Journal of
Geography & Natural Disasters

Azhar, J Geogr Nat Disast 2016, S6
DOI: 10.4172/2167-0587.S6-009

Research Article Open Access

Resettlement in New Environment and Its Impacts on Socio-Cultural Values of the Affecters: A Case Study of Tarbela Dam, Pakistan

Rabih Azhar*

Department of Geography, Government Postgraduate College No.1 Abbottabad, Pakistan

Abstract

Man has constructed large dams on rivers to have a continue supply of water for drinking, irrigation, power generation and flood control. Although these large projects have many positive impacts benefiting large population and national interests. However, there are many examples of the so called development that induced displacement of people and disruption of social network and local institutions. The present study was carried out to analyze the impacts of changing environment on the displaced communities of the Tarbela Dam. It assess the dynamic socio-economic constraints by evaluating affecter's responses to the changes occurred in adopting new environment. Construction of the Dam adversely affected and dislocated the once stable socio-cultural fabric and values. As a result of dislocation local traditions and values are almost eliminated. Affecters still feel themselves misfit in new set up. The decision stated in point XII of the resettlement policy (village sites should be developed along the Periphery of the reservoir and elsewhere in Hazara in consultation with the affected people) was not strictly implemented as a result the affecters were dispersed and resettled on their own at different places in the districts of KPK and Punjab Provinces. Therefore, the present study has critically evaluated the above stated policy and tried to find out whether justice was done to these affected?

Keywords: Affecters; Environmental and social impacts; Involuntary resettlement; Rehabilitation

Introduction

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. So 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).

In Tarbela region there are three well-defined physical features, namely, the mountains, piedmonts and plains. There are two main mountain ranges in the study area i.e. Gandghar and Tanawal ranges. 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. Plains of the Tarbela area may be classified in to two types namely Khari plain and Hazara plain.

Toba Tek Singh District 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. Geographical extent of Toba Tek Singh is from 30°- 33' to 31°- 02' North latitudes and from 72°- 08' to 72°- 48' East longitudes. Total geographical area of the district is about 3252 km^2. The soil of the region is composed of alluvium with a mixture of loess which makes it very fertile and porous [1].

Literature Review

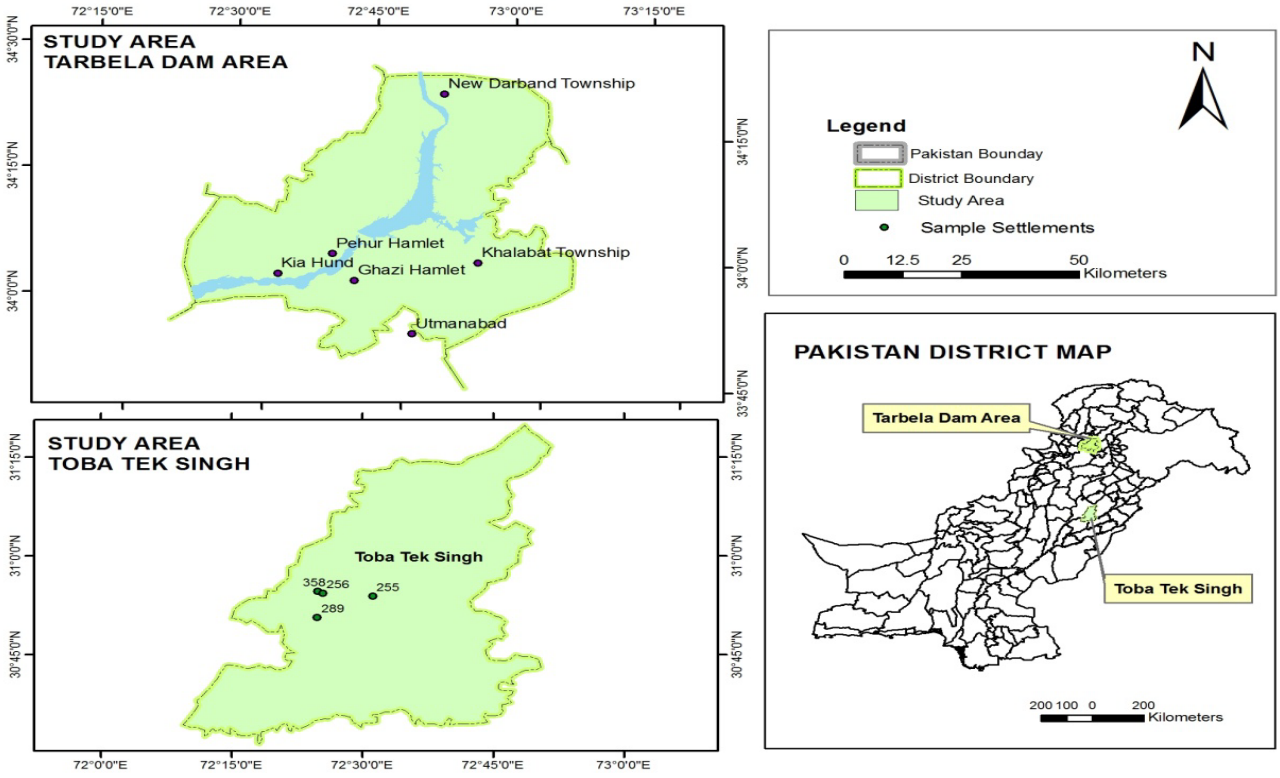
The literature on economic aspects like cost-benefit analysis of the water resource power projects is very rich and a lot of work has been done in different parts of the world including Pakistan. However, less attention has been paid to the social and cultural issues arising due to dislocation caused 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. The process of resettlement of affected people has not been remained satisfactory in most of the cases; so people have risen against their construction. It has become a very crucial issue in the world and a lot of agitation generated against dams on individual and organizational level. Brun [2] observed that displacement often leads to loss of home, possessions, and social networks. It also introduces the displaced persons to new places, people and environment. Construction of Tarbela dam coped the country's water and power needs. However, it submerged agriculture land and leads to innumerable sufferings of the displaced people [3].

Biswas, and El-Hinnawi, [4] stated that the literature review and discussions with the officials reveal that 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. As a matter of fact, 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

***Corresponding author:** Rabih Azhar, Assistant Professor of Geography, Government Postgraduate College No.1 Abbottabad, Pakistan, Tel: 0092-03015061656; E-mail: rabihazhar@gmail.com

Received December 06, 2016; **Accepted** December 27, 2016; **Published** December 30, 2016

Citation: Azhar R (2016) Resettlement in New Environment and Its Impacts on Socio-Cultural Values of the Affecters: A Case Study of Tarbela Dam, Pakistan. J Geogr Nat Disast S6: 009. doi: 10.4172/2167-0587.S6-009



Source: Survey of Pakistan.

Figure 1: Location map of the study area showing Tarbela Dam area and Toba Tek district.

countries. Judge [5] stated that the displaced families, after given some monetary compensation, were forgotten. Being critical on the socio-economic impacts he further questions: "what happened to their living conditions? Where did they resettle? Could they socially integrate in their new setting?" The Tarbela hydel project of Pakistan is one of them. The ever increase in population needs of the country and Indus Water Treaty compel us to look out for more resources, giving pressure on environment. So the question how the displaced people will make a living after displacement was not considered by project planners and handled by the government of Pakistan.

WCD [6] 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 resettles 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. Affecters were treated like animals and packed in Lorries to be moved to their new destination. Resettlement of a large number of people on too small areas further aggravated many problems. Social relations of the affected 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.

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 affected was utilized otherwise, and they had no money to construct their houses in the new colony [7].

Sardar Sarovar Project was the largest multipurpose water resource development project in India on river Narmada. The only resettlement policy applicable to that project 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 that project was a history of non-compliance. There was no comprehensive impact assessment. The nature and magnitude of environmental problems and solutions remain elusive. This gives airs to the controversy surrounding the projects.

WB [8] conducted out post project review of The Upper Krishna Project (UKP) which was completed in 1982. 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. 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.

UNEP-DDP [9] 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 affected 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 affected were not clearly informed of the fact that their properties would be taken forever.

WCD organized a study to review Tarbela Dam project. According to the report the eligibility criteria lacked the displacement rights for most of the affected 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 affected. No real attempt was made to integrate the ineligible affecters into new market and livelihood milieu. Due to lack of clear policy regarding the employment of ineligible affected, 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 affected of New Darband Township.

Significance of the study

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, globing 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 [10].

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. The present study is focused 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 affected 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 affected consisting of 13-point agenda. It is an attempt at finding out the ground realities by approaching the affected regarding the issues of allotment of land for residential and agricultural purposes. The study will be useful not only for the affected of Tarbela Dam but also for future resettlement plans for projects related to the water resource development not only in Pakistan but elsewhere in the world [11].

Research Methodology

Out of the various socio-economic indicators, only impacts on social network and mutual interaction have been discussed in this paper. Therefore, the paper deals mainly with the problems on livelihoods in relation to the displacement. In order to meet the above objective relevant data has been collected from both primary and secondary sources. The primary data has been generated by intensive fieldwork selectively conducted in ten displaced settlements with the help of a framed schedule through random sampling method [12-14]. Secondary data sources consist of books and journal articles, government publications, etc.

A multistage spatial probability/cluster-sampling technique has been adopted to collect household's data through questionnaire survey. On the basis of displacement categories the affected population has been grouped into three geographical strata/ zones according to the mode of their resettlement. The detail of these categories/ zones is given below.

- Planned townships (resettlement colonies) in the vicinity of the project (zone one)
- Scattered self-developed settlements (zone two)
- Settlements on allotted land in Punjab (zone three)

The resettlement townships and self-built settlements, where majority of the affected population has been resettled, lie in the KPK province. The affected were resettled on allotted land in districts of Toba Tek Singh, Jhang, Khanewal, Sargodah, Multan and Lodhran. So the survey universe of the study is these two provinces of Pakistan.

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. Self-developed settlements are located in Khyber Pakhtunkhwa and Punjab provinces [15-18]. So Kiya Hund from the Khyber Pakhtunkhwa province and Utman Abad from the Punjab province have been selected. Land was allotted to the affected mainly in the districts of Sargodha, Khaniwal, Jhang, Toba Tek Singh, Multan and Lohdran of Punjab province. From settlements on allotted lands Toba Tek Singh District has been selected as a sample area

For the true and proportionate representation of the whole community, a two stage stratified sample design has been adopted for this study. In first stage primary sampling units were taken. Four townships were randomly taken from first zone, one settlement each from zone two and one district (Toba Tek Singh) from zone three.

In next stage secondary sampling units were taken. Planned townships were comprised of various sectors so from each colony one sector has been selected randomly as a sample unit. Kiya Hund and Sultanpur were selected from self-built settlements [19]. Four settlements namely GB 255, GB 256, GB 289 and GB 358 of Toba Tek Singh district have been randomly selected for detail study from the third zone (settlement on allotted lands).

Then the households were selected from each secondary sampling

unit. A sample size of 400 households enumerated from 10 sampling units was considered sufficient to produce representative picture of the sample categories [20]. To investigate the changes in social values of the displaced peoples, structured interviews were conducted in 2009 (Table 1).

For analytical evaluation of the impacts, the data collected have been processed by using statistical technique SPSS-PC. Chi-Square test was applied to find out statistical significance of the variables. Phi and Spearman correlation 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 [21].

Research variables

To bring out the impacts of resettlement on Tarbela Dam affectees the level of satisfaction/sufferings of the affected communities is treated as the dependent variable. Independent variables of the study were: 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 etc.

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 affected 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.

Method of data collection

The socio-economic and cultural environment of the study area was assessed through questionnaire method. For this purpose 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.

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.

Data analysis

For data analysis a statistical technique SPSS-PC was used. Information collected through sample questionnaire survey and other sources was coded and then data was analyzed by using relevant statistical techniques. Quantitative and Cartographic techniques were used for the analysis and presentation of acquired information. Computer based cartographic technique (Free hand software 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.

Discussion and Analysis

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). 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

Name of Settlement	Sector surveyed	Household (Total)	Household (Affecters)	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.

Table 1: Tarbela Dam Affectees, sample design.

should be ensured in these newly developed areas. Plots should be sold to affected 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 affected 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 affected 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 affected. 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 affected 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 that was issued to the displaced persons containing the necessary information and verification. To receive an allotment receipt, the affected 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. Affecters displaced first were provided alternate land in the Punjab. First of all the affected 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 affected were unable to purchase alternate land with the cash compensation received from the government.

Impacts on social interaction/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 affected, 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.

In case of Tarbela Dam the dislocation left negative marks on socio-cultural fabric and values of affected. Analysis of the field data shows that nearly two third (65.5%) of the respondent reported that dislocation negatively impacted their social life and mutual interaction among the families. Remaining 34.5% replied that project has no impact on their social life. These affected were those whom relatives were resettled either in the same settlement or in nearby areas. Category-wise details of responses of the affected population in this regard are shown in Table 2.

Dispersion of the families

On the basis of field data analysis it becomes clear that after dislocation the affected were dispersed in different areas. Nearly two third (65.5%) of the respondent 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 backed on heat. Remaining 34.5% respondents replied that their relatives have been resettled either in the same settlement or in nearby areas. Respondent's perception is shown in Table 3 which explains the situation more clearly.

Impacts on family linkage

Due to dislocation the affected population has been dispersed in various parts, which resulted in breakage of family linkages and mutual interaction. The pattern of usual visit among the affectees is shown in Table 4. Field data shows that more than two third (71%) of the respondents usually visit to their relatives only on special occasions due to long distances between their places of residence. Only 3.45% replied

Impacts on social interaction			Settlement Category			Total
			Resettlement Colonies	Self-built settlements	Settled on Allotted land	
	No impact	Count	120	23	0	143
		%	43.2	40.4	0	35.8
	Negative	Count	34	6	12	52
		%	12.2	10.5	18.5	13
	very negative	Count	124	28	53	205
		%	44.6	49.1	81.5	51.3
Total		Count	278	57	65	400
		%	69.5	14.3	16.3	100

Source: Field Survey 2009.

Table 2: Tarbela Dam Affectees, Zone-wise Impacts on social interaction.

Other relatives resettled			Settlement Category			Total
			Resettlement Colonies	Settled on Allotted land	Self-built settlements	
In nearby area	Count	Count	120	0	23	143
	%	%	43.2	0	40.4	35.8
Far furlong areas	Count	Count	158	65	34	257
	%	%	56.8	100	59.6	64.3
Total	Count	Count	278	65	57	400
	%	%	69.5	16.3	14.3	100

Source: Field Survey 2009.

Table 3: Tarbela Dam Affectees, Category-wise areas where other relatives resettled.

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	19.80%
Some times	Count	40	3	14	57
	%	14.4	4.6	24.6	14.30%
Rarely	Count	28	15	5	48
	%	10.1	23.1	8.8	12.00%
On special occasion	Count	138	47	31	216
	%	49.6	72.3	54.4	54.00%
Total	Count	278	65	57	400
	%	69.5	16.3	14.3	100.00%

Source: Field Survey 2009

Table 4: Tarbela Dam Affectees, Category-wise detail of Usual visit to relatives.

that they rarely visit their relatives while 14% of them replied that they visit some time. Small proportions (12%) of respondents were of the view that that they have close link with their relatives and they visit often to their relatives (Figure 2).

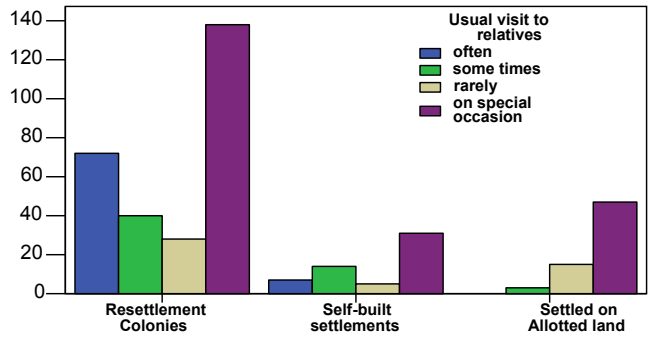
Association between variables - "relatives resettled" and "Impacts on social interaction"

Chi-square tests were applied to determine if there is a statistical significant relation between the two variables. Cross tabulation between these variables are shown in Table 5. Smaller P-value (0.000) indicates that resettlement place of other relatives and its impacts on social interaction are associated variables i.e. the impacts on social interaction depends upon the place where other relatives were resettled. Correlation between these variables is statistically significant because the value of sig. (p) is 0.000, which is less than 0.05 as shown in Table 6. Phi and Kendall's tau-b Correlation values were 1.0 and 0.880 respectively indicating that effect size was quite high. So the Null hypothesis can be rejected on the basis of these findings its full detail is given below in Table 7. The association is positive which means that as the dispersion of relative's increases, their impacts on social interaction also increases in same sequence and vice versa.

Problem of integrating to the host community

The Affecters had the problem of fitting into the new geographical milieu. The host community had not cordially willing to receive the resettles because they share land and other resources with them. The local people were enjoying these resources without any interruption. When asked to express their views about their satisfaction with the present site; nearly 44% of them replied that they were satisfied at their present site of resettlement. Remaining 56% 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. Its detail is shown in Figure 3, which gives it diagrammatical view.

Dislocated people had many difficulties in incorporating themselves into the new geographical environment. Especially first generation did not become properly incorporated in host villages even after many years of dislocation. From the findings of present study, it becomes clear that there is strong relationship between the age group of the respondents and their level of dissatisfaction on the present site. Table 8 brings up an interesting observation in this regard. They were asked the question



Source: Field Survey 2009.

Figure 2: Category-wise detail of usual visit to relatives.

Other relatives resettled		Impacts on social interaction			Total
		No impact	Negative	very Negative	
In nearby area	Count	143	0	0	143
	%	100	0	0	35.8
Far furlong areas	Count	0	52	205	257
	%	0	100	100	64.3
Total	Count	143	52	205	400
	%	100	100	100	100

Source: Field Survey 2009.

Table 5: Tarbela Dam Affectees, Other relatives resettled and Impacts on social interaction.

	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		

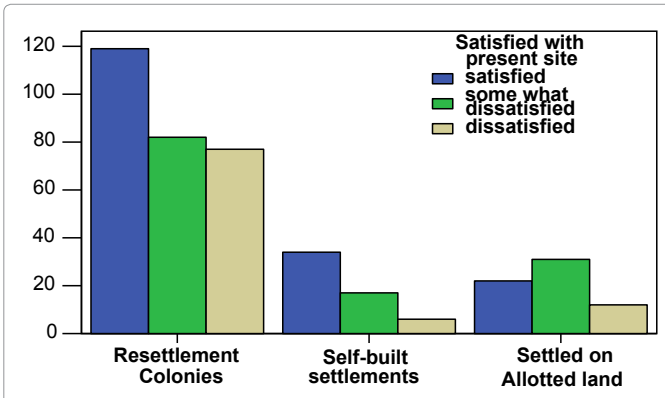
Source: Field Survey 2009.

Table 6: Tarbela Dam Affectees, Chi-Square Tests.

		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

Table 7: Tarbela Dam Affectees, Symmetric Measures.



Source: Field Survey 2009.

Figure 3: Affecter's satisfaction with present site of residence.

Respondent Age		Satisfied with present site			Total
		Satisfied	somewhat dissatisfied	dissatisfied	
Below 40 years	Count	45	3	0	48
	%	25.70%	2.30%	0.00%	12.00%
40 to 49 years	Count	65	25	7	97
	%	37.10%	19.20%	7.40%	24.30%
50 to 59 years	Count	49	63	29	141
	%	28.00%	48.50%	30.50%	35.30%
60 years & above	Count	16	39	59	114
	%	9.10%	30.00%	62.10%	28.50%
Total	Count	175	130	95	400
	%	43.70%	32.50%	23.80%	100.00%

Source: Field Survey 2009.

Table 8: Tarbela Dam Affectees, Respondent Age and Satisfied with present site.

whether satisfied or not at the present site, an overwhelming majority (62.1%) of the respondents of age group above 60 years were not satisfied with the present site. Among the age group below 40 years, the trend was different and no one showed dissatisfaction in this regard.

Chi-square tests were applied to determine if there is a statistical significant relation between the two variables. Smaller P-value (0.000) 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 9). Correlation between these variables is statistically significant because the value of sig. (p) is 0.000, which is less than 0.05. Thus on the basis of these results we can reject the null hypothesis of no association between these variables.

Symmetric measures provide the strength of association / relation or effect size between two variables i.e. respondent age and satisfied with the present site. These results are shown in Table 10. Phi, and Spearman Correlation values were 0.600, and 0.565 respectively indicating that effect size is larger than typical. The association is positive which means that as the age of respondent's increases, their level of dissatisfaction also increases in same sequence and vice versa.

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 for 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 category-wise detail is given in Table 11.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	143.918(a)	6	0
Likelihood Ratio	154.583	6	0
Linear-by-Linear Association	124.466	1	0
N of Valid Cases	400		

Source: Field Survey 2009.

Table 9: Tarbela Dam Affectees, chi-square tests.

		Value	Approx. Sig.
Nominal by Nominal	Phi	0.6	0
Ordinal by Ordinal	Kendall's tau-b	0.504	0
	Spearman Correlation	0.565	0
N of Valid Cases		400	

Source: Field Survey 2009.

Table 10: Tarbela Dam Affectees, Symmetric Measures.

Suitable place for resettlement		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
Near native land	Count	256	65	57	378
	%	64.00%	16.30%	14.30%	94.50%
any where	Count	2	0	0	2
	%	0.50%	0.00%	0.00%	0.50%
In developed area	Count	20	0	0	20
	%	5.00%	0.00%	0.00%	5.00%
Total	Count	278	65	57	400
	%	69.50%	16.30%	14.30%	100.00%

Source: Field Survey 2009.

Table 11: Tarbela Dam Affectees, Affectee's view about best place for resettlement.

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 affected 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 12.

Summary and Conclusion

Dislocation of affected 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.

Affecters 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

Impacts on social interaction		Settlement Category			Total
		Resettlement Colonies	Settled on Allotted land	Self-built settlements	
No impact	Count	120	0	23	143
	%	43.20%	0.00%	40.40%	35.80%
Negative	Count	34	12	6	52
	%	12.20%	18.50%	10.50%	13.00%
Very negative	Count	124	53	28	205
	%	44.60%	81.50%	49.10%	51.30%
Total	Count	278	65	57	400
	%	69.50%	16.30%	14.30%	100.00%

Source: Field Survey 2009.

Table 12: Tarbela Dam Affectees, Category-wise Impacts on social interaction.

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 affected (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.

Recommendations and Suggestions

In the light of present study some recommendations are proposed for better resettlement planning for the future projects.

1. Since resettlement planning involves critical decisions about the future of the displaced population, it is very necessary that active participation of the resettles should be ensured during the whole planning process, especially during the execution phase.
2. The people of dislocated settlements should be resettled in the close vicinity of the project because dislocation not only impacts economic and cultural conditions but also the social fabric of local communities.
3. Purposively designed policies may be designed to integrate host and resettles relationships and to rebuild new social networks.
4. For the economic uplift of the affected population an Industrial estate should be established and keeping in view the physiological and socio-cultural characteristics of the area, environment friendly cottage industry should be planned. It is also in accordance with the mandated guidelines of the World Bank.

References

1. Government of Pakistan (2000) District Census Report of Attock, Haripur, Mansehra, Swabi, Toba Tek Singh 1998. Population Census Organization, Statistical Division, Government of Pakistan, Islamabad.
2. Brun C (2005) Internal Displacement. FMO Research Guide.
3. IRN, FOE (2003) Dammed Rivers, Damned Lies What the Water Establishment Doesn't Want you to know. FOE & IRN, Japan.
4. Biswas AK, Hinnawi EE (1981) Renewable sources of energy and environment. Tycobly international, Dublin, Ireland.
5. Judge PS (1997) Response to Dams and Displacement in Two Indian States. Asian Survey 37: 840-851.
6. WCD (2000) Dams and Development: A New Framework for Decision-Making. World Commission on Dams, London.
7. Dalua AK (1993) Environmental impacts of large reservoir projects on Human settlements (A case study of upper Kolab project in Orissa). Ashish Publishing house, India.
8. World Bank (1998) Recent Experience with Involuntary Resettlement. Thailand - Pak Mun, Operations Evaluation Department, the World Bank.
9. UNEP (2004) Addressing Existing Dams. United Nations Environment Programme Dams and Development Project (DDP).
10. Lewis GJ, Walmsley DJ (1985) Human Geography, Behaviuoral Approaches. Longman, Newyork.
11. Adams WM (2000) The Social Impact of Large Dams: Equity and Distribution Issues. Secretariat of the World Commission on Dams, Cape Town, South Africa.
12. Azhar R (2001) Environmental and Socio-Cultural impacts of Ghazi Barotha Hydropower Project on Ghazi Tehsil. Department of Geography Urban & Regional Planning, University of Peshawar, Pakistan.
13. Baboo B (1991) Rehabilitation of dam oustees: a comparative study of partly vs. fully submerged villages in Orissa. The Indian Journal of Social Science 4: 287-306.
14. Choy YK (2004) Sustainable Development and the Social and Cultural Impact of a Dam-Induced Development Strategy-the Bakun Experience. Pacific Affairs 77: 50-68.
15. Foundation SD (2007) The submerged speak. oral testimonies of Tarbela affectees. Sungi Development Foundation, Islamabad, Pakistan.
16. Government of Pakistan (2009) Office record. Nucleus Clearance Cell, WAPDA, Tarbela Dam, Pakistan.
17. Hall MJ (1986) The social and environmental effects of large dams. Land Use Policy 3: 152-165.
18. Jain SK, Singh VP (2003) Environmental and social considerations. Developments in Water Science 51: 395-458.
19. Leech NL, Barrett KC, Morgan GA (2005) SPSS for Intermediate Statistics: Use and Interpretation. Lawrence Erlbaum Associates, Publiisher, New Jersey, London.
20. Rosenberg DM, Bodaly RA, Usher PJ (1995) Environmental and social impacts of large scale hydroelectric development: who is listening? Global Environmental Change 5: 127-148.
21. Sadler B, Verocai I, Vanclay F (2000) Environmental and Social Impact Assessment for Large Dams - Thematic Review from the Point of View of Developing Countries. World Commission on Dams (WCD).

This article was originally published in a special issue, **Environment: Globalization and Urbanization** handled by Editor. Dr. Raymond J. Dezzani, University of Idaho