after vocation	some before & some after	No.	%
Ghazi Hamlet	0	52	0	3	55	13.8%
Galla Hamlet	0	32	18	8	58	4.5%
Khalabat Town	0	102	3	1	106	26.5%
Darband Town	28	21	9	1	59	14.8%
Kiya Hund	0	1	11	18	30	7.5%
Utman Abad	0	27	0	0	27	6.8%
255 GB	0	18	0	0	18	4.5%
256 GB	0	15	0	0	15	3.8%
289 GB	0	10	2	0	12	3.0%
358 GB	0	10	2	8	20	5.0%
Total	28	288	45	39	400	100.0%
%	7.0%	72.0%	11.3%	9.8%	100.0%	

(Source: Field Survey 2009)

Annex Table.5.4 Tarbela Dam Affectees, Value of compensation for house construction

Settlement name	Respondent's View			Total
	Hardly sufficient	In sufficient	much in sufficient	
Ghazi Hamlet	2	16	37	55
Galla Hamlet	9	42	7	58
Khalabat Town	4	19	83	106
Darband Town	7	15	37	59
Kiya Hund	6	22	2	30
Utman Abad	0	9	18	27
255 GB	1	5	12	18
256 GB	0	8	7	15
289 GB	0	4	8	12
358 GB	4	7	9	20
Total	33	147	220	400
%	8.3%	36.8%	55.0%	100.0%

(Source: Field Survey 2009)

Annex Table.5.5 Tarbela Dam Affectees, Satisfied with compensation

Settlement name	Respondent's View				Total
	Satisfied	Some what dissatisfied	Dis-Satisfied	Highly dissatisfied	
Ghazi Hamlet	0	0	32	23	55
Galla Hamlet	13	17	28	0	58
Khalabat Town	8	16	28	54	106
Darband Town	7	18	31	3	59
Kiya Hund	4	25	1	0	30
Utman Abad	1	7	10	9	27
255 GB	0	0	7	11	18
256 GB	0	0	8	7	15
289 GB	0	0	9	3	12
358 GB	1	2	14	3	20
Total	34	85	168	113	400
%	8.5%	21.2%	42.0%	28.3%	100

(Source: Field Survey 2009)

Annex Table.5.6 Tarbela Dam Affectees, land remained surplus from the project

Settlement name	Respondent's View		Total
	Yes	No	
Ghazi Hamlet	46	9	55
Galla Hamlet	03	55	58
Khalabat Town	01	82	83
Darband Town	00	59	59
Kiya Hund	03	27	30
Utman Abad	14	13	27
255 GB	13	05	18
256 GB	11	04	15
289 GB	08	04	12
358 GB	13	07	20
Total	112	265	377
%	29.7	70.3	100

(Source: Field Survey 2009)

Annex Table.5.7 Tarbela Dam Affectees, surplus land was returned back

Settlement name	Respondent's View			Total
	Yes	No	NA	
Ghazi Hamlet	00	46	9	55
Galla Hamlet	00	00	55	58
Khalabat Town	00	01	82	83
Darband Town	00	00	59	59
Kiya Hund	01	00	27	30
Utman Abad	00	14	13	27
255 GB	00	13	05	18
256 GB	00	11	04	15
289 GB	00	08	04	12
358 GB	00	13	07	20
Total	01	111	265	377
%	0.2	29.5	70.3	100

(Source: Field Survey 2009)

Chapter 6

Annex Table 6.1 Tarbela Dam Affectees, Impacts on social interaction

Settlement Name		Impacts on social interaction			Total
		no impact	Negative	Very negative	
Ghazi Hamlet	Count	2	12	41	55
	%	3.6%	21.8%	74.5%	100.0%
Galla Hamlet	Count	36	4	18	58
	%	62.1%	6.9%	31.0%	100.0%
Khalabat Township	Count	58	11	37	106
	%	54.7%	10.4%	34.9%	100.0%
Darband Township	Count	24	7	28	59
	%	40.7%	11.9%	47.5%	100.0%
Kiya Hund	Count	18	2	10	30
	%	60.0%	6.7%	33.3%	100.0%
Utman Abad	Count	5	4	18	27
	%	18.5%	14.8%	66.7%	100.0%
255 GB	Count	0	5	13	18
	%	.0%	27.8%	72.2%	100.0%
256 GB	Count	0	4	11	15
	%	.0%	26.7%	73.3%	100.0%
289 GB	Count	0	2	10	12
	%	.0%	16.7%	83.3%	100.0%
358 GB	Count	0	1	19	20
	%	.0%	5.0%	95.0%	100.0%
Total	Count	143	52	205	400
	%	35.8%	13.0%	51.3%	100.0%

(Source: Field Survey 2009)

Annex Table 6.2 Tarbela Dam Affectees, Suitable choice for resettlement

Settlement name	Respondent's view						Total
	Near native land		Any where		In developed areas		
Ghazi Hamlet	54	98.2%	0	0.0%	1	1.8%	55
Galla Hamlet	56	96.6%	0	0.0%	2	3.4%	58
Khalabat Town	96	90.6%	2	1.9%	8	7.5%	106
Darband Town	50	84.8%	0	0.0%	9	15.2%	59
Kiya Hund	30	100%	0	0.0%	0	0.0%	30
Utman Abad	27	100%	0	0.0%	0	0.0%	27
255 GB	18	100%	0	0.0%	0	0.0%	18
256 GB	15	100%	0	0.0%	0	0.0%	15
289 GB	12	100%	0	0.0%	0	0.0%	12
358 GB	20	100%	0	0.0%	0	0.0%	20
Total	378	94.5%	2	0.5%	20	5.0%	400

(Source: Field Survey 2009)

Annex Table 6.3 Tarbela Dam Affectees, job during dam construction (Per household)

Settlement Name	Get job during Dam's construction			Total
	Nil	one person	two persons	
Ghazi Hamlet	53	2	0	55
Galla Hamlet	56	1	1	58
Khalabat Township	105	1	0	106
Darband Township	53	1	5	59
Kiya Hund	30	0	0	30
Utman Abad	27	0	0	27
255 GB	18	0	0	18
256 GB	15	0	0	15
289 GB	12	0	0	12
358 GB	18	2	0	20
Total	387 (96.6%)	7 (1.7%)	6 (1.5%)	400 (100%)

(Source: Field Survey 2009)

Annex Table 6.4 Tarbela Dam Affectees, Get job in WAPDA (Per household)

Settlement Name	Get job in WAPDA			Total
	Nil	one person	two person	
Ghazi Hamlet	49	6	0	55
Galla Hamlet	55	3	0	58
Khalabat Township	106	0	0	106
Darband Township	54	1	4	59
Kiya Hund	30	0	0	30
Utman Abad	27	0	0	27
255 GB	18	0	0	18
256 GB	15	0	0	15
289 GB	12	0	0	12
358 GB	19	1	0	20
Total	385	11	4	400
	96.2%	2.8%	1.0%	100%

(Source: Field Survey 2009)

Annex Table 6.5. Tarbela Dam Affectees, Persons serving in foreign country

Settlement Name		Persons serving in foreign country				Total
		No one	One person	2 persons	3 persons	
Ghazi Hamlet	Count	37	15	3	0	55
	%	11.7%	21.7%	23.1%	.0%	13.8%
Galla Hamlet	Count	36	17	5	0	58
	%	11.4%	24.6%	38.5%	.0%	14.5%
Khalabat Town	Count	95	10	1	0	106
	%	30.1%	14.5%	7.7%	.0%	26.5%
Darband Town	Count	56	3	0	0	59
	%	17.7%	4.3%	.0%	.0%	14.8%
Kiya Hund	Count	29	1	0	0	30
	%	9.2%	1.4%	.0%	.0%	7.5%
Utman Abad	Count	23	4	0	0	27
	%	7.3%	5.8%	.0%	.0%	6.8%
255 GB	Count	11	7	0	0	18
	%	3.5%	10.1%	.0%	.0%	4.5%
256 GB	Count	4	8	2	1	15
	%	1.3%	11.6%	15.4%	50.0%	3.8%
289 GB	Count	11	1	0	0	12
	%	3.5%	1.4%	.0%	.0%	3.0%
358 GB	Count	14	3	2	1	20
	%	4.4%	4.3%	15.4%	50.0%	5.0%
Total	Count	316	69	13	2	400

(Source: Field Survey 2009)

13 POINTS RESETTLEMENT POLICY FOR TARBELA DAM

AFFECTEES

**DECISIONS OF THE MEETING HELD ON 3RD MAY, 1967 UNDER THE
CHAIRMANSHIP OF THE PRESIDENT OF PAKISTAN**

The conference took the following decisions:-

1. The notifications under section - 4 of the land Acquisition Act, issued in 1960-61 should be cancelled. Instead a fresh notice should be issued with immediate effect.
2. Fair market price should be assessed on the basis of price of land obtaining during 12th months proceeding 1st of May, 1967. In determining this price, *intiqal* (transfer of land ownership) prices should be discounted and only prices recorded in registered sales in the affected areas or in the neighborhood should be taken into account.
3. Some good officers should be appointed as land Acquisition Collectors and they should be associated in their work by a committee consisting of representatives of Provincial Government and the west Pakistan WAPDA. The committee should work in an advisory capacity in determining the fair price of land.
4. All efforts should be made to accelerate the process of land acquisition for the project. The provision of the normal law should apply in respect of payment of interest charges on compensation in case of delay in payment.
5. Proper investment schemes should be drawn up to make profitable use of the huge amount of compensation money which would be paid to the displaced persons. Large amount should be issued in bonds and securities.
6. In the tribal areas as well as in the areas in possession of *Nawab of Amb* compensation should be paid on the basis of price paid for lands of equivalent quality in settled areas.

7. Owners of the agricultural land possessing a minimum of half acre of irrigated land or two acres of barani land under cultivation in the affected areas should be given the option to purchase agricultural lands in the old Colonies of Punjab and Barrage areas. The minimum area to be offered will not be less than 12.5 acres in the colony areas and 16 to 34 acres in Barrage areas depending on the quality of land.
8. Land offered in colony areas should be priced on the basis of prevailing prices during 12 months proceeding May, 1967. In the barrage areas also the price should be similarly fixed by the Board of Revenue and a concession of Rs. 100/- per acre should be made.
9. In the colony area the maximum acreage to be offered to the landowners should be 50 acres while in the Barrage areas there should be no size restriction.
10. There should be no restriction in securing land both in colonies and project areas subject to the minimum and maximum limitation.
11. Affected people desirous of settlement in the new lands should be provided transportations at the cost of project. In addition hutting allowance should also be given @ Rs. 150/-. There should be liaison between district administration and WAPDA in transporting and settling displaced people in their new homes. The agricultural development corporation should plan new settlements in the Barrage areas.
12. Village sites should be developed along the periphery of the reservoir and elsewhere in Hazara district in consultation with the affected people. Road access and power supply should be ensured in these newly developed areas. Plots should be sold to the affected people willing to establish their new homes in these areas.
13. Adequate publicity should be given about the measures adopted for rehabilitation of the displace persons. A communiqué in the subject should be issued immediately after the meeting.

Allotment Slip (Front side)

درخواست برائے الاٹمنٹ اراضی متبادل

71 میں سید انجم ولد سید عبدالجبار

19

ساکن دارالحکومت جس کا رقبہ متاثرہ تربیہ ڈیم حاصل کر لیا گیا ہے۔ اور
جس اراضی کا معاوضہ مبلغ تعین ہو چکا ہے۔ اپنا
یہ معاوضہ اراضی نقد لینا چاہتا ہوں۔ ادا فرمایا جاوے۔

معاوضہ بصورت متبادل اراضی لینا چاہتا ہوں معاوضہ برائے قیمت اراضی محفوظ
رکھا جائے۔ میں اپنی آقاؤں کا خود ذمہ دار ہوں گا۔

حان ولی محمد خان نمبر دار
موضع اراضی

شناخت کنندہ
نمبر دار (میں وغیرہ)

دستخط دولتی کارکن
نشان انگوٹھا
موضع درمی

حکم صاحب کلکٹر حصول اراضی

اصل ہذا بطور ریکارڈ دفتر میں ہے۔ اور ایک نقل برائے الاٹمنٹ اراضی بحضرت
سیکرٹری صاحب الاٹمنٹ کمیٹی مرسل ہووے۔

دستخط کلکٹر

نمبر

دائیں طرف پرکھ کر دیکھ کر

12000.23 27-15-3 71
 2224.03 4-3-0 1085
 9776.20 23-12-3

19/7/81

for awarded as receipt above.

Land Acquisition Collector
 P.D.A.O. Wapda, Ghazi.

Glossary

Barani	rain-fed
bcm	billion cubic meters
Chahi	land irrigated with Persian wheel
cumecs	cubic meter per second
Cusecs	cubic feet per second
Dara/ nullah	seasonal torrent
ECNEC	Executive Council of the National Economic Council
GB	Gogera Branch
GBTI	Ghazi Barotha Taraqiati Iddara (Development Corporation)
GOKPK	Government of Khyber Pakhtunkhwa
GOP	Government of Pakistan
Govt.	Government
ha	hectare
Hujra	meeting place for males
IRSA	Indus River System Authority
Kacha	non-mettle
kanal	Area equal to 20 marlas
Km	kilometer
Km ²	square kilometer
LAC	Land Acquisition Collector
M cu m	Million cubic meters
Maidan	Plain
MAF	Million Acre Feet
Marla	Area about 272 sq. feet
mm.	Millimeter
MW	Mega Watts
NCC	Nucleus Clearance Cell

Nehri	canal-fed
Pacca	Mettle
PC-1	Project Performa-1
Tandoor	oven meant for baking bread
TDP	Tarbela Dam Project
TDRO	Tarbela Dam Resettlement Organization
WAPDA	Water and Power Development Authority

ANNEXURE “E”

Household Questionnaire

***EX-POST ANALYSIS OF DISPLACED PEOPLE DUE TO MULTI- PURPOSE
WATER RESOURCE DEVELOPMENT PROJECTS:
A CASE STUDY OF TARBELA DAM, PAKISTAN***

Questionnaire No -----

Settlement Category-----

Settlement Name-----

Date-----

SECTION 1: HOUSEHOLD AND HOUSING

1.1 House hold size

1.2 Family composition

S.#	Relationship with household head	Age	Sex	Education	Occupation	Place of work	Marital status

1.3 What is the structure of your present home?

(i) pacca (ii) semi-pacca (iii)kacha (iv) some pacca & some kacha

- 1.4 In what position you are living in your home?
 (i) As owner (ii) on rent (iii) without rent (iv) other _____
- 1.5 No of rooms _____ No of bathroom _____ No of toilet _____ No of kitchen _____
- 1.6 What is the source of your drinking water?
 (i) Tape (ii) Well (iii) Both tape and well (iv) Hand pump (v) Other.
- 1.7 Where is your drinking water facility located?
 (i) Inside the house. (ii) Outside the house.
- 1.8 How do you dispose off garbage of your house?
 (i) In streets (ii) In Open field
 (iii) In fixed hole (v) through committee
- 1.9 What is the arrangement for your water drainage?
 (i) Main sewerage line (ii) In street's drain
 (iii) In Open field (vi) In dug hole

SECTION II: LAND ACQUISITION PROBLEMS

- 2.1 Had you any property before dislocation? Yes / No
 If yes then its nature;
 (i) irrigated land----- (area in Kanals)
 (ii) non- irrigated (Barani) land----- (area in Kanals)
 (iii) non-agricultural land ----- (area in Kanals)
 (iv) houses ----- (No. of rooms)
- 2.2 Had your any property acquired by the project? Yes / No
 If yes then its nature;
 (i) irrigated land acquired----- (area in Kanals)
 (ii) non- irrigated (Barani) land acquired ----- (area in Kanals)
 (iii) non-agricultural land acquired ----- (area in Kanals)
 (iv) houses acquired ----- (No. of rooms)
- 2.3 Had you qualify the criteria set for allotment of substitute land? Yes / No

2.4 Had you allotted substitute agricultural land? Yes / No

If yes then;

(i) How much land? (area in Kanals)-----

(ii) Where? (District name)-----

If no then its reasons;-----

2.5 Had you got possession of allotted agricultural land? Yes / No

If no then Reason for no allotment / possession-----

2.6 Quality of allotted agricultural land as compared to acquired land?

(i) Better than acquired land (ii) Same to acquired land

(iii) Worse than acquired land (iv) Banjar and saline land

(v) Not applicable

2.7 What is land tenure system?

(i) Self-cultivated (ii) by tenants (iii) on lease

(iv) On share (vi) sold (vi) NA.

2.8 Land eligibility criteria were justifiable in the sense that it was covering majority of land owners. Yes / No

2.9 Had you agreed with the criteria set for land allotment? Yes / No

2.10 Had you allotted the residential plot? Yes / No

If yes then

(i) How much? (area in Marlas) -----

(ii) Where? (District name) -----

If no then its reasons;-----

2.11 Is this home/plot sufficient to meet your present needs? Yes / No

2.12 Had any part of your land remained surplus from the project? Yes / No

If yes then its nature

(i) irrigated land----- (area in Kanals)

(ii) non- irrigated (Barani) land----- (area in Kanals)

(iii) non-agricultural land ----- (area in Kanals)

2.13 Had your got back that surplus land from the project? Yes / No

SECTION III: VALUATION OF ACQUIRED LAND

3.1 Had you got payment of your acquired land? Yes / No

If yes then, when you got that payment?

(i) Before the dislocation (ii) After the dislocation

(iii) Some before and some after (iv) not yet. (v) Not applicable

If no then reason; -----

3.2 Do you think the value of that compensation was comparatively?

(i) Lesser than market rate (ii) Equal to market rate (iii) More than that

3.3 Were you satisfied by the assessed value of your acquired land? Yes / No

3.4 Had the amount of compensation sufficient for the construction of new house?

(i) Sufficient (ii) Hardly sufficient (iii) insufficient (iv) very much low

3.5 How you build your new house?

(i) By compensation (ii) By previous savings

(iii) By both compensation and savings (iv) By selling jewelry

(v) Built kacha house (v) Limited construction

3.6 Were you involved in the process of assessment of land value? Yes / No

3.7 Any litigation problem you faced during the award Yes / No

3.8 Any other problems during the award of compensation-----

3.9 Was the process of compensation smooth and transparent? Yes / No

If no, then detail -----

3.10 Were you satisfied with compensation? Yes / No

3.12 Nature of satisfaction

- (i) Satisfied (ii) Somewhat satisfied
(iii) Dissatisfied (iv) Strongly satisfied

SECTION IV: IMPACT ON FAMILY INTERACTION

4.1 Where are the rest of your relatives residing?

- (i) In same settlement (ii) in nearby settlement (iii) in far flung areas

4.2 Had your family scattered at different places? Yes / No

If yes then have you been any problem in mutual interaction? Yes / No

4.3 Had this scattering affected the family relationships? Yes / No

If yes then the nature of that impact?

- (i) Negative impact (ii) Positive impact (iii) No impact (iv) NA

4.4 What difficulties do you face in your interaction with each other? -----

4.5 In what ways the dispersion of families affected your mutual relationship? -----

4.6 Had your relatives easily accessible on any emergency? Yes / No

4.7 When do you visit usually to your relatives?

- (i) Often (ii) after some time (iii) rarely
(iv) on special occasions

4.8 Have you got settled near your homeland? Yes / No.

4.9 Are you satisfied with your present site? Yes / No.

Nature of satisfaction

- (i) Satisfied (ii) Somewhat satisfied
(iii) Dissatisfied (iv) Strongly satisfied

4.10 In your view, what would have been the best place for your resettlement?

- (1) Near homeland (2) Away from homeland (3) Anywhere (4) In developed areas

- 4.11 Why did do you opt for the present settlement? -----

- 4.12. Are you satisfied in new milieu? Yes / No
- 4.13 If satisfied then its reasons; -----

- 4.14 If dissatisfied then its reasons; -----

SECTION V: SOCIO-CULTURAL IMPACTS

- 5.1 Had you felt any change in your culture/ customs in new milieu? Yes / No
- 5.2 Were suitable measures made for your resettlement? Yes / No
- If yes, then were you satisfied with those? Yes / No
- 5.3 Any Psychological problem due to the project Yes / No
- If yes then its nature; -----

- 5.4 Did your life conditions improved after the project Yes / No
- 5.5 Did you pay water taxes? Yes / No
- 5.6 Did the Govt; fulfilled its promises? Yes / No
- 5.7 What are your views about the rehabilitation of affectees? -----

SECTION IV: SOCIO ECONOMIC IMPACTS

- 6.1 What was your profession before the project? -----
- 6.2 What is your profession now? _____
- 6.3 Did any of your family members get a job during the project phase? Yes / No.
- If yes, then
(a) No. of persons get job----- (b) Nature of job /post -----.
- 6.4 Did any of your family members get a job in Pakistan WAPDA? Yes / No.

If yes, then

(a) No. of persons get job----- (b) nature of job /post. -----.

6.5 Were you allowed to take material of you ex house? Yes / No

If yes then were you facilitated by the Govt in this regards? Yes / No

6.6 Did the Govt; take quick actions to provide alternative occupations? Yes / No

6.8 Do you have agricultural land now? Yes / No

If yes then

(i) How much? (area in Kanals) -----

(ii) Where? (District name) -----

6.9 What is source of irrigation?

(i) Tube well

(ii) Canal

(iii) Well

(iv) Others

(v) Barani

(vi) NA.

6.10 Did you face load-shedding? Yes / No

6.11 Which fuel do you use for cooking?

(i) Wood

(ii) cylinder

(iii) Both wood and cylinder

(iv) Sui Gas

(v) Wood and dung bel

6.12 Which colonies were bet planned?

(i) Dam's employees/ contractors colonies

(ii) Dam's affectees colonies

6.13 How it was best, explain?-----

Community Profile

Questionnaire No. -----

Name of community-----

Date-----

Settlement Category

- ***Planned townships in the vicinity of the project***
- ***Scattered self-developed settlements***
- ***People settled on allotted lands in Punjab.***

- 1 Is your settlement comprised of only Tarbela Dam’s affectees? Yes / No
If no then what is the ratio of the affectees? ----- (%)
- 2 Had clean drinking water facility provided to you by the Govt; just after your resettlement? Yes / No
If no then (i) how was that water? -----
(ii) what were its negative effects?-----

- 3 Is clean drinking water available in your settlement / sector now? Yes / No
If no then (i) How is that water?-----
(ii) How it is injurious to health?-----
- 4 What kind of the following medical centres were provided to you just after your resettlement? (Tick √ on available facility)
(i) Dispensary (ii) BHU (iii) RHC
(iv) Tehsil Headquarter Hospital (v) District Headquarter Hospital
- 5 What kind of the following medical centres are present now in your settlement / sector? (Tick √ on available facility)
(i) Dispensary (ii) BHU (iii) RHC
(iv) Tehsil Headquarter Hospital (v) District Headquarter Hospital

- 6 Are following medical facilities available in these centres?
- (i) Medical staff Yes / No
- (ii) Free Medicines Yes / No
- 7 What kind of the following educational institutions were provided to you just after your settlement? (Tick ✓ on available facility)
- (i) Primary School (Boys - Girls) (ii) Middle School (Boys - Girls)
- (iii) High School (Boys - Girls) (iv) College (Boys - Girls)
- 8 What kind of the following educational institutions are present now in your settlement / sector? (Tick ✓ on available facility)
- (i) Primary School (Boys - Girls) (ii) Middle School (Boys - Girls)
- (iii) High School (Boys - Girls) (iv) College (Boys - Girls)
- 9 What kind of the following facilities are present now in your settlement / sector? (Tick ✓ on available facility)
- (i) Mettled roads (ii) Telephone (iii) Electricity
- (iv) Sui Gas (v) Hujra (vi) Playground
- (vii) Park (viii) Public graveyard
- 10 Is there proper arrangement to dispose off the garbage of your houses Yes / No
- 11 Had your following utility bills were waived off after dislocation?
- (i) Electricity bill Yes / No
- (ii) Water bill Yes / No
- 12 Is your settlement registered in revenue record by its present name? Yes / No
- 13 Had you faced any problem in making your domicile certificate? Yes / No
- 14 Had officials treated you sympathetically at the time of resettlement? Yes / No
- 15 Had dislocation affected the social status of the affectees? Yes / No
- 16 Had resettlement in new sites impacted your social linkage with relatives? Yes / No
- If yes then its detail -----
- 17 Had resettlement in new Geographical milieu caused any psychological problem in the affectees? Yes / No
- If yes then its detail -----

- 18 Had resettlement in new environment impacted women's daily life? Yes / No
If yes then its detail -----
- 19 what commitments were made by the Govt at the time of your dislocation?

- 20 Which of these commitments were fulfilled by the Govt?

- 21 Had you awareness of your rights at the time of your dislocation? Yes / No
If no then its reasons-----

- 22 How was the response of the local community at the time of your resettlement?

- 23 What was the opinion of the local community about the affectees? -----

- 24 Had you got plots as a substitute of your evacuated Hujra and Mosque? Yes / No
If no then reason-----
- 25 Had you any common property in your affected village? Yes / No
- 26 Had you got compensation of that common property? Yes / No
- 27 What were main benefits you incurred from that common property?-----

- 28 Have you common property in your present settlements? Yes / No
If no then what are its impacts on affectees?-----

- 29 What kind of the following traditional institutions were present in your settlement at the time of dislocation? (Tick ✓ on available facility)
(i) Water mill (ii) Fishing (iii) Boating (iv) Curving
- 30 What happened to the persons engaged in these activities?-----

- 31 Had measures taken to provide them substitute means of earnings? Yes / No
- 32 What kind of crops you used to grow in your evacuated settlements?-----

33 What kind of crops you usually grow now? -----

34 Had proper measures taken for the expansion of your settlements? Yes / No

If yes then its detail-----

If no then its detail-----
