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Les espaces ruraux et leur développement

Title:

**Social network legitimacy, Property right loopholes and Land use conflicts:
Evidences from an infrastructural water project in Pakistan**

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Abstract

Little attention has been devoted to the role of social networks and property rights in infrastructural development projects. We use Chotiari water reservoir project data from Pakistan, in order to explore social network of actors on land use as well as property right violation, which have created dissimilar power distribution and significant land use conflicts. This research investigates the mechanisms of rural social discrimination by analyzing that how public officials with their alienated stakeholders have pressurized local population to displace in the name of development. The study shows that institutional inconsistency towards justice has lead indigenous people in mistrust and the project opposition. Thus, attention to such conflicts, their resolution and prevention is an important area for research and policy development.

Keywords: land use conflicts, social networks, property rights, dams, reservoirs

JEL code: D74, L14, P26, H54

Introduction

Infrastructural development settings have a great importance in developing countries, because they can enhance the living standard of local population and help them to have access to scarce resources like water or education (Kim, 2006; Barron et al., 2004; Shah, 1992). But at the same time some of these projects have interrupted millions of lives, due to their poor level of concentration and inconsideration of the need of local actors (UNEP, 2004). Mostly, the projects are being initiated in rural settings, where indigenous people stand to lose their resources if the project alters their livelihood support. Therefore, the need for such projects must be severely assessed, and the compensation of local population will only be possible if they prove ownership of damages by the project.

It is commonly understood that in these rural areas most of the indigenous people share common-pool resources (CPR), associated with lack of social justice and recognized rights (Ostrom, 1990). Recently, this issue has started to occupy a key position in social and political research, linked with the need to solve the conflicts related to land uses exclusion and competition. The increasing interest for the rights of local populations nowadays gives birth to reflections about the actual foundations of infrastructure projects, and to the legitimacy of the opposition of local stakeholders when there are not associated to the decision. Additionally, there is a raising concern with the question of good local or territorial governance as a source of economic development of the states and the regions (Torre and Traversac, 2011), as well as a virtuous way to promote land use conflict resolution.

The existing approaches - literature - emphasize that not all governments have been successful in project implementation (Ostrom and Nagendra, 2006). And nowadays, one has to admit that the construction of infrastructural projects is sometimes associated with tensions and confrontations between the groups of actual and outside actors (Awakul and Ogunlana, 2002). Currently, in the developing countries most of the projects are facing oppositions, whereas it may be due to partial advice with local actors or violation of their rights towards land acquisitions and compensation.

This action research has been carried out on the case of Chotiari water reservoir project in Pakistan, because it puts light on the limits of some infrastructure settings and on the damages caused to local inhabitants. The Chotiari project is one of the large infrastructural projects, which is facing opposition in the country. In order to understand the factors of conflict on land use for the large infrastructural project, thus it is needed to examine the relationship network of actors at various scales and positions as well as the immunity of social justice for locally displaced population.

Moreover, through this paper we try to explore irresponsible treatment of stakeholders to local population. In addition, we investigate the basic information about the situation and their consequences, which provoked oppositions over Chotiari land. Further, the following sub-sections give insights to the research design for data collection and main findings of the case in detail. However, in this article we highlight the dynamics of social networks that are induced by changes from a conflict analysis process. By drawing the assumptions of functional analysis of confrontations, we identify the networks of actors while opposing and favouring the project, i.e., outside stakeholders and local inhabitants. This analytical framework opens up many questions about the nature and economics of network legitimacy with respect to the property rights and the use of actor's power, which have so far been partially addressed.

Moreover, the findings will be helpful in bridging gap between farm-land use and the behaviour of the actors causing oppositions on resource use. Our approach is essentially empirical and is based on our experiences about the Chotiari water reservoir construction in Pakistan. The principle findings are grounded on qualitative and quantitative exploitation of two sources of proxy data on conflict: the daily press and the opinions of experts in the study area.

In the first part of the article, we illustrate evidences from our case study regarding the causes and consequences of the project. The next part emphasizes about the portraits of social network relations, which drawn on the basis of manifestations and the positions of stakeholders in order to bring-out the actual picture of the network legitimacy in response to land use conflicts. Besides that we also disclose the factors of conflicts and their contribution into the conflict. Finally, we compare the theory of land acquisition and the types of properties usually selected for the infrastructural projects to our findings.

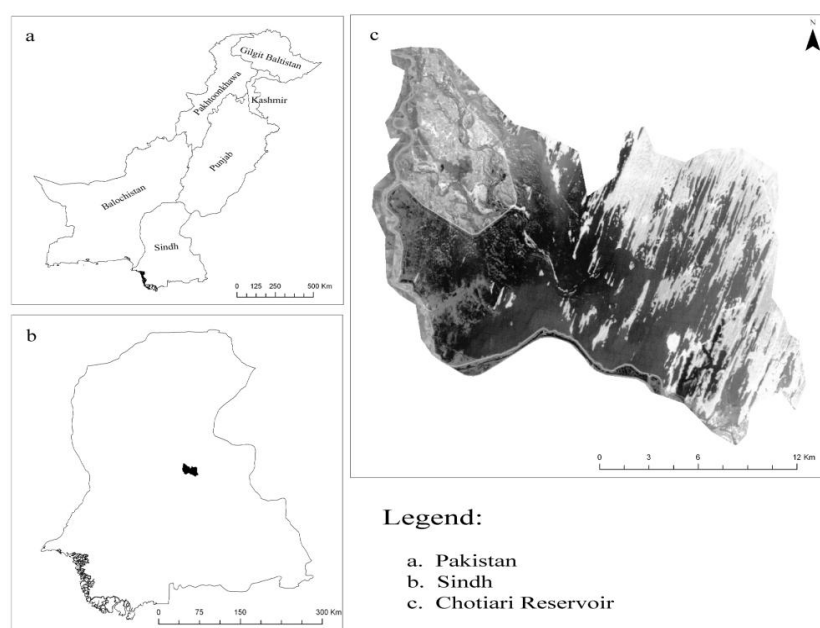
1. Outline of the case study area and actors involved

The case of the Chotiari water reservoir project from Pakistan (see figure 1) has been selected for its representative character of land use conflicts related to water infrastructure settings. The project has been designed and implemented to increase the storage capacity of existing lakes, it was aimed to irrigate 0.12 million hectares of virgin land in south-eastern districts of the country, which is inflated over entitled and un-entitled lands of eighteen thousand hectares (Nauman et al., 2001). The Chotiari reservoir area was characterized by socio-economic, geographical and/ or environmental importance. It comprised over small lakes, swamps, irrigation channels and agricultural lands, providing an ecological richness in the region (WWF, 2008) and also supported for grazing, fishing and a range of agricultural activities.

Generally, the water reservoirs have been part of human evaluation, history and development, if they are built with the intention to improve human quality of life, and vice versa. But the confrontations over the construction of big reservoirs/dams have grown into intense policy debates in numerous countries around the world during the last decades (UNEP, 2004). The Chotiari reservoir project has created opposition between the local economic actors (fishermen, agriculturists, livestock-herders and others) and the stakeholders from public administration, which have represented to national and provincial departments. The administrative were often with very different political positions and bureaucratic approaches, thus all this made the task of bringing-off this project more complicated. Moreover, the Chotiari wetland area has also been attracted by series of lobbies with very diverse interests, i.e., land lords, politicians, hunting groups, etc. However, the local actors led to defend the livelihood and environmental values of local populations of the wetlands by opposing the planning proposal.

Therefore, the characteristics of Chotiari water reservoir make this area interesting particularly for the study of land use conflict phenomena. For example, since construction period the opposition was drawn by displaced families to stop the construction and to assist or compensate people before displacement (Magsi, 2010). Moreover, some voluntary organizations also supported their cause and suggested to the public authorities to suspend the project until there was a proper feasible study. The protest continued from time to time, but the authorities have constructed and inaugurated the project on February 2003.

Figure-1: Location of the Chotiari water reservoir



2. Methods: data collection

In order to fulfil the objectives of this study, data were collected through various sources. Primarily, the structured interviews have been conducted from selected experts of administrators (water and irrigation sector), researchers and legal experts, private organizations, for their opinion on this issue during field visit of the affectees of the Chotiari reservoir (see table 1). Besides that, few affected family heads have also been interviewed, in order to extract first-hand information and to compare with the views of other selected experts.

These interviews were conducted with semi-planned questionnaires, where some questions were omitted in order to be asked according to the expert's position, situation and experiences, because not all experts belonged to the same professional backgrounds. These expert opinion interviews have been conducted in order to collect data on main variables, i.e., (1) pre-conflict situation of the area and position of the actors, (2) behavioral approaches of institutions towards land acquisition and compensation process and (3) the reservoir consequences.

Table1: Experts of diverse backgrounds

Categories	Interviewees
Private organizations (NGOs and journalists)	10
Researchers and legal experts	9
Administration (water and irrigation sector)	7
Affected family heads and landlords	6
Total	32

Note: Expert opinion survey conducted in November and December 2010

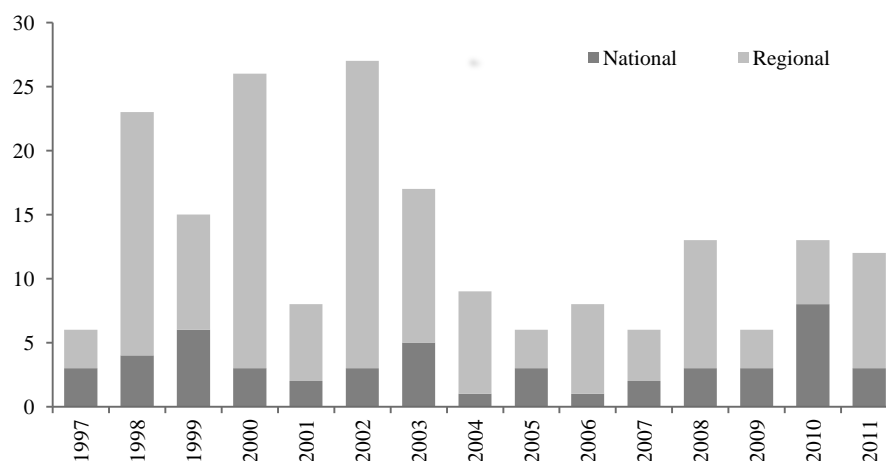
Secondary source of data is considered as more reliable and helpful in highlighting cross-checked facts about the study. This secondary information was gathered through regional and national dailies, in order to extract true picture of the tension and conflict situations and their causes and consequences. Although this data collection technique is not very commonly applied it is imperative source in land use conflict analysis in order to understand the public voice on pre-, during- and post-conflict situations (Torre et al., 2010; Awakul and Ogunlana, 2002; Mc-Carthy et al., 1996; Rucht et al., 1999). Due to lack of digital libraries or online access to regional dailies, therefore, the offices of selected regional news press have been personally visited as well as the papers were also collected from offices of the local community based organizations (CBOs). Whereas, the news published in national dailies were collected by downloading directly from their sites. The review for deep analysis of conflicts in these newspapers was conducted in the library of SAD-APT, INRA AgroParisTech. During the analysis important care has been taken to avoid unreliable information. Moreover, an additional secondary data for the study have been collected by analyzing published material from various public and private organizations. By gathering the two sources (interviews and daily press) we hope to be able to collect nice information and to avoid too many biases in the data selection.

3. Findings

3.1 Principle controversies

The results from the case study provide the phenomenon of the controversies during construction period. Therefore, such restlessness encouraged local journalists to demonstrate their issues as well as opened ground for many researchers to play a vital part in the conflicts resolution (see figure 2). In fact, more than eighty percent of the articles (of total published news/articles on this issue) reflected that there has been significant wrong doing associated with the land acquisitions, compensation and resettlement plans.

Figure 2: Number of articles published in the press about the Chotiari case



Source: Authors calculation based on daily regional and national press (1997-2011)

For this study we have selected 10 regional dailies out of 21 (which publish in local languages) and 6 out of 30 national dailies (in Urdu and English languages) since 1997-2011 (see Annex A). The newspapers have been selected on the basis of their reliability in terms of their news publishing through first-hand information and easily reachable to the far-flung

areas of the province. The news/articles were selected from regional or national dailies through a pre-defined criterion¹. Moreover, we have entered only a single selected entry for each date, when some times the same information has been published by all the newspapers on the same date. Furthermore, the articles have been categorized as (i) origins of the situation/conflict, (ii) modes of actions and (iii) consequences (economic, social or environmental) of the project.

The daily press indicated various groups of evocative thematic titles: “respect our traditional activities”, “save our natural resources”, “to stop displacing local people”, “to stop dam construction”, etc. This reflects the fact that activities of local population were highly depending on this area. Analyses of these titles show the strong link between natural and traditional activities. This reflection of our case study helps to explain the process of conflict in the region. Beside this there are also suggestions for other economic activities: “to promote tourism”, “to protect wetlands² as a national park”, “to protect natural life”, etc, which could combine all natural economic system and could create employment opportunities to the local communities with a positive image. Thus, the area could serve as a profitable asset towards regional development.

On the other hand, during construction period, several mission teams have been sent by World Bank and other donor agencies in order to monitor the construction and rehabilitation schemes, when they find the use of low quality material and mismanagements in the compensation related schemes (Abro, 2001). At the same time, tensions were raised among seven communities of Chotiari wetland area when public officials pressurized local population to leave their ancestral properties and to move out, without any proper relocation relief. According to majority of experts the families which lived in the area for many generations had been forced to vacate their lands. Even though the tensions increased in the area, mitigation measures were not designed to counterbalance the adverse socio-economic and environmental effects. However, both the experts as well as the daily press emphasized that there were involvement of local politicians and big land lords, because they had their hidden interests, may be of fishing contracts after the reservoir construction or of dispossessing local population from their ownership rights for favouritism, etc. Therefore, the principle tensions and controversies have been highlighted as follows (see table 2).

¹ A standard selection procedure of articles was unmanageable due to different languages (Sindhi, Urdu and English); in this regard the news/articles have been searched by specific keywords. Where the selected keywords followed by the word “Chotiari” are as: affectees, agriculture, benefits, conflicts, costs, dam, development, displacement, ecology, economy, environment, fishing, press-conference, project, protest, rehabilitation, reservoir, and wetlands.

² The wetlands are defined as permanent or occasionally inundated areas, with static or flowing of fresh, brackish, or salt water. Characteristically, wetlands possess the properties that (i) the land should support animals or plants, which are adapted to and dependent on living in wet conditions, and (ii) the predominant substratum of un-drained soils, which are saturated, or flooded long enough to develop anaerobic conditions in the upper layers.

Table 2: Principle controversies and oppositions

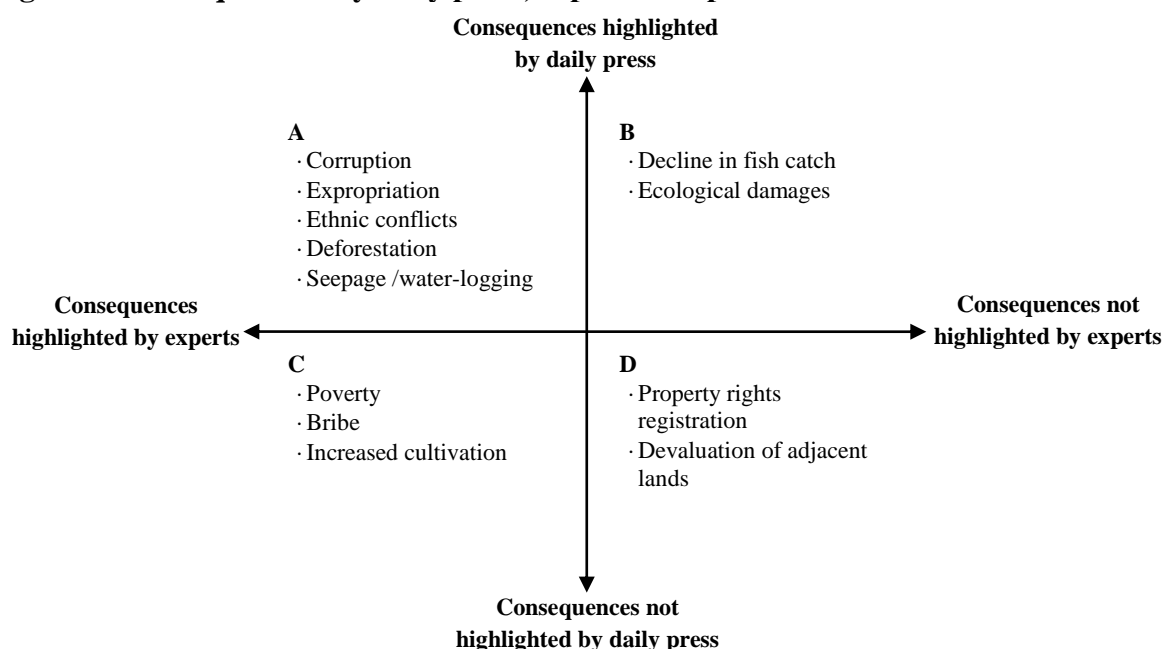
Confrontations on...	...between...	
Construction (Top-down decision and corruption)	World Bank and donor agencies	Planning authorities
Compensation (Land acquisition, displacement, unemployment and violence)	Planning authorities and Police	Local communities
Injustice (Negligence from courts, misuse of power and ethnic disputes)	Administrative Courts, Landlords/feudal and Local politicians	Local CBOs
Natural resource (Deforestation, seepage and waterlogging)	Authorities and Local communities	Local communities

Source: Authors realization based on expert opinions, field and literature survey.

3.2 Consequences of Chotiari reservoir project

This is obvious that any development related project has consequences positive as well as negative. Here, we want to disclose the consequences (either positive or negative) of the Chotiari project highlighted by the daily press as well as by experts in the study area (see figure 3, category A, B and C, while consequences categorized as D are based on discussions with laymen³ for their observations on the conflicts and consequences of the project, which are not highlighted by either sources).

Figure 3: Consequences: by daily press, experts and personal observation



Source: Authors extraction based on expert opinions, daily press (1997-2011) and laymen observations during field survey

³ To acquire the actualities of Chotiari reservoir conflicts and issues, various informal discussions have also been made with unknown people from Chotiari peripheral area during field trips and visit to experts for interviews.

In socio-economic terms, in Pakistan most of the people belong to lower class and live in rural areas, where agriculture, livestock keeping and fishing are considered as the main sources of income. According to recent survey the expenditure of rural people on basic amenities has increased by more than ten percent (in last five years), where they have received no additional income that caused more insecurity in the country (Government of Pakistan, 2010). On the contrary, if those people are dispossessed and their lands either been used for some development projects or spoiled due to water-logging⁴ and seepage, it will ultimately cause poverty. In the case of Chotiari water reservoir the water-logging/seepage is directly associated with the increase in water level, which has not only damaged adjacent lands but also devaluated the surrounded lands.

3.3 The network dynamics of stakeholders

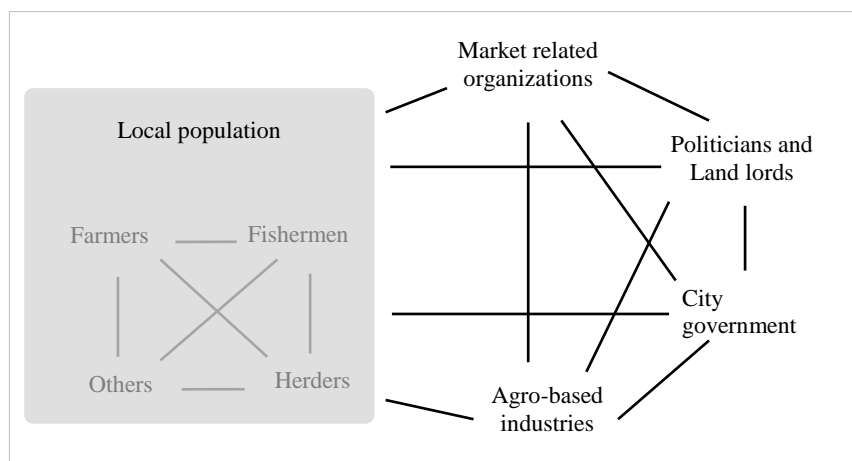
Network dynamics deals with the analysis of relational structures where actors (individuals, associations, businesses, government, etc.) are defined and studied by the ties they developed to each other. In this section we focus on social network dynamics in the Chotiari area in order to reveal the way stakeholders of the land use created dissimilar social power distribution, and how their relations have shaped oppositions and conflicts in the region. We want to identify the dynamics at work during the long process of conflicts, and to pinpoint the main actors in opposition and their strategic behaviours.

3.3.1 Social networks of local actors

Social network provides with different forms of interactions between people, actors or stakeholders, etc. The notions on such networks of individuals or group have been widely provided by sociologists, psychologists, anthropologists and/or geographers since 1970s (see for example Granovetter, 1973; Scott, 1991; Grossetti, 1992; Wasserman and Faust, 1994; Saint-Charles, 2001; Cadoret, 2006). Social network analysis defines the central aim of actors in which they are connected for the range of disparate activities to other actors, where their relations can vary in nature and types of activities i.e., power exchange, friendship, etc. (Forsé and Langlois, 1997). Whereas, social network analysis provides the methods for the analysis of structures towards relational aspects of those structures (Scott, 1991). The graphical representation of social networks can help in visualizing and formalizing qualitative relationships between actors (Cadoret, 2006), where first step is to identify actors and their relations (Saint-Charles, 2001). In this regard we present the pattern of thought based on the daily press, expert opinions and interviews of affected households in the study area. Thus, following graphical representation is developed to highlight the social interactions of different actors before announcement of Chotiari project (see figure 4), and after.

⁴ In water-logging situation the water stagnates and saturates the land surface, where this condition is inappropriate for agricultural activities.

Figure 4: Principle network of Chotiari reservoirs' local stakeholders (before announcement of the project)



Source: Authors realization based on expert opinions, field and literature survey.

The above figure unveils how local populations of Chotiari wetlands were locally connected with each other (left) and outside stakeholders (right) before the setting of the reservoir. The local population comprised on fishermen, farmers, herders and other actors, which carried out their economic activities on the agricultural and wetlands inside the Chotiari reservoir area. The figure also shows that these actors were connected with other stakeholders of the nearest city (Sanghar), which is located about 35 kilometres far from the reservoir (Magsi, 2010).

The relation of local population to other actors was based on the collective interests of livelihood survival, i.e., marketing their produce etc. According to majority of the experts they used to come to Sanghar early in the morning to sell their products (fish, vegetables, milk, honey and hand crafts, etc.) in the market and went back to their villages. However, few experts have also indicated that relations between the local populations were not always positive. The cause of actors' uneven relations maybe due to the fact that local people used to live in isolation and scattered on sandy dunes inside reservoir area, and/or may be due to ethnic diversity (different castes) among local population.

3.3.2 Actors with favour and opposition

While assessing the network results of the stakeholders we faced some complexities of placing the actors at their right places with respect to their centrality or closeness to other actors. The aim of this analysis is to show actors actual position either in support to construct or to oppose the Chotiari reservoir.

Here we show the actors who were actively linked together in support to construct the reservoir (see figure 5). Concerning this network, Nauman et al. (2001) have pointed out that the project was planned at national level (by federal government and funded by international agencies), where provincial actors were dictated to implement the project.

Diagram illustrating the relationships between various stakeholders in the Sindh water sector, centered around the Water and power development authority (WAPDA).

Stakeholders and their relationships:

- World Bank & other donor agencies** (Connected to WAPDA with a thick line, indicating a strong desire for change).
- Planning Commission of Pakistan** (Connected to WAPDA with a thin line, indicating an alliance).
- Pakistan environmental protection agency** (Connected to WAPDA with a thin line, indicating an alliance).
- Local politicians and landlords** (Connected to WAPDA with a thick line, indicating a strong desire for change).
- Sindh forest department** (Connected to WAPDA with a thin line, indicating an alliance).
- Sindh irrigation and drainage authority** (Connected to WAPDA with a thin line, indicating an alliance).
- Police department** (Connected to WAPDA with a thin line, indicating an alliance).
- Local politicians and landlords** (Connected to Police department with a thick line, indicating a strong desire for change).

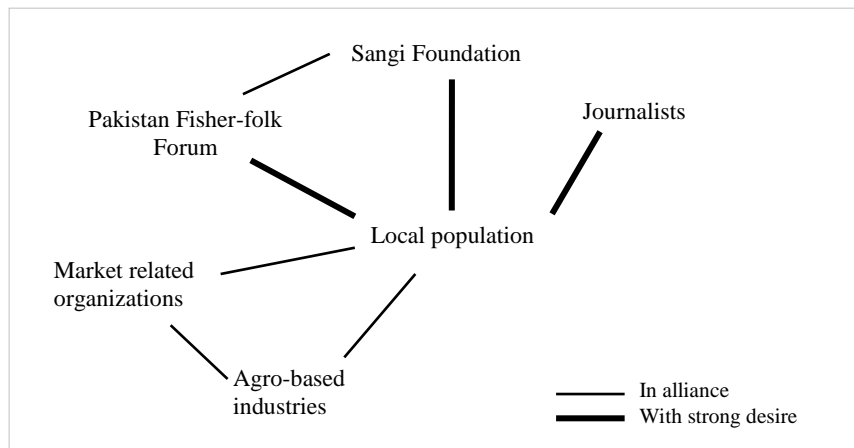
Legend:

- Thin line: In alliance
- Thick line: With strong desire

Above figure indicates the panel of the actors in a bureaucratic and politicized environment, comprised on federal to provincial ministries and local land lords, with a single object to construct the reservoir on Chotiari wetlands. In fact, the water and power development authority (WAPDA) has planned and initiated to construct the reservoir with help of provincial departments (irrigation & drainage, forest, and environment) as well as the local feudal lords (Nauman, 2003), to provide irrigation water to down command area in the province, where the financial assistance provided mainly by World Bank and partially by other agencies. In this regard WAPDA has also claimed that the construction of the reservoir and remodelling of irrigation system would increase the cost benefit ratio from 0.9:1 to 1:3.1 (Tarar, 2003).

On the other hand, the pressure of state and donor agencies for reservoir establishment and media coverage has stimulated local population to unite and protest. Their actions were conducted within local to national management structure. Thus, local communities, NGOs, journalists and other voluntary organizations aimed to struggle for a coherent action against construction of the reservoir (see figure 6). Their alliance was not only based on the reservoir opposition but to promote the Chotiari wetlands as a national park and tourist stamping grounds (Laghari, 2001). Through daily press analysis we came in to know that local population have demonstrated the socio-economic and environmental impacts of the project in various ways, i.e., through protests, agitations, press conferences as well as writing letters to public authorities through the press.

Figure 6: Network of actors against Chotiari reservoir construction



Source: Authors realization based on expert opinions, field and literature survey.

The above network aims to reflect tools of actions performed by the actors against the project. In this regard the actors' stake was to structure a hierarchy of coordination and to agitate till annulment of the project. Therefore, the local population (individually or collectively) have repeatedly protested in press-clubs as well as demonstrated during the visits of monitoring teams from World Bank that government has neither provided the facts related to the project, nor official list with details of entitled affectees supposed to receive the compensation (Jillani, 1999). They also pointed the question of environmental impacts and depletion of natural resources (Nauman et al., 2001), but there was no important effect.

Local population in assistance with the journalist, Pakistan fisher-folk forum, and Sangi foundation seemed in strong desire to either set-off the project or to compensate the displaced families. Their cause has also been supported by the market related organizations in various forums. According to daily press, some affectees with the help of Sangi foundation (national NGO) went on hunger-strikes in front of President's office in Islamabad for justice, where within few days their strike was forcibly finished and few of them were arrested.

However, the opposition on the project between local and outside actors has increased as time passes. Due to involvement of stakeholders (national and international) it was not seemed possible to back the decision by public authorities. But there were possibilities to set-up social networks capable of responding to local situations and to improve relations between local actors, officials and local elected politicians, which could facilitate the management of this land use conflict process.

3.3.3 Factors created conflicts in Chotiari project

The multi-dimensional catastrophe of the Chotiari reservoir cannot be understood with a single factor. Therefore, it is important to visualize and quantify the structural and proximate factor dynamics with their anticipation, which have not only escalated conflicts of land use but also unrest among local population. Therefore, on the basis of articles published in daily press and opinions interviewed from experts, we came into effect to disclose the responsible factors to the conflicts of Chotiari reservoir (see table 3). In this regard we have quantified the factors which appeared in news, reports or articles published in daily press as well as in the expert opinion interviews. These factors seemed responsible for either giving favorable path to pre-conditions or conducive climate to the conflicts.

Table 3: Conflict factors of Chotiari reservoir

Factor types	Causes	Percentage	
		Articles in daily press	Experts opinion
Structural factors	Corruption/misuse of funds	23.94	34.38
	Unilateral decision	21.81	21.88
	Lack of technical and scientific research	19.68	9.38
	International interest	7.98	12.50
	Non-existence of national resettlement policy	9.04	9.38
Proximate factors	Ethnic diversity and disarray (unrest among communities)	13.83	12.50
	Others (Nepotism, Illiteracy etc.)	3.72	0

Source: Authors realization based on daily press and expert opinions

Above table indicates that (according to the daily press and expert opinions) the major contributor of the conflict of land use over Chotiari region is corruption, followed by the lack of scientific research, international interests, etc. The results of analysis also show that the ethnic diversity and disarray of local population have also provoked favourable situations in the project initiation.

On the other hand, it is also obtained (through daily press and expert opinions) that due to ethnic disarray local population united lately to oppose the project, and their opposition started with its negative impacts in the region. Majority of experts opined that the reservoir has highest economic cost with different tradeoffs between water storage to displacement of people, environmental damages, deforestation, and loss in fish biodiversity. Moreover, daily press argues that the reservoir has been built where supply of water is relatively low.

3.4 The question of property in land use conflicts

Theoretical literature provides many factors of land use conflicts but the main reason alleged is usually the ineffectual definition and implementation of property rights. Therefore, in this section we would like to unveil the motives of land use conflicts on properties as suggested by the literature. Furthermore, we also describe the loopholes in the property rights and institutional inconsistencies in the case study area, which can help in the illustration of conflict resolution measures of land uses.

3.4.1 Land use under weak property regime

The properties that are being used for the construction of development projects are common, semi-common or private resources⁵, i.e., entitled or un-entitled lands. Furthermore, if it cannot be denied that global development is directly related to the establishment of infrastructural projects, on the other hand these projects could give rise to big land use conflict if directly

⁵ The common resources are free goods for individual and are scare goods for a society (Ostrom, 1990; Hardin 1968; Gordon, 1954), whereas according to Smith (2000) the semi-common properties are not only mix of common and private, but both can interact and are significant. For example, piece from a private land used for a collective interests of grazing, fishing etc.

associated to the property right violation. The central idea of the property is founded upon the use of the resource. A logical argument has previously been made by Hardin (1968) that the use of common resource (common-pool resource) is economically non-rational; because its cost could always be much more than the gains, if the resource is commonly used. Contrary, when the projects of a single use will be initiated on the CPR it will lead other users away from the resource and will increase the cost of production, thus the increasing cost is itself a conflict (Ostrom and Nagendra, 2006).

Land is a property, which is characterized by spatial distribution, knowledge, and capital, where the right is the capability to stand upon a claim (Bromley, 1998). Thus, the theory of property rights deals with resource allocation based on economic interest and bargaining power of the actors involved in the procedure of allocation of these resources. Due to its scarcity and preciousness everyone is interested for its share. Although the degree of land subtractability depends on the characteristic and the type of land, likewise it is high for CPR (Ostrom, 1990). The subtractability deals with the diminishing share of other users.

The property regime is a key factor in the political economy of rural masses, in which individual feels secure when property rights are properly practiced in the society. On the other hand, weak institutional approaches towards property rights often generate insecurity and tensions among the land owners. However, in certain cases land owners are poor, illiterate and unaware about land use rights and exercise of their power. For example, Khan (2006) has discovered several cases of corruption in property registration in the Lahore Development Authority (LDA) in Pakistan, i.e., the main registration authority in the country. Thus he concludes that where these rights are poorly defined there are opportunities of tensions on land use. The tension, because of inconsistency between the law and constitutional provision causes confrontations on such land uses (Alston et al., 2000). The concept of land use conflict has already been brought before various researchers (Darly and Torre, 2011; Mann and Jeanneaux, 2009; Deininger and Castagnini, 2006; Campbell et al., 2000); they are the result of different stakes, policy responsiveness of the poor land-use planning, and violation of property rights.

3.4.2 Property right loopholes and institutional inconsistencies: case study

In most of the developing countries like Pakistan the land ownership rights are unclear or complex, and with a long hierarchy (Ali and Nasir, 201). Moreover, the local governance structure is unhelpful (Nemeroff, 2008), with bureaucratic behavior and controlled by supremacy of the institutions (Nauman, 2003). Pakistan is exercising the land acquisition act 1894⁶, where the law is amended several times (Janjua, 2007), but the transfer of land

⁶ Land Acquisition Act 1894 came into force on 1st March 1894 and was extended to the whole country (India). In Pakistan recently many amendments were made due to need of time. According to this law, the provincial government is authorized to take land for public purposes, where the government appoints an officer for the survey of the land and to notify and satisfy the owner by paying compensations of land and damages at current market values. In case of objection by owners, there must be reconsideration. In this situation the officer can forward the recommendations to the executive district officer (revenue), where he/she will be final authority for making decisions on land acquisition. Section 4(1) of the law explains that land can sometimes be acquired without prior survey. In this regard a declaration is made by an officer (authorized by the provincial government), and after the issue of declaration the government asks the officer to take charge of the acquired land. Thus, he will send a notice to the owners to claim their compensation for land and damages and to lay their objections in hand writings within fifteen days in front of the officer. While the compensation and damage values will be made on the current market values of land and damages (for details see Janjua, 2007).

property and compensation systems are incompatible and having loopholes (Khan, 2006). For example, Alam (2006) has investigated that irregular sales of immovable properties do not need to be documented. Because of the ambiguities in the laws different investors have benefited by taking over lands from landowners (Khan, 2006).

The institutions are responsible to develop a social interface between local populations and public officials among society and to promote the reforms and historical changes overtime, which are normally invisible, but can be measured through the policies (Ostrom, 1999). In Pakistan, most of the land owners have confrontations with existing institutions due to their mismanagement and ignorant behaviour (Khan, 2006), where the problems vary according to their land uses. This governance structure can be the reason of weak tenure rights and insecurity for smallholder, pastoralists, forest-dependents and indigenous people.

A major part of Chotiari wetlands was owned by local population (Nauman et al., 2001), where they had to enjoy the complete rights of their land ownership, but most of the owners were poor, illiterate and socially inefficient, and with little awareness of land-use rights. In this situation, some outside stakeholders⁷ took the advantage of property right loopholes and created fake ownership papers for compensations and other benefits during the reservoir construction period (Nauman, 2003). Additionally, the corruption of public servants is an undeniable fact in the country. For example, in the case of Chotiari reservoir government has admitted the cases of corruptions and misuses of funds (Iqbal, 2004).

According to the law the government must notify and satisfy the land owners before to take land for a public project construction. On the contrary, in Chotiari project daily press and experts highlight that no proper survey has been conducted for land and damage valuation (neither for the entitled lands nor for the CPR), whereas the lands were used as source of livelihoods to local inhabitants since generations. The country is practicing construction of development projects since five decades, in this regards many large and small dams have already been constructed (UNEP, 2004), but there is no existence of any national resettlement policy (NRP). In this regard first draft (PC-I) of the NRP was finalized in 2002 and is still in pending for approval of concerned ministries and the parliament. But the policy draft does not address about unresolved social and environmental conflicts of the previous development projects like *Tarbela dam* (Iqbal, 2004). Probably if this policy will be approved in near future, the question will arise that will Chotiari affectees be benefited? Because in the national resettlement policy proposal the “resettlement action plans” for dams are based on land acquisition act 1894 (Alam, 2006), which plans have never benefited to the *Tarbela dam* affectees in the past.

Legal action is the supreme mean of conflict ending but majority of experts opined that courts have totally ignored the situations of opposition, expropriation, corruption, in case of Chotiari project. They further argue that this ignorance of their rights was due to the involvement of the land lords, politicians and public officials (Nauman, 2003). Thus, the most effective approach to solve such conflicts is balancing socio-economic assessment based on the needs of the indigenous people, and giving them representation rights for negotiation to achieve a synthesis that can maximize the positive elements of each of these dimensions. Analysis of these conflicts from the expressions of experts, it is clear that the protesters often use the media to put disputes into the public.

⁷ The stakeholders other than local population, i.e., land lords, contractors, politicians and government officials (Nauman, 2003).

4. Discussion and conclusion

The paper puts the stress on the limits of infrastructural development settings without agreement of local stakeholders and understanding of factors of oppositions by local population. The only way to examine the institutional inconsistencies and distribution of dissimilar power, leading to land use conflicts and loss of local population's resources, is to analyze the dynamics of actors/stakeholders network in the study area, such as the reaction of local actors and public officials during and after the project construction.

In the research we conducted analysis over daily press and expert opinions; and found some dissimilar results in both sources (see figure 2), where the press concerns over decline of major economic activities, while the experts put stress on increasing social issues in the region. Although, both suggest that there exists a negative relationship between social issues (conflicts) and the setting of new economic activities/growth (infrastructures). During field visits it was observed that local population hold ancestral properties and there was no proper registration of it, which may be the cause of their unawareness towards property rights. It was also observed that the value of agricultural lands outside reservoir is declining because of rapid contribution of seepage from the reservoir.

We have conducted a social network analysis of actor, aimed to go through the ground realities of the conflicts of Chotiari reservoir. The performance of public officials and administrative actors, in association with local landlords gave birth to the processes of tensions and conflicts, where these actors seemed in favour of reservoir construction at any cost. Contrary, there is another network of different actors (local market related organizations, NGOs and journalists) correlated with local population, who have started a long journey of confrontation with public officials and local landlords to discontinue the project. The estimated magnitudes show that despite of longer opposition, the project has displaced local population with rehabilitation and resettlement issues. We also observed that the project seemed the risk to economic activities in the area, because it does not correspond to the desired management policies in a sustainable manner (Nauman, 2003).

Should this issue have needed immediate resolutions measures? The fact is that in the case of Chotiari reservoir the institutional inconsistencies (Ali and Nasir, 2001), without counselling to local population for reservoir construction (Abro, 2001) and behaviour of public officials have led towards human and property right violation. However, this is not an isolated case, where aiming to prevent such conflicts it may be imperative to promote human and property right awareness among land users. Moreover, the study of multi-level governance and socio-spatial evaluation of the Chotiari reservoir would be a useful tool to recommend concrete policy measures and strategies to prevent such conflicts on land use for the other infrastructural projects in the developing countries.

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Annex A

Daily newspapers selected for the study

N ^o	Regional dailies	National dailies
1	Kawish	DAWN
2	Ibrat	Daily times
3	Jang	The Nation
4	Tamer Sindh	The NEWS
5	Awami Awaz	Pakistan
6	Mehran	STAR
7	Khabrain	
8	Pak	
9	Sach	
10	Sham	