

# Post Flood Agricultural Livelihood and Food Security Issues: A Way Forward

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## Abstract

Catastrophic flooding struck Pakistan between late July and August causing devastating effects on human lives, agriculture, livestock, infrastructure and communication in the living history. This paper focuses on the post flood agricultural livelihood and food security issues and the way forward in the province of Balochistan. It analyses the loss incurred in agriculture and livestock in Balochistan with reference to the data collected through NGOs and activist groups. A thorough analysis reveals the information about field crop damages, irrigation infrastructure damages and loss to the livestock in Balochistan. The research presents a way forward for government authorities, non-governmental sector and donor agencies with the propositions for early recovery and rehabilitation plans for the effected region of Balochistan.

## Introduction

The recent flood of summer 2010 has proved to be the worst and devastating in the history of Pakistan. It caused largest massive shift and migration of 21st century. The flood demolished uncountable human lives, millions of houses, thousands of villages, agriculture crops and livestock causing an irrecoverable loss for the region. The province of Balochistan has no exception, its effects have spread out to all infrastructures, ruining roads, bridges, schools, telecommunication networks and health services. According to United Nation's report, the flooding which began on just early arrival of monsoons has been converted into the loss for one-fifth of the country, nearly 62,000 square miles or an area larger than England.

In this context, many activist groups in Balochistan in collaboration with donor agencies aim at organizing activities of consultative workshops, information seminars and dialogues in order to assist the affected communities. Activists earlier focused on providing assistance of early relief in the affected regions but now inclined to debate on post-flood agricultural, livelihood and food security issues and its way forward. The members from activist groups, local NGOs, Zamindar (Farmers) Action Committee, farmers from different districts and students of the concerned research project are actively participating in the assistance and recovery activities. Major effects of flood on agriculture and livestock in different areas of Balochistan have been chalked out by activist groups and Government agencies for rehabilitation plan in Balochistan. This paper presents an overview of the loss faced by agriculture and livestock in Balochistan with this flood. It thoroughly reveals the efforts made in context of relief and early reclamation for affected communities in the region. Moreover, it gives vivid picture of proposed rehabilitation plan for agriculture and livestock in order to introduce a streamlined system for future. This study proves to be of futuristic nature as it presents propositions for activist groups, donor agencies and Government administration.

## An Analysis of Loss Incurred in Agriculture and Livestock in Balochistan

In late July and August 2010, Pakistan was devastatingly struck causing catastrophic flooding in the living history. According to the report of Pakistan Flood Response of 2010, the floods have affected 15.4 million people, leaving at least 2000 people dead and 893000 homes damaged or destroyed across four provinces. In the same context, N. Toos (2010) in a report states that;

“International lenders are estimating that this summer's floods caused \$9.5 billion in damage to Pakistan's infrastructure, agriculture and other sectors, a government official said Wednesday. The estimate, drafted by the Asian Development Bank and the World Bank in consultation with Pakistani leaders, underscores the financial challenges facing Pakistan, a U.S.-allied nation that is battling an Islamist insurgency and was relying on international loans before the deluge.

Although other nations, including the U.S., have contributed millions to the relief effort, they have warned Pakistan that they cannot foot the entire recovery and reconstruction bill, which some have estimated could surpass \$40 billion. U.S. officials, in particular, have urged Pakistan to improve its anemic tax collection to aid its long-term rebuilding.

The \$9.5 billion figure refers only to existing values of roads, buildings, irrigation systems and other devastated sectors that were evaluated nationwide, not what it will cost to replace them, said the government official familiar with the report.....

The floods began in late July during unusually heavy monsoon rains, eventually covering one-fifth of the country and affecting some 20 million of its 175 million people. Nearly 2,000

people died, while millions were left homeless, according to the United Nations. Dozens of bridges were washed away, while more than 1.9 million homes were damaged or destroyed. Around 5.9 million acres (2.4 million hectares) of farmland were damaged, a severe blow to agriculture, the most important pillar of Pakistan's economy. The U.N. has appealed for just over \$2 billion to help Pakistan's emergency relief and early recovery, but has received only about one-third of that.”

Following are the results of survey conducted by Agriculture Department about affected Districts, damages to irrigation, agriculture and livestock in Balochistan.

**Table 1: Field Crops Damages in Affected Districts of Balochistan**

District	Maize			Sorghum			Rice			Vegetables			Livestock Fodder			Others (chilies, cotton, pulses)		
	Total Crop ped Area (Acres)	Total Affec ted Area	% Area affec ted	Total Crop ped Area	Total Affec ted Area	% Area affec ted	Total Crop ped Area	Total Affec ted Area	% Area affec ted	Total Crop ped Area	Total Affec ted Area	% Area affec ted	Total Crop ped Area	Total Affec ted Area	% Area affec ted	Total Crop ped Area	Total Affec ted Area	% Area affec ted
<b>Jaffara bad</b>	10	10	100	120	100	83	1001 69	7011 8	69.7 9	1670	1670	100	2830	2830	100	2600 0	5623	21.6 3
<b>Naseer abad</b>	Nil	Nil	Nil	1232 0	6540	53.0 8	3400 0	3231 9	95	3741 4	8590	22.9 5	2314	1917	82	1543 4	5712	37.0 0
<b>Sibi</b>	10	10	100	670	562	84.3 9	Nil	Nil	Nil	540	425	78.7 0	380	89	33	1531 4	8000	52.2 3
<b>Kohlu</b>	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	40	40	100	100	80	80	2537	2060	81.2 0
<b>Barkha n</b>	Nil	Nil	Nil	700	620	88.5	Nil	Nil	Nil	6000	4035	67.2 5	542	480	88.5	9327	7128	76.4

Table 1 reveals that field crops damages in affected districts of Jaffarabad, Naseerabad, Sibi, Kohlu and Barkhan are 21.63, 37.00, 52.30, 81.20 and 76.40 % respectively in terms of maize, sorghum, rice, vegetables and livestock fodder that are badly affected. This shows that regions of Kohlu and Barkhan are badly affected by flood.

**Table- 2 Showing Damages to Irrigation Infrastructure**

District	Unit	Completely Damaged	Partially Damaged	Total
<b>Jaffar Abad</b> A-Primary B-secondary C-tertiary	RFT* RFT RFT	Information yet not available, area still under water	Information yet not available, area still under water	
<b>Naseer Abad</b> A-Primary B-Secondary C-Tertiary	RFT RFT RFT	04 80 2100	40 620 79900	54 700 10000
<b>Sibi</b> A-WC** B-WST*** C-PVC**** D.Bandats	RFT No RFT Acers	98 6 6196 570	3700 0 7000 0	3798 6 13196 570
<b>Kohlu</b>				
<b>Barkhan</b>				

Table 2 depicts a clear picture about the damages to irrigation infrastructure, according to the above table, both types of damages have been reported in terms of “Completely Damaged” and “Partially Damaged” infrastructure in Naseerabad and Sibi while reports about Jafarabad, Kohlu and Barkhan have not been recorded as areas in Jaffarabad are still under water causing hindrance in updated surveys. It is apparent that losses have been reported for PVC and Bandats in the said regions that caused huge damage to the crops in the province.

**Table 3. Damages in Livestock sector**

District	Total Livestock Population including equines and excluding poultry birds	Affected Livestock population			
		Dead	Affected	Total	% of affected animals
Jafarabad	1322003	23796	951842	975638	72
Naseerabad	829808	10322	238280	248610	29.96
Sibi	577270	14627	44770	59397	10.29

Table 3 presents an analysis of the damages caused to Livestock population including equines and excluding poultry birds. The districts of Jafarabad, Naseerabad and Sibi have affected livestock population of 72%, 29.96% and 10.29% respectively showing that the region of Jafarabad has been badly affected in livestock.

**Table 4: Ranking of Union Councils on the basis of flood damages**

District	Union councils			Total
	Worst Affected	Moderately Affected	Least Affected	
Jaffar Abad	22 UCs	10 UCs	16 UCs	48 UCs
Naseer Abad	09 UCs	05 UCs	10 UCs	24 UCs
Sibi	06 UCs	03 UCs	06 UCs	15 UCs
Kohlu				
Barkhan				

According to table 4, ranking of Union Councils on the basis of flood damages are 48, 24 and 15 in JaffarAbad, Naseer Abad and Sibi while complete reports have not been finalized by Agriculture Department in Balochistan. This shows that flood caused major losses in these areas by demolishing the infrastructure, livestock, water canals and crops. Such damages can have long term devastating effects on the agricultural production in this region as agriculture has been the major source of income in the province.

In consideration of all these damages, activists have been striving hard to provide relief and rehabilitation assistance in the required areas across Pakistan. Balochistan is one of the focused regions, increased concentration of national and international donor agencies have now paved a way for improved rehabilitation efforts focusing at agriculture and livestock sectors. Activists and non-governmental organizations have arrived at some practical guidelines for rehabilitation plan of Agriculture and Livestock in consultation of the experts, representatives of farmers from different districts, researchers and members of donor agencies.

According to the study, the deficit of recent flood in Balochistan on agriculture and livestock has been tripled in terms of loss of crops, loss of seeds for the next planning season and loss of daily income for agriculture and most significantly it has badly ruined livestock which could best be the source of support for the people. Farmers from different districts declared in their presentations that major loss occurred in Jafarabad, Sibi, Naseerabad, Kohlu and Barkhan in the form of demolished tube wells, loss of crops, wastage of seeds and fruit production. Moreover, it was analyzed during the research study that direct crop destruction by uprooting and salt poisoning has been caused by flood in these regions which is a huge loss for agriculture. In this context, erosion and scouring have modified the topography, land leveling and elimination of bandat. This caused more destructive effect in terms loss of soil fertility by washing away of upper layer of soil.

Furthermore, deposition of salted sediment, salt infiltration, trash and debris accumulation have proved major threats for crop cultivation. Moreover, it was found out that loss of livestock was in large scale including equines and excluding poultry birds. Eventually, it was disclosed that the affected Union Councils at Jafarabad, Naseerabad and Sibi had badly been affected in agriculture and livestock which is a multitude depicting the dire need of reclamation and rehabilitation efforts.

The analysis of total losses and relief efforts now generated the need of early reclamation and rehabilitation plans for affected regions. It was revealed in the study that NGOs and Government both have started efforts for the provision of seeds, livestock and households but it seemed to be an unplanned effort as the relief struggle is not strategically designed. It is useless to provide such stuff without capacity building and laboratory assistance of the farmers. Therefore, the study chalked out recommendations for a more planned rehabilitation conduct so that optimum utilization of resources could be achieved. Besides, this will cause destabilizing the country in terms of deep regional and sectarian class fissures. Instead of all that, inadequate and poorly planned relief and rehabilitation efforts due to political scenario have been expanded unstrategically.

In the same context, armed forces have spread out their efforts for relief across the country. This devastating

situation can set Pakistan back many years if not decades causing heavy failure in administrative machinery, proper governance and setting a tough time for military. In consideration of the above debate, the study presents a proposed framework of a way forward for rehabilitation plan for agriculture and livestock sector in Balochistan.

### **Propositions for Future Framework**

Keeping this in view, the experts from Agriculture Department conceived that Government can assist the local bodies for their rehabilitation plan in terms of provision of water channels, certified seeds, seed treatments and farmers' training. Besides, Agriculture Department proposed for technical assistance in soil laboratory formation up-gradation and livestock. Following are major propositions for next action plan of rehabilitation of agriculture and livestock.

- It is proposed that need assessment should be made in consultation with the committee of technical experts in order to find out the requirements for long term rehabilitation of demolished agricultural region. This effort will assist in conducting updated surveys of the exact loss and the target area where immediate rehabilitation efforts are to be conducted. This would bridge the gap between the current and expected plans leading towards setting up a novel way of rehabilitation for the community.
- The water channels need to be cleared down for further growth and production of crops cultivation to initialize the efforts for further agriculture progression.
- At the first instance, trained expertise should be made available for local farmers' training and awareness program in order to make this effort more fruitful. It appears to be useless to provide financial assistance, certified seeds and other relevant facilities without building capacity of the farmers as re-cultivation and reclamation in agriculture needs some innovative and technical methods which ought to be different than the traditional measures.
- Laboratory assistance for soil and water analysis should be the basic need of affected community so that Ph-levels could properly be observed and other timely technical assistance can be assured through these laboratories.
- Demonstration plots of about five acres can be another useful idea for farmers to educate them about the crop cultivation. This novel idea has been generated after the consultation of NGOs and agriculture department that demonstration plots should be provided for cultivation which would serve as technique of agricultural education for the affected community.
- Women have been badly affected by the flood and rarely approached for assistance, therefore, Kitchen-Gardening has been proposed for women of the affected families to achieve self-sustainability in this critical time. This plan can create awareness among women community for being a vital agent in the development of regions.
- Alternative strategies for the affected families to cope with the loss of income should be introduced in terms of micro credit schemes for sustainability.
- Loans without markup rate should be issued to the farmers and livestock holders to maintain sustainability in the community.
- Already issued loans should be waved off from the affected masses.
- Availability of certified seeds and fertilizer for (rabi 2010-2011 and Kharif 2011) at least next two years should be ascertained that will be a great consistent help to the needy community.
- Construction of water courses and repair of water channels should be made ascertained for smooth functioning, although, it needs heavy investments but could best be done in collaboration of NGOs, international donors and Department of Agriculture in Balochistan.
- Availability of combined harvester should be made possible to the farmers.
- The facility of hours of bulldozers and tractors has been proposed as this could be a best assistance for land leveling in the disaster region. Tractors with implements (mould board plough, chiesel plough, front & rear blades, ridger, 5 Tines,9 Tines,11 Tines plough) can also be of best assistance.
- Proper freight rate for tube-wells is required to be maintained for optimum utilization.
- Availability of PVC pipe lines for tube-wells is required for the farmers so that the work could be conducted smoothly.
- Construction and repair of water storage tanks should be an assisting effort for agriculture.
- Assistance of certified seeds and fruit trees to farmers can have long term effect on development and growth of region.
- Plastic tunnels of flowers should be made available to the masses in agricultural community.
- Availability of livestock and poultry to the affected masses of the region is to be made possible in order to make them more sustainable.
- Construction of mud houses to the flood affected people for survival can be done.

- Requirement of Cotton Ginning factory is another intelligent proposition which can have long term investment effect in the region.
- Evaluation of already existing projects is required to overcome the weaknesses and up gradation of rehabilitation program.

The proposed framework of possible rehabilitation efforts proved to be a better guideline for action plan for non governmental sector and donor agencies. The speakers from Agriculture Department and representative of Kisan Itehad presented their views about the possibilities for action plan. During interviews, the authorities of Agriculture Department will provide possible assistance in terms of provision of water, bulldozers to the farmers and certified seeds. Moreover, he affirmed that seed treatment assistance could be made available to the farmers. Training and capacity building in terms of checking the Ph-level of land and other technical aspects can be provided by the department. He further declared and three projects for such rehabilitation efforts in the relevant fields are operative in the region.

The issue under debate portrayed that the above mentioned recommendations for the non-governmental sector in collaboration with the Government organizations and donor agencies will set up a prescribed future action plan. In a nutshell, the need exists for a strong institutional framework to coordinate that large-scale disaster response. Post disaster response framework is required on behalf of policy makers. Two major stakeholders, Government and Communities can chalk out a prescribed framework for recovery and rehabilitation. Recovery efforts should also include support for livelihood security and restoration so that recovery should immediately be made after loss. Livelihoods support programs should be research based, (need assessment is required where and what type of support is needed). It is speculated that such efforts made in the above mentioned framework would prove to be fruitful in the long term to revive and restructure the lives in agriculture and livestock. Therefore, a strategic action plan for future which could establish and strengthen disaster response capability to the region of Balochistan is an indispensable need of the region.

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