Report on FGDs Conducted by RIPORT in Gomal Zam Project

"Issues of Concern for Communities"

Table of contents

Background of Gomal Zam Project

Gomal Zam Dam (GZD) is a hydro-electric power and irrigation project in northwest Pakistan. It is located on the Gomal River in the South Waziristan Agency and impounds the river at Khajuri Kach. It is an arched, gravity-type roller-compacted concrete dam with a height of 437 feet, and has a gross storage capacity of 1,140,000 acre feet. It can irrigate about 191,000 acres of land, and produce 17.4 MW of electricity.

Initiated by WAPDA in July 2002 and with expected completion by the end of September 2013; there are four major components of this Rs. 12 billion scheme: Dam & Spillway, Diversion Tunnel, Hydro Power, & Irrigation System. Of the four it is the irrigation and agriculture related components that are causing most challenges. It is the area for focus group discussions that were based on obtaining qualitative opinion of communities regarding their expectations from this new irrigation project.

Objective of the FGDs:

It was foreseen that providing a limited amount of assured irrigation water in GZAP command area would generate claims that may lead to conflict. Hence it was important to reach out to communities and find their opinions and solutions to problems facing them.

- Obtain suggestions about water rights and how best to assure availability of rights to claimants.
- Obtain other relevant suggestions of the communities regarding operations by government departments.

Methodology:

The following methodology was adopted;

- 20 FGDs were to be conducted in 10 Union Councils in the project area. Each FGD would include from 10-20 individuals from 100 households who would be randomly selected from the upper, middle and the tail end of the project.
- Prior to the holding of these FGDs the RIPORT community mobilizers visited the target area for becoming better informed and to establish contacts with community and to gather data about potential participants who would reflect various stratas and income levels as well as size of land holdings as owners or tenants.
- The following union councils were represented in the FGDs:-

    - UC Madi (D I Khan)
    - UC Hathala (D I Khan)
    - UC Luni (D I Khan)
    - UC Jata kal (Tank)
    - UC Shah Alam (Tank)
    - UC Shahrozan (Tank)
    - UC Dabara (Tank)
    - UC Gomal (Tank)
    - UC Ranwal (Tank)
    - UC Uttar (Tank)

Statement of Research Parameters:

The frame of reference of this research is mainly qualitative in nature which seeks insight and direction rather than precise quantitative measures due to limited number of participants from each area and other limitations of the project. The validity of the findings of this research is based on assumption that the participants of the focus group discussions were able to provide unfiltered responses regarding the issue under discussion.

Village Committees:

Existence of Village Committees:

The FGDs were asked if such village committees exist in their areas. It was found that majority of the villages of Tank have well-developed village committees. However, the existence of such village committees was less in D.I. khan where only one third of the villages have such village committees in place.

Functions of the Village Committee

Functions of the existing village committees varied across areas and are listed below:

1. Solution of disputes related to water management and distribution: Village committees of the areas where major part of the agricultural land was irrigated on Rod Kohi system work for the settlement of disputes that arise regarding the distribution of the water.
2. Liaison with government agencies / departments for the solution of problems related to agriculture;
3. Some village committees acted as welfare committees for the general public and took initiatives deemed necessary by the village elders;
4. Some village committees were also reported to be working with political parties. The purpose of such committees is to uplift the socioeconomic situation of their areas by acting as a lobbying group to solve their problems.

The major function of these village committees was related to solution of agricultural related problems and general development of the area. Committees formed for general welfare or purposes not specific to agriculture also have to deal with agricultural problems due to agriculture being the main source of their livelihood.

Willingness to form Village Committees

When asked about the willingness to form village committee for farmers, all of the participants showed keen interest to form village committee specifically for farmers. The enthusiasm for formation of farmer village committees was more prominent among the participants of the areas of D.I. Khan where the existence of such committees was already low.

Expectations from the VCs for farmers

In response to "how do you foresee if village committees are formed", the responses were contained in the following answers:

1. The village committees will be comprised of the local people who would thus know our problems very well
2. Committee will keep liaison with all concerned stakeholders and would convey our problems to the concerned authorities in an effective manner
3. They would work for agricultural uplift by adopting modern agricultural techniques and would extend technical assistance to farmers
4. It would represent all farmers and would thus eliminate the disputes that arise due to lack of representation.
5. It would undertake water management and resolve disputes related to unequal water distribution
6. It would make efforts for improving the canal irrigation system and thus bring awareness about it.

In order to have an idea about the magnitude of the above responses, below is a quantitative sketch of these responses:

S. No	Theme	Frequency	Percentage*
1	Better identification and understanding of local problems	5	14
2	Better representation of problems to concerned authorities	16	46
3	Uplift of agriculture by promoting modern techniques	5	14
4	Eliminate disputes due to conflict of interest	4	11
5	Undertake water management & eliminate associated disputes	4	11
6	Would promote and train people in canal irrigation techniques	1	3
	Total	35	100

*Percentage out of total recorded responses for all areas

Factor that contribute to poverty of area

Participants of the focus groups discussed different factor that contribute to the poverty of their areas. These factors can be broadly categorized as under:

Low Agricultural Productivity

Since majority of the population of the target areas depend on agriculture, low agricultural productivity was reported as one of the major factors in this regard. This low productivity is further attributed to the following reasons:

1. Inadequate and insufficient supply of water for agriculture. Rod Kohi system could not fulfill the agricultural needs of the farmers since the available water is insufficient. The water is allowed to flow to the next field in the series only when the first field is filled. It makes it impossible for all the lands to get water.

2. Major portion of water is also lost due to improper construction of shallow water channels.
3. Agricultural lands are not properly leveled and thus it becomes impossible to irrigate flow of the water to all agricultural lands
4. GZDP lacks the use of modern farming techniques primarily because of the limited resources of farmers and lack of education. Over the cycle of bad years, the farmers do not have enough resources to increase productivity using modern fertilizers, seeds and machinery or to protect crops from deadly disease with insecticide and pesticide. There is also lack of education among farmers which reduce their ability in best utilization of the available resources.

Unemployment

Informants raised serious issues regarding unemployment and conversed that although unemployment is not only confined to these areas and is a global issue, but is certainly more pronounced and serious in the project areas. The root of this problem rests in the following two factors:

1. Decline of farming due to poor productivity is one of the major reasons of the heightened unemployment of the area. More and more people previously involved in agriculture are becoming jobless due to decline of agricultural sector in these areas.
2. Majority of the population of the study areas are illiterate, since illiteracy and unemployment go hand in hand, majority of the adults are unable to get a job.

Lack of access to higher value markets

Life of people in the project area has become more precarious due to lack of access to high value markets mainly due to unavailability of roads and communication infrastructure. Farmers could not compete on equitable terms in local or regional markets.

They lacked access to markets because roads are poor and transportation is too expensive. And higher food prices do not always filter down to the farm-gate, where poor farmers often have to sell their produce.

In addition to the above major factor of poverty, the participants also discussed that the health facilities are inadequate in their areas and they have to go to the cities for private healthcare. It cost too much out of their earning. Some focus groups also stated that poor law and order situation, political instability and over population are the major factors contributing to the poverty of the area. Below is a quantitative sketch of the above discussed issues:

Area	Group	Unemployment	Low agricultural productivity	Lack of access to high value markets	Expenses on health	Poor law & order	Political factors	over population
TANK	Group-01	X	X	X				
	Group-02	X	X	X	X			
	Group-03	X	X		X			
	Group-04	X	X		X			
	Group-05	X	X					
	Group-06	X				X		
	Group-07	X	X					
	Group-08	X	X					
	Group-09	X	X				X	
	Group-10	X	X	X	X			
	Group-11	X	X	X				
	Group-12	X	X					
	Group-13	X	X	X				
	Group-14	X	X					
D.I KHAN	Group-15	X	X					
	Group-16	X	X	X			X	
	Group-17	X	X					
	Group-18	X			X			
	Group-19	X	X					X
	Group-20	X	X	X				

Agricultural Productivity

For question regarding core issues affecting agricultural productivity, informants shared a number of issues of their respective areas. These issues can be broadly categorized as under:

Lack of modern farming techniques

The use of modern farming techniques is almost negligible in all union councils of the study area. This problem is ascribed due to unavailability or insufficient availability of material and technical resources.

Insufficient material resources for modern farming

1. A considerable number of informants reported that their crops are frequently attacked by different diseases that destroy the crops. The farmers cannot afford the use of expensive pesticides and insecticides. Due to the same reason, these pesticides are unavailable at the local markets and thus further escalate the problems associated with acquisition.
2. Machinery and equipment required for modern farming is unavailable. Only a small percentage of the farmers own tractors and other small machinery which is no way sufficient for the whole study area. Majority of other farmers fail to acquire modern machinery for farming
3. The use of good quality approved seeds is negligible either due to high prices and unavailability in the local markets or lack of awareness and education of the farmers. The crops thus grown are prone to diseases and the agricultural productivity is decreased.
4. Most of the farmers use typical fertilizers while the use of modern synthetic fertilizers is very limited due to high prices or unavailability. This also greatly reduces the agricultural productivity of irrigated lands

Insufficient technical resources

Insufficient technical resources relevant to farmers' circumstances were a major constraint in all areas. While discussing the issue of insufficient technical resources, informants pointed out the unavailability of technical resources that could initiate, promote or support modern farming. No agricultural agents, institutional structures, government or non-governmental services are available to help them.

Overall, lack of modern farming techniques are linked to various factors: the available technology being more suited to less risky production conditions; a strong sense of risk aversion by small-holder farmers in these conditions, in which production of most of their subsistence food requirements was often a primary concern; and a lack of access to resources to adopt technology, which was associated with farmers' marginal economic status in difficult environment.

Scarcity of agricultural water

Almost all the informants of the focus groups discussed the scarcity of the water available for agriculture. The agricultural land is either rain fed or by Rod Kohi. However in both cases, the available water is insufficient and the storage capacity is very poor. Major portion of the agricultural water is lost due to seepage of water from imperfectly constructed shallow water channels (*Nallas*). Due to the same reason, the field away from the nallahs remain barren and uncultivated.

Large numbers of farmers are facing the problems related to uneven land and consequently insufficient water for irrigation. More land is being taken out for bunds and ditches and results in uneven distribution of water.

Floods and soil erosion

Rod kohi system makes use of the hill torrents to supply water for irrigation. However, major constraints limiting utilization of flood flow of hill-torrents include unpredictable flash floods,

improper control, soil erosion and heavy silt load in flood water. Considerable number of informants described floods and erosion as the major issues affecting agricultural productivity.

In addition to above, informants also described lack of institutional credit, hail and water logging as main problems of some areas. A group wise quantitative summary of the response distribution is given below:

PROBLEMS	FREQUENCY	PERCENTAGE*
Land Leveling	6	10
Diseases & insufficient use of pesticides/insecticides	12	19
Use of low quality seeds	3	5
Lack of agricultural machinery	3	5
Insufficient use of fertilizers	4	6
Lack of technical resources	4	6
Scarcity of agricultural water	15	24
Floods & erosion	9	15
Hailing, water logging, finance related problems	6	10
Total	62	100

*Percentage out of total number of responses provided by all groups

Measures to eradicate issues related to low productivity

There was absolute agreement among participants on the provision of canal water as solution to most of their problems. It would reduce floods, erosion and seepage of water hereby making available more water to fulfill the existing needs and for extension of irrigation to new areas guaranteeing the substitution of lower value products into higher value products. This would promote the use of modern farming technology and reduce unemployment in these areas. In short, the root cause of the agricultural and corresponding socioeconomic problems is

associated with decline of agriculture in these areas. Ensuring the availability of water through canal system would act as multiplier in the uplift of agricultural sector in these areas.

Participants stressed the strong need of training and technical assistance particularly in control of disease, utilizing the existing resources efficiently and for the promotion of modern farming techniques and technology.

They also expressed the need of government support in provision of modern farming technology, fertilizers, seeds and pesticides. A large number of participants discussed the financial problems of the farmers in acquiring technology and materials and emphasized the role of government and NGOs in this regard.

Availability of agricultural machinery and services

It is a well-known fact that agricultural machinery and services are extremely vital for rapid development of agricultural production. However, none of the participant from any of the areas reported the availability of agricultural services and machinery. All the areas lack agricultural services like agricultural support offices or agents, dispensaries etc. while only a negligible number of farmers own private tractors (as low as 3 tractors per village on average).

Community expectations from Gomal Zam

Residents of the study area have high hopes from Gomal Zam project and believe it would change their lives. Following are point wise expectations of the community:

Abundance and timely availability of water

Scarcity of agricultural water is the main problem of these areas which is expected to end with Gomal Zam. The timely availability of water for all farmers irrespective of location and

distance from the reservoirs is equally important which can be achieved with canal irrigation system

Floods control

The problem of unpredictable flash floods, improper control, soil erosion and heavy silt load in flood water that destroy major portion of the crops each year will be controlled

Development of water management system

There is lack of any institutional setup for water management in Rod Kohi system. The informants expect that Gomal Zam project will ensure the development of proper institutional setup for water management and would guarantee the judicious distribution of agricultural water and help in elimination of disputes that arise due to water distribution

Extension of land under cultivation

The extension of cultivable land will be made possible by providing water to the currently barren lands thus increasing the land under cultivation

Promotion of modern farming technology

With increased area under cultivation and reduction of the risks associated with other irrigation systems, Gomal Zam will promote the use of modern farming techniques and technology.

The informants also shared that some of the areas lack drinking water and they expect that Gomal Zam will solve all their problems associated with availability of clean drinking water

Impact on production and economic conditions of community

All informants have confidence in positive impact of Gomal Zam on agricultural productivity. They are of the view that canal irrigation system of Gomal Zam will increase production by ensuring timely availability of water, reduce risks associated with Rod Kohi, bringing more land under cultivation; promote modern farming and agri-business, reduce unemployment and poverty and would ultimately result in economic uplift of the whole area.

Post Project Requirements for Agriculture and Livestock

When asked about the requirements when water will be available, Informants expressed the need for the following:

1. The foremost requirement of the informants was the need of training on modern farming and livestock. The farmers want to get the best out of their lands by adopting modern agricultural methods and increase productivity for which training is needed on priority.
2. Technical assistance to the farmers will be an important requirement to be provided by local agricultural offices, field agents, dispensaries. At the same time, it will be equally important to devise a mechanism for dissemination of useful agricultural information like pest control and other precautionary measures
3. Support in provision of agricultural supplies like fertilizers, quality seeds, pesticides in a way that is convenient and affordable for the local farmers is a priority need.
4. Support in provision of agricultural machinery for mechanization of the farming and particularly for leveling of the agricultural lands is needed.
5. Financial support from government and non-government organizations particularly in the form of institutional credit / agricultural credit is required.

6. Constructions of roads and provision of appropriate means of goods transportation to give farmers access to high value markets was also mentioned as one of the major requirement in this regard

Resolution of disputes

Out of 20 groups, 15 reported disputes at community level on the distribution of water. All these disputes arise in areas where poor Rod Kohi system is in place and the scarcity of water lead to such disputes. No disputes were reported from areas where most the land is Barani and distribution of water does not take place.

Different means of dispute resolution are adopted at community level out of which Jirga system is most prevalent. Below is a statistical summary of the means of dispute resolution:

Mean/ Method of dispute resolution	Percentage
Jirga	87
Darogha / Sardar / Elders	7
NGO & Govt. Officials	7
Total	100

In response to satisfaction on the means of dispute resolution, almost all informants showed their satisfaction with the Jirga system where it prevails. However, no clear responses were provided by informants where mean of dispute resolution other than Jirga system exists. Informants were also unable to suggest other possible mechanism for dispute resolution.

Quantitative dimensions of information

Following are quantitative dimensions of the data collected from informants of twenty focus groups regarding their areas/villages:

Total agricultural land

Type of land	Area in Kanals		Total
	Tank	DIK	
Cultivated – Barani	45,900	85,000	130,900
Cultivated - Rod Kohi	257,150	58,000	315,150
Non-Cultivated- Barani	130,200	42,000	172,200
Non-Cultivated- Rod Kohi	83,500	167,000	250,500
Total agricultural land	516,750	352,000	868,750

Rod Kohi irrigation system is more prevalent in the study area as compared to rain fed lands. Out of the total, only 35% of lands are rain fed.

Comparison of Tank and D.I Khan

Type of land	Agricultural Area			
	Tank		DIK	
	Kanals	% age	Kanals	% age
Rod Kohi	340,650	100	225,000	100
Cultivated - Rod Kohi	257,150	75	58,000	26
Non-Cultivated- Rod Kohi	83,500	25	167,000	74
Barani	176,100	100	127,000	100
Cultivated - Barani	45,900	26	85,000	67
Non-Cultivated- Barani	130,200	74	42,000	33

Although the total agricultural land in Tank and D.I. Khan is comparable in many ways, there is substantial difference in the area under cultivation of two different systems. Seventy five percent of the total land under Rod Kohi system is cultivated in Tank. However, this percentage is only 26 in D.I Khan and 74% of the remaining land under Rod Kohi system could not be

cultivated. On the other hand, 67% of the total rain fed areas is cultivated in D.I Khan but this percentage is very small and accounts for only 26% of the total in Tank.

Household size and education

Theme	Tank	DIK
Number of households	14,480	2,310
Average household size	11	11
Literacy rate	24	2

The number of households in DI Khan are 19,290 and number of household in Tank are 19,636. Average household size is same both for Tank and DI khan. However, the average literacy rate shared by respondent from D.I khan is as low as 2%, much lower than 24% for Tank. It is important to note that the above quantitative information are extracted from a range of qualitative discussions and may only present the rough statistical picture of situation.

Major sources of income

Area	Indicator	Employed	%	Business/Employers	%	Farmers/tenant/ land owner	%	Daily Wages	%	Total	%
Tank	No. of Persons	427		228		6488		3772		10915	
	Percentage	4		2		59		35		100	
D.I Khan	No. of Persons	132		342		3715		1220		5409	
	Percentage	2		6		69		23		100	

Major source of income of people is farming. Daily wage workers comprise second largest category of earning.

Kharif and Rabi Crops

Crop	Frequency	Percentage	Average income / Kanal
KHARIF			
Maize	9	29	1505

Sargam	4	13	1850
Sugarcane	6	19	3166
Rice	4	13	2125
Melon	4	13	1850
Barley	4	13	2750
Total	31	100	
RABI			
Wheat	13	37	3850
Mustard	8	23	1068
Gram	11	31	1960
Tomato	3	9	1500
Total	35	100	

A number of crops are grown in the project area with varying level of income from them. Among Kharif crops, Sugarcane is the most profitable crop followed by Barley and Rice. Similarly, Wheat is the most paying crop of Rabi followed by Gram.

Main Conclusion Derived from FGDs.

The focus group discussions were a success in gaining insight on how the people see the problems associated with Gomal Zam project. Some broad conclusions can be drawn from the analysis and after obtaining deeper levels of meaning, making important connections and identifying subtle nuances:

There is a strong need and urge of the local people for formation of farmer village committees in D.I. Khan which could take initiatives for the solution of problems related to agriculture and farming. Tank has well developed village committees. However, there is much to do to for formation of either specialized farmer village committees or reformation of the existing committees and development of efficient problem solution mechanism related to agricultural. It is mandatory that these committees be comprised of the local people acceptable to local population without any conflict of interest;

People expect that future village committees will keep liaison with all stakeholders, convey the agricultural related problems to the concerned authorities, promote modern farming, extend technical assistance to farmers, resolve disputes of water distribution and raise awareness among farmers. All these objectives cannot be achieved without extended initiatives of capacity building of these village committees. At the same time, devising proper legislation regarding the role of these committees and its institutionalization is equally important for its assured performance and sustainability;

The main factors contributing to the poverty of the area include low agricultural productivity, unemployment, lack of access to high value markets, scarcity of agricultural water, floods and soil erosion. Low agricultural productivity was found the major of all factors which was further attributed to insufficient material and technical resources. No agricultural agents, institutional structures, government or non-governmental services are available to help in this regard. Use of substandard seeds and frequent attacks of diseases on crops is a common phenomenon primarily due to lack of awareness and financial constraints. Modern farming does not exist and hence high productivity cannot be acquired for the reason that available technology being more suited to less risky production conditions; a strong sense of risk aversion by small-holder farmers in these areas, in which production of most of their subsistence food requirements was often a primary concern; and a lack of access to resources to adopt technology, which was associated with farmers' marginal economic status in difficult environment;

Water is scarce in all the study areas and the storage capacity is very poor. Major portion of the agricultural water is lost due to seepage of water from imperfectly constructed shallow water channels (Nallas). Large numbers of farmers are also facing the problems related to land leveling and more land is being taken out for bunds and ditches and results in uneven distribution of water while major constraints limiting utilization of flood flow of hill-torrents include unpredictable flash floods, improper control, soil erosion and heavy silt load in flood water. The root cause of the agricultural and corresponding socioeconomic problems is associated with decline of agriculture in these areas. Ensuring the availability of water through canal system would act as multiplier in the uplift of agricultural sector in these areas;

There are a number of post project needs of the farming community which are equally important to address for the success of the project and achieving its long term goals. The important of these needs are training on modern farming and livestock, technical assistance possibly through local agricultural offices, field agents and dispensaries, dissemination of useful agricultural information, support in provision of agricultural supplies like fertilizers, quality seeds, pesticides and modern machinery, financial support from government and non-government organizations particularly in the form of institutional credit / agricultural credit and provision of appropriate means of goods transportation to give farmers access to high value markets.

Gomal Zam project is a hope for the majority of people associated with agriculture and there is strong confidence on the positive economic impacts on the whole community. They expect high from the project and believe that it will ensure the abundant availability of water, control floods, promote the use of modern agricultural techniques and technology and more land would be brought under cultivation. People also expect that the project would bring attention of the stakeholders on development of institutional setup for water management and its judicious distribution.

Most of the traits of the study areas are although comparable e.g. type of agricultural land, household size, sources of income, Kharif and Rabi crops, there are clues about factors that vary from area to area e.g. literacy rate, employment rate etc. Further quantitative assessments can me bade for in-depth analysis in the context of project outcomes and impacts.