

CHITRAL FLOODS 2015:
RECOVERY NEEDS ASSESSMENT AND
ACTION FRAMEWORK



PROVINCIAL DISASTER MANAGEMENT AUTHORITY
KHYBER PAKHTUNKHWA

ACKNOWLEDGEMENTS

In July – August, 2015 flash flooding, coupled with the Glacier Lake Outburst Floods of high to very high intensity, caused human losses and intensive damages to public infrastructure, houses and other buildings in various areas of Chitral District.

In the aftermath of the floods, Provincial Disaster Management Authority Khyber Pakhtunkhwa (PDMA KP) initiated relief activities and emergency restoration in the district. The provision of emergency relief was a great support to the affected populations even though it was challenging to make the relief timely and cooperative.

Given the ramification of the destructive floods, the relief assistance had been very sufficient to cover the emergency phase until the area was again hit by the earthquake in October, 2015. Moving beyond the restoration of the losses and damages, massive rehabilitation and reconstruction of critical infrastructure is necessary to help sustain the lives of the Chitral inhabitants. Risk of environmental hazard and climate change will continue to challenge the already vulnerable communities.

PDMA KP would like to acknowledge UNDP Pakistan, which has provided technical assistance in validating and analyzing the data, collected by line agencies and PDMA KP teams and further drafting the Recovery Needs Assessment and Action Framework. PDMA KP also highly appreciates the technical support of various line departments throughout the assessment process in Chitral, especially during data collection process.

Again, the detailed damage assessment demonstrated in this report reveals the social and physical vulnerability of Chitral to the increasingly destructive hydro-meteorological disasters and climate change impact.

The priority interventions listed in this document would hopefully be considered and transformed into immediate action that can help restore and support the lives of the affected population in Chitral.

Peshawar, 03 December 2015

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ACRONYMS

AKRSP	Agha Khan Rural Support Program
AKPBS	Agha Planning and Building Services
CBDRM	Community Based Disaster Risk Reduction
CBOs	Community Based Organizations
CNIC	Computerized National Identity Card
CPIE	Child Protection in Emergency
C & W	Communications and Works
DC	Deputy Commissioner
DDMA	District Disaster Management Authority
DDMO	District Disaster Management Officer
DDMU	District Disaster Management Unit
DHO	District Health Officer
DNA	Damage Needs Assessment
DEO	District Education Officer
DEOC	District Emergency Operations Center
DRR	Disaster Risk Reduction
FI	Food Items
GLOF	Glacial Lake Outburst Floods
GOC	General Officer Commanding
HFA	Hyogo Framework for Action
IDPs	Internally Displaced Persons
JCCC	Joint Command and Coordination Center
INGO	International Non-Government Organization
KG	Kilogram
KPK	Khyber Pakhtunkhwa
MW	Mega Watts
NADRA	National Database and Registration Authority
NDMA	National Disaster Management Authority
NFI	Non Food Item
NGO	Non-Government Organization
PDMA	Provincial Disaster Management Authority
PaRRSA	Provincial Reconstruction, Rehabilitation and Settlement Authority
PKR	Pakistan Rupees
PHED	Public Health Engineering Department
PHE	Public Health Engineering
PRCS	Pakistan Red Crescent Society
SRSP	Sarhad Rural Support Program
TPV	Third Party Verification
UKAid	United Kingdom Aid for International Development
UN	United Nations
UNDP	United Nations Development Programme
USD	United States Dollars
WASEP	Water and Sanitation Project
WASH	Water Sanitation and Health
WFP	World Food Programme

EXECUTIVE SUMMARY

Chitral, a land of mountains and glaciers, was hit by worst floods during July – August 2015. These unprecedented floods spread devastation beyond proportions and most of the Chitral and Mastuj Subdivisions were destroyed. The major cause of floods was torrential rain and Glacial Lake Outburst Floods (GLOF); there are sub factors such as excessive deforestation and grazing that contributed heavily to mud slides. Chitral has a strategic geopolitical location as it borders Afghanistan (475 KM).

The assessments report describes in detail, the damages, impact and strategy to rebuild and rehabilitate better and safer. The Damages Needs Assessment (DNA) was conducted by PDMA with a

follow-up data validation visit by an independent consultant.

The data and field visit reports that most of the Road, Bridges, Irrigation Water Supply Systems, Power Generation Stations, Agriculture, Livestock, Private Business and Schools were destroyed. This has not only brought in physical damages but also economic devastation to already economically compromised communities.

The initial DNA reports that the region will require approximately PKR 8,075.53 Million (USD 77.167 Million) to implement the proposed recovery framework of 24 months. The following chart details the sector wise damages:

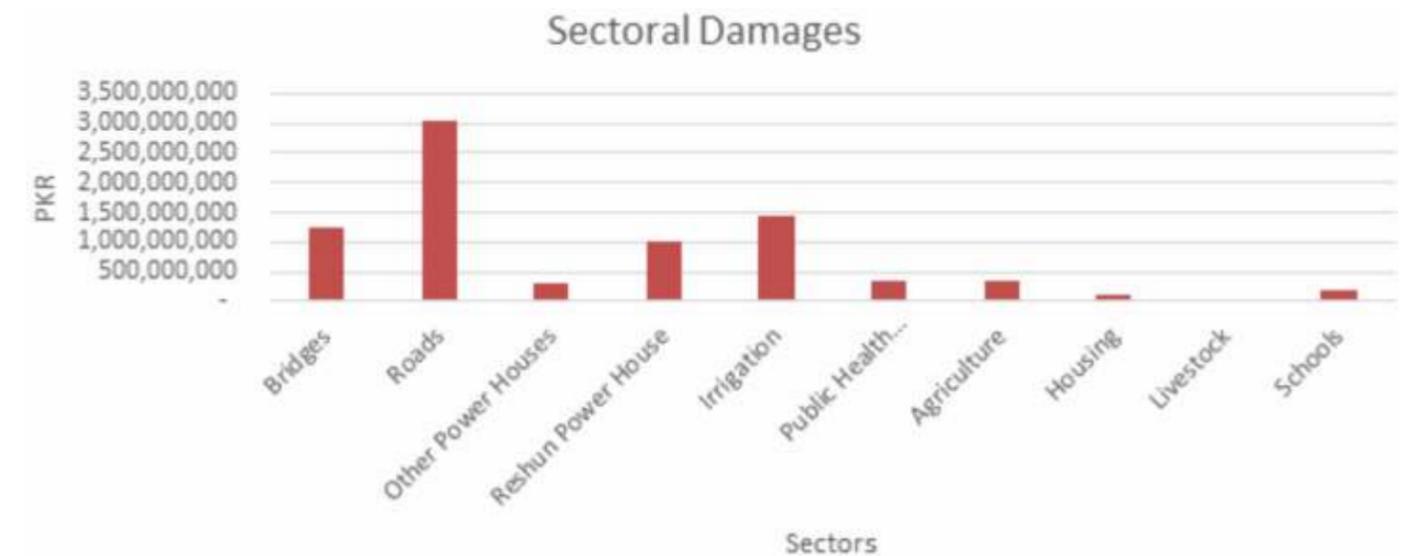


Figure 1: Snapshot of Damages

Government, Pakistan Army, PDMA and Development Partners responded well to provide emergency relief in food, tents, medicines and other necessary supplies to control food insecurity, diseases and shelter. So far Government through PDMA released approximately PKR 470.89 Million for emergency relief.

The recover framework consist of three phases

namely Early Recovery, Recovery and Reconstruction for longer term development of the region. Early recovery and recovery phase's address immediate to medium term rehabilitation. According to this Recovery Framework, Agriculture is classified as Early Recovery Sector. Education, Housing and small power generation stations are classified in Recovery phase. Transport and large power station is placed under Reconstruction phase.

1. PKR to USD Conversion at PKR 104.65 = USD 1 as per State Bank Rate on Oct. 26, 2015

The cost of each phase is as follows:

Early Recovery	PKR 1,847.59 Million	23% of total requirement
Recovery	PKR 938.69 Million	12% of total requirement
Reconstruction	PKR 4,289.26 Million	65% of total requirement

Table 1: Snapshot Cost of Recovery

The phases defined are not intended to work in isolation. All three phases can run simultaneously to restore life and economy of the region. The Government's interest is to initiate reconstruction efforts on large public sector damaged infrastructure immediately.

Snapshot of Sectors²

Education

In the education sector, a total of 30 schools are either fully or partially damaged. There are programs available through UKAid and other donors for rehabilitation of schools. These programs need to mobilize rapidly to ensure that schools are rebuilding to save a school year for these compromised children. The funding requirement for this sector is PKR 177 Million.

Housing

Housing sector suffered damages either by floods or by mud slides. A total of 1,486 houses were damaged displacing a population of 307,500 people. This sector will require urgent attention and rehabilitation should start immediately, before the onset of the winter season. It is important to involve communities in rebuild efforts and particular attention be given to disaster resilient structures. The funding requirement for this sector is PKR 129.92 Million.

Transport (Roads and Bridges)

This sector probably has disrupted the lives of

maximum people. The road and bridge infrastructure damage is extensive with over 29 Kilometers of major roads and 48 bridges washed away. This has not only disrupted the lives of people but has also hampered relief activities. Though the need is urgent but the road and bridges rebuild effort should be carefully thought out with long term planning for resilience. The roads and bridges include both C & W and district council assets. The funding requirement for this sector is PKR 4,289.26 Million.

Water Sanitation and Health (WASH)

There are no major damages in health sector and relief activities are underway. However, the water supply schemes were badly damaged and most of Chitral is without water. A total of 154 schemes of different capacities were damaged. This requires urgent attention as it carries the risk of deteriorating hygiene conditions and has the potential of creating health situations, which are currently under control. The funding requirement for this sector is PKR 331.76 Million.

Energy (Electricity)

A total of 10 power houses were damaged, out of which one 4.2 megawatt station (Reshun Power) was completely washed away, leaving Upper Chitral without power since the floods. This power house needs to be reconstructed on emergency basis to restore power to Upper Chitral. The funding requirement for this sector is PKR 1,300 Million.

Agriculture (Agriculture, Livestock and Irrigation Channels)

Livelihood of most of the people living in disaster zone was agro based. They either grow cash crops for their own needs or for sale in the market. A total of 3,225 acres of standing crops were washed away. There is an urgent need for land leveling and plantation of next season's crops. Livestock was the next main sector of livelihoods. A total of 5,116 large and small ruminants perished, along with 548 sheds. Rural communities depend on livestock for their living. There is an urgent need to rebuild sheds and replenish livestock for these communities to continue their livelihoods.

Irrigation channels are a life line of Chitral's agriculture sector. A total of 81 irrigation channels were badly damaged or destroyed. Livelihood of approximately 250,000 people depends on agriculture sector. With approaching winters and Rabi crop season it is of vital importance that farmers get the required water supply. These channels need to be rebuilding on urgent basis for agriculture sector to resume. The funding requirement for this sector is PKR 1,847.59 Million.

Non-Farming Livelihoods

There is a small number of population linked to non-farming livelihoods. A total of 44 shops, 6 hotels and 4 other building were damaged. Most of the hotels were in Kalash area, where tourism is the main economy driver. These hotels need to be rebuilding urgently for tourism to resume.

There is not much data available on exact damages in non-farming sector. There needs to be a concerted effort to collect data for non-farming economy to ascertain exact damages.

Almost all of the sectors will need substantial support from all development agencies including donors. The Government of KPK has formulated a policy for national and international NGOs working in the region in order for smooth rebuild operation. NGOs / INGOs should apply for and receive NoCs on emergency basis.

In order to avoid devastation of this magnitude, the Government should formulate comprehensive policies for replantation of forest and controlled grazing.

It is important to involve communities in rebuild operation for skill building and providing much needed employment opportunities to compromised youth with a potential to lean towards terrorism and other destructive activities for money.

Though the damage is widespread but the funding required is manageable and can be managed jointly by Government, Donors, and Development Partners. There is an urgent need to hold a donor coordination meeting to define roles and responsibilities.

While rebuilding, disaster resilience should be an important consideration to be factored in any rehabilitation efforts.

2. All Data Sets were taken from PDMA Damage Needs Assessment Reports

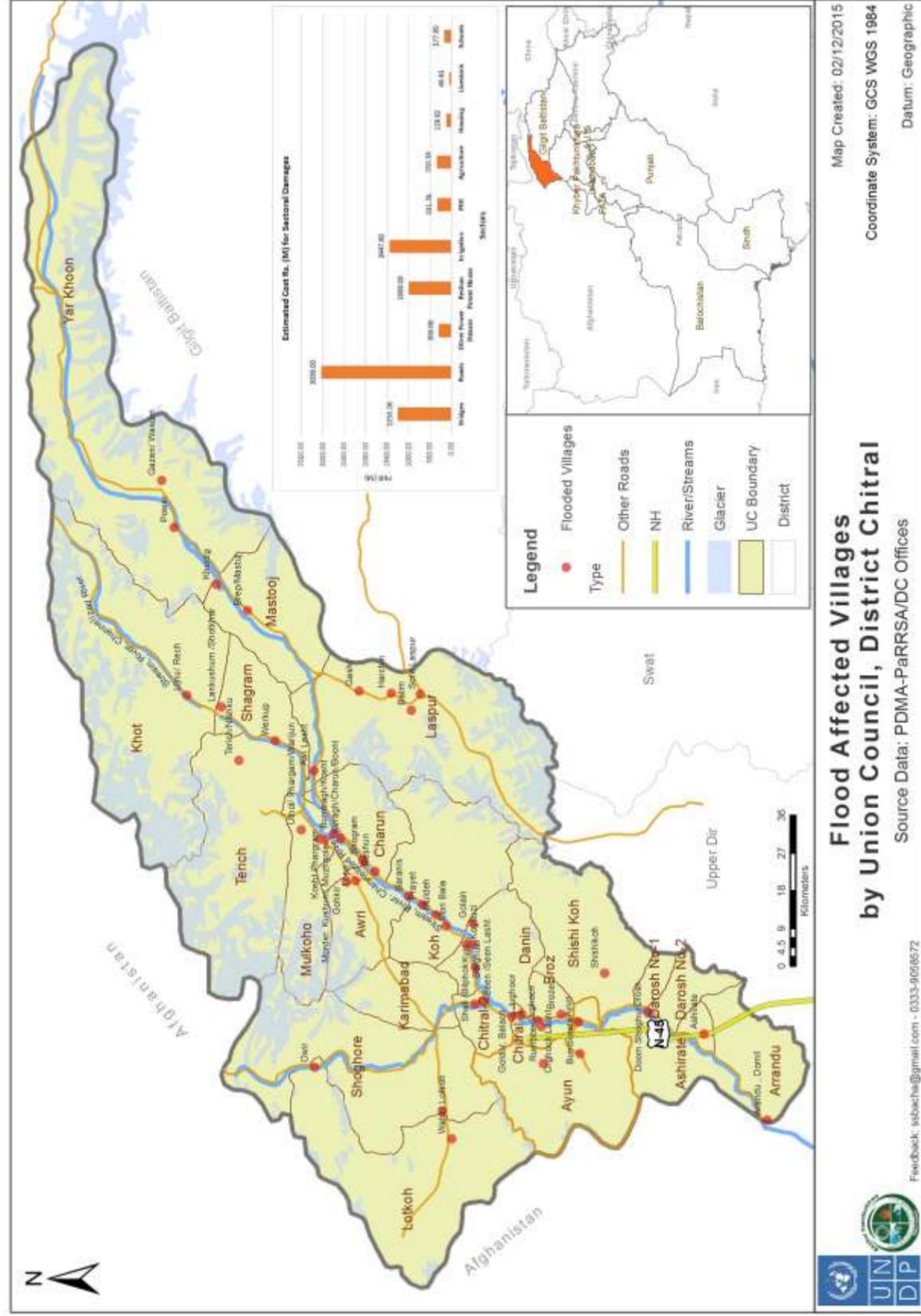


Figure 2: Spatial distribution of the flood affected villages in Chitral

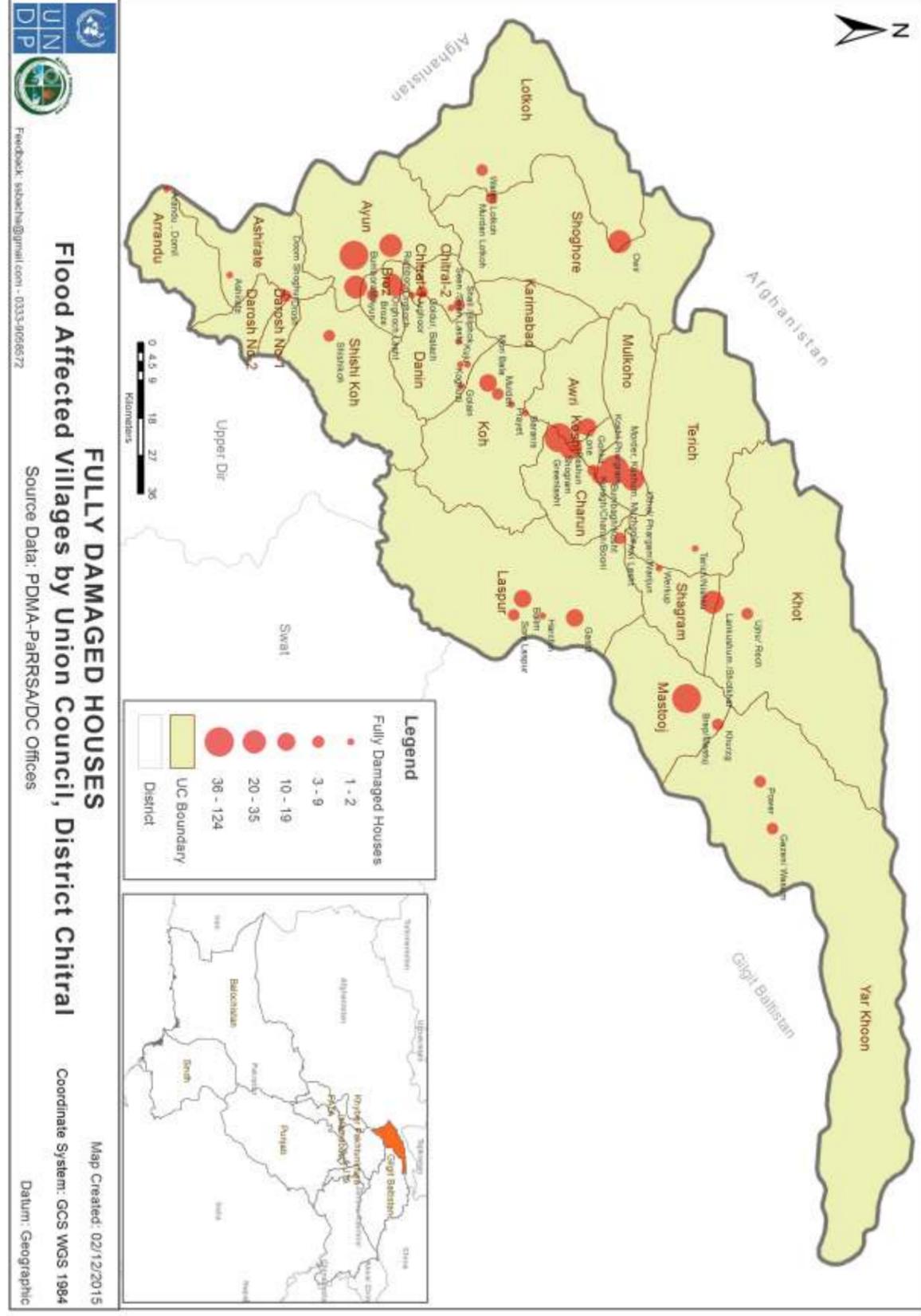


Figure 3: Spatial distribution of the fully-damaged houses in Chitral

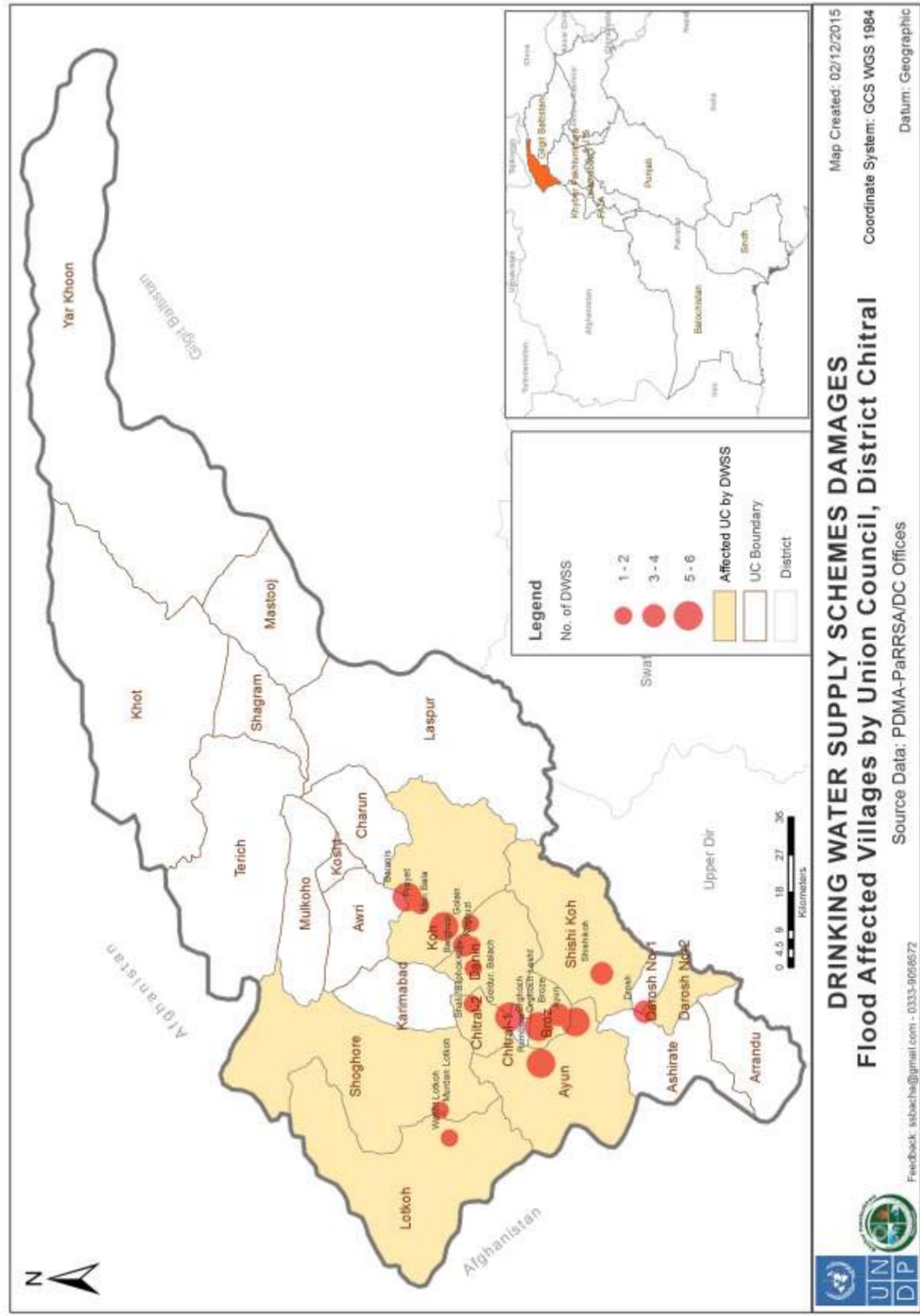
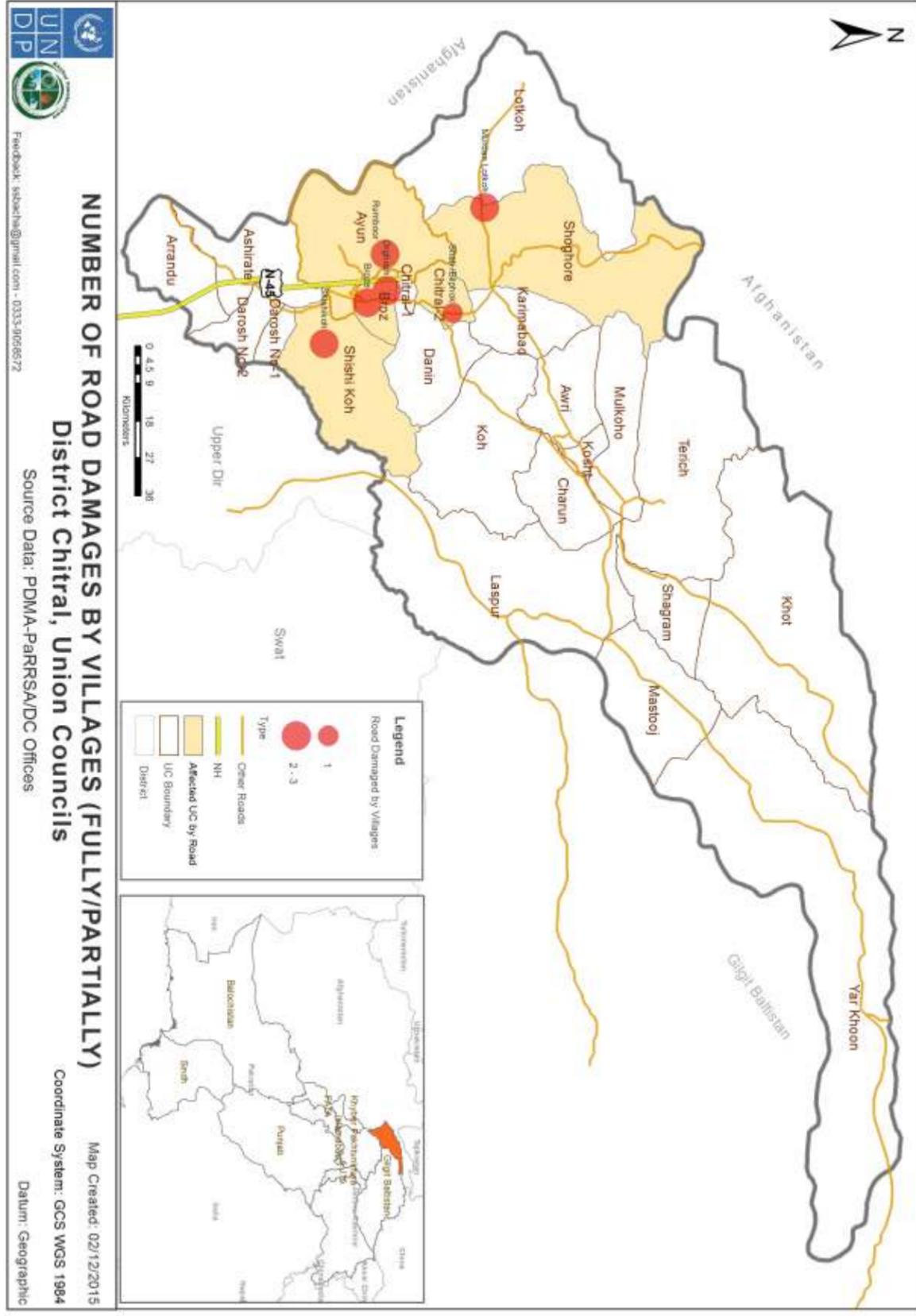


Figure 4: Location of the drinking water supply schemes in Chitral

Figure 5: Distribution of damages road in different villages in Chitral



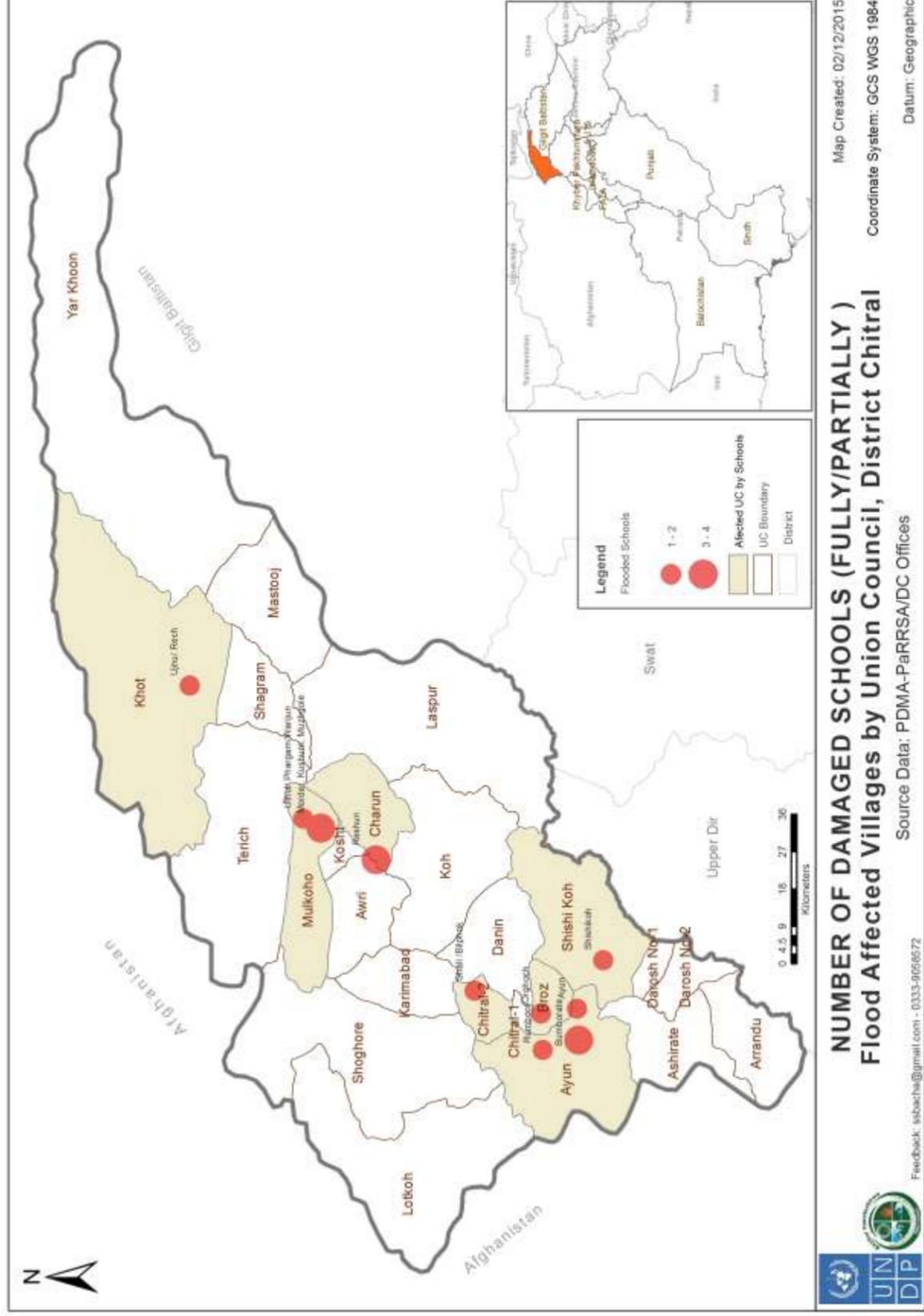


Figure 6: Distribution of damaged schools in different villages in Chitral

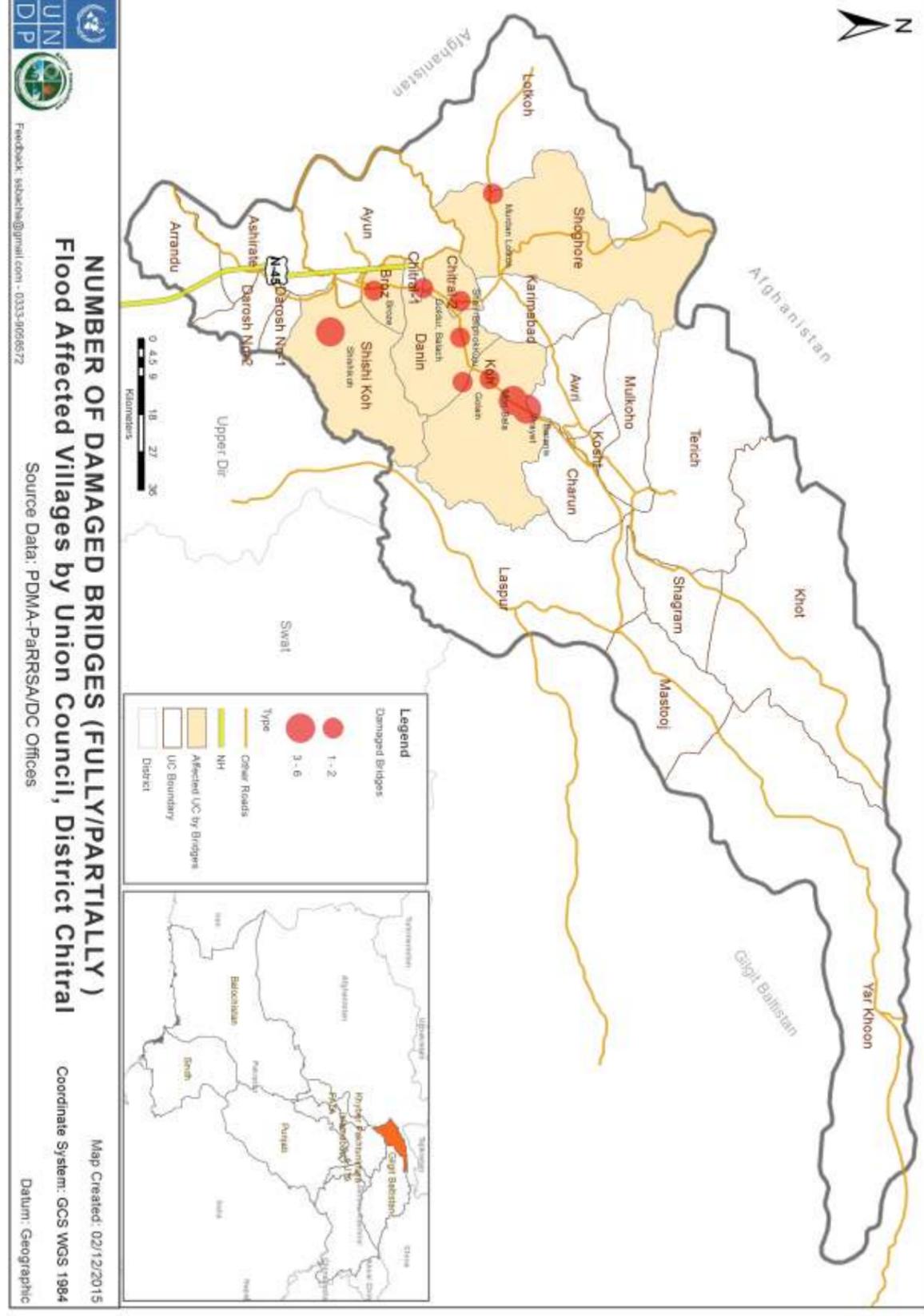


Figure 7: Distribution of damaged bridges in different villages in Chitral

1. BACKGROUND

Chitral is counted amongst the highest regions of the world, sweeping from 1,094 meters at Arandu to 7,726 meters at Tirichmir, and packing over 40 peaks more than 6,100 meters in height. The

terrain of Chitral is very mountainous and Tirich Mir (25,289 feet) the highest peak of the Hindu Kush, rises in the north of the district. Chitral is strategically borders Afghanistan.

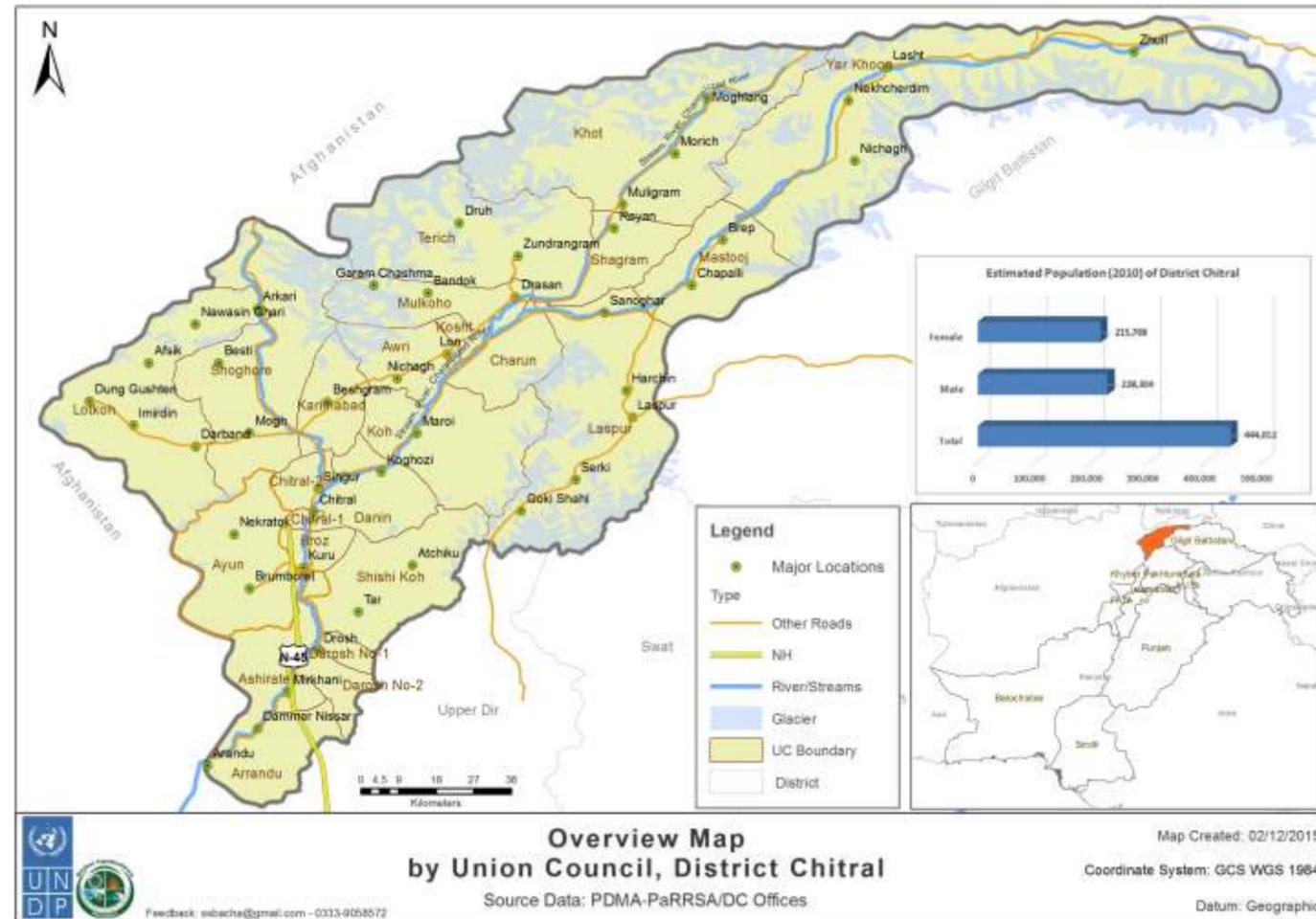


Figure 8: Overview map of Chitral by Union Council

Around 4.8 per cent of the land is covered by forest and 76 per cent is mountains and glaciers. Chitral is connected to the rest of Pakistan by two major road routes, the Lowari Pass (el. 10,230 ft.) from Dir and Shandur Top (elevation 12,200 ft.). Both routes are closed in winter. The Lowari Tunnel is being constructed under the Lowari Pass. A number of other high passes, including Darkot Pass, Thoi Pass and Zagan Pass, provide access on foot to Chitral from

Gilgit-Baltistan in Ghizer District.

Most of the population of Chitral lives in vulnerable areas surrounded by mountains. These mountains have very little capacity to absorb any kind of natural hazards like rain, snow, earthquake, hail storm, river raise and winds. Due this, historically Chitral is prone to natural disaster of varying magnitudes resulting in loss of life and livelihood.

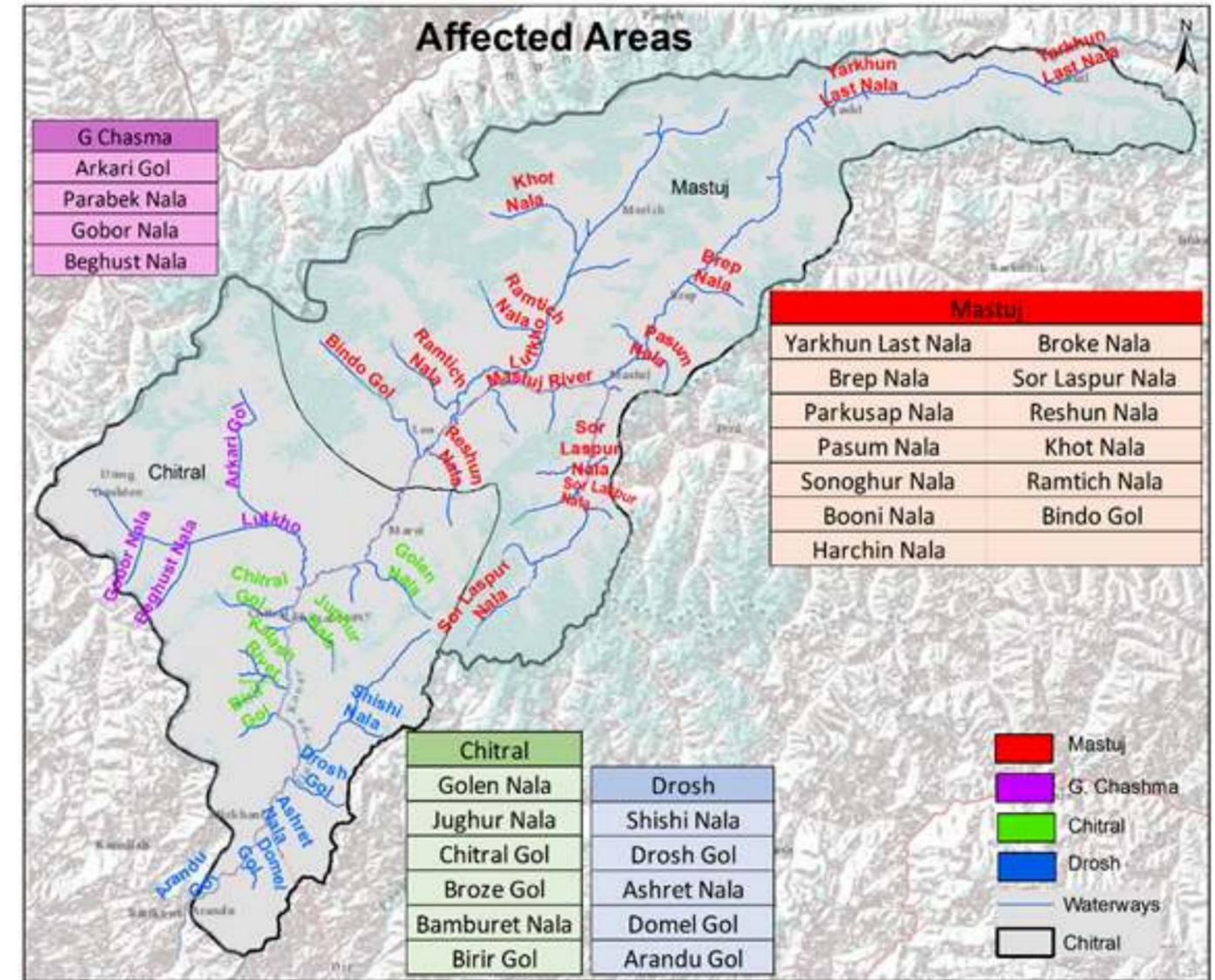


Figure 9: Areas Affected by 2015 Floods (Source: PDMA-PaRRSA Assessment Report)

Recently, starting on 16th July, ending 2nd August 2015, Chitral was hit by flash floods and Glacial Lake Outburst Flood (GLOF) of high to very high intensity in different areas of Mastuj and other Chitral subdivisions. Thirty Six lives were lost due to these floods. River Chitral is the main river flowing through the valley. Both left and right banks are considered danger zones. Historically, river Chitral is the main contributor in damages during flood conditions.

Various reports suggest monsoons and GLOF as the primary contributor to floods, however, the other major contributing factor to devastation is heavy deforestation and excessive cattle grazing by local population. There is no structured plan for replacement tree plantation or control of graze lands from the Government. With global warming on rise coupled with historic vulnerability to floods and rain outbursts, the next floods in Chitral have a potential of even greater destruction

Sr.	Hazard Type	Occurrences											
		Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
1	Flash Floods						The entire district is vulnerable to flash floods						
2	Avalanches	Permanent snow covered areas are at risk of avalanches											
3	Floods						Areas along rivers and streams (undercutting/erosion)						
4	GLOFs				GLOF and associated hazards threaten glaciated areas and surrounding communities.								
5	Landslides												
6	Drought	The last drought was 2000 - 2001											
7	Snow												
8	Earthquake												

Figure 10: Hazard Calendar in Chitral (Source: PDMA-PaRRSA Assessment Report)

Apart from loss of life, these catastrophic floods and GLOF caused major destruction to houses, bridges, irrigation channels, water supply schemes, and roads. Further standing crops and livestock was washed away, leading to huge economic loss to already economically compromised population resulting in increase in poverty.

Further, apart from economic loss, this catastrophe caused major displacement of population. The internally displaced population became a burden on

already compromised social services, particularly health and education.

The discussion below provides a snap shot of the situation as it exists post floods:

a) Affected population

A large number of population was affected directly or indirectly, the table below represents total affected population by area:

Sr.	Area	Affected Population
1	Kalash Valley	25,000
2	Garam Chashma	80,000
3	Upper Chitral (Booni, Mastuj, Mulkow, Torkow & Yarkhoon)	200,000
4	Oweer Valley	2,500
Total Affected Population		307,500

Table 3: Affected Population (Source: PDMA-PaRRSA Assessment Report)

b) Effects on Household Demographics

Chitral has an interesting mix of population with Sunni Muslims along with Ismailis, Agha Khanis and

non-Muslims in Kalash area. They live in perfect harmony and no incidence of religion conflicts has ever been reported. Kohwari, is the most widely spoken language. Other seven spoken languages are;

Burushaski, Shina, Yidgha, Tajiki, Pashayi, Pashto, Yidgha and Gojri. English and Urdu are also spoken widely.

Despite such a religious diversity, no significant effect was reported or observed on demographics due to the floods.

c) Gender of household head

Males are predominantly the head of the households in Chitral.

d) Disaster-induced conflict

Disaster induced conflicts is an issue of immediate relevance, because of the potential magnitude and scope of environmentally induced factors. Climate-related stressors combined with ecosystem change - such as gradual - and rapid-onset events - already drive migration. District Government Chitral already has to plan for the relocation and resettlement of affected populations. By means of the requirement for identifying appropriate adaptation pathways for climate change becomes more acute, it is imperative to address how changing environmental conditions affects individual and group decisions.

So far there are no reported disaster induced conflicts reported or observed. This does not mean that they will or have the potential to arise. A lot of effort is still required to identify the alternatives to smooth the

way forward and avoid tensions over natural and social resources, to minimize the conflict potential or even potential conflict. Besides, government must shoulder the responsibility to ensure social security of the affected people living in the disaster areas for their co-existence and to avoid social unrest. Government of KPK must make best use of international forums to bring more resources to take necessary steps before or after disasters to preclude any potential conflicts.

e) Likely impacts on human development indicators

Natural disasters in Chitral are increasing phenomena that we all clearly perceive and know that will have a direct impact on the welfare of the region and also on specific household indicators in the area. Depending on where communities are, earthquakes, floods, droughts, etc., are threats to lives, properties, productive assets, and also can have a disastrous impact on social indicators.

The growing incidence of natural disasters in Chitral is highly correlated to the increasing vulnerability of households and communities, as previous socioeconomic vulnerabilities may exacerbate the impact of a natural disaster, making more difficult the process of recovery. Thus, the impact of such events could result in an immediate increase in poverty and deprivation.

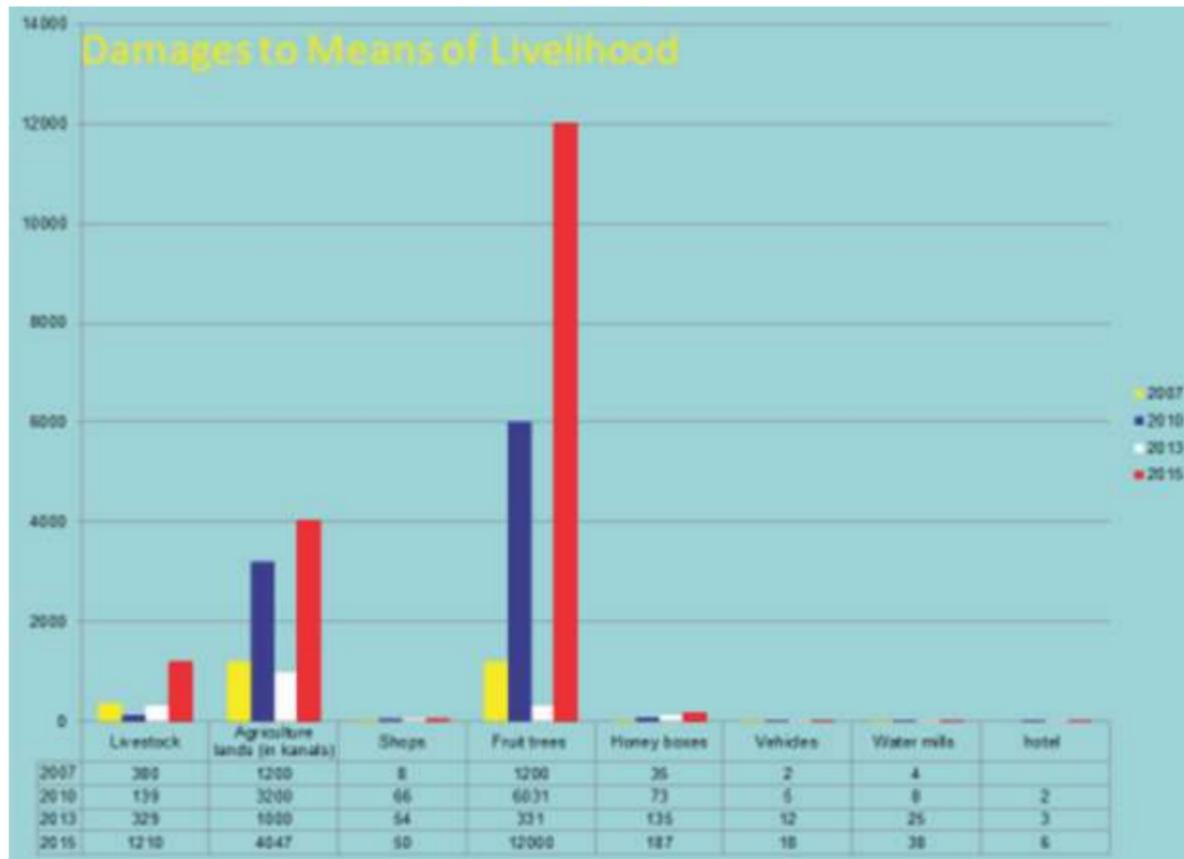


Figure 11: Damages to Means of Livelihoods (Source PDMA-PaRRSA Assessment Report)

The recent floods had substantial impact on human development indicators. With approaching winters, the population will have less resource to engage in any meaningful economic activity. Traditionally, the population depended on the savings from summer economic activity to go through harsh winters. This year most population directly or indirectly lost the economic window available during summer months. The floods has affected the winter farming opportunities as well. The lands have to rehabilitated, reclaimed and prepared. This is a slow process and will require substantial efforts. Further the population has lost their homes as well as other means of livelihoods such as cattle, shops, fruit trees, etc. This has led to major economic loss for the already economically deprived population.

f) Implications for Recovery

Recovery efforts are underway but there are certain

inherent constraints that plague the recovery efforts. With the approaching winters, it will become difficult to proceed with rebuild and reconstruction efforts at a satisfactory pace. The financial and human resources available are inadequate to complete the rehabilitation efforts. The traditional slow response from the Government is another constraint in recovery efforts.

Political actors and elected representatives raised the expectations of the affected population by politically driven statements, were not met, leaving an environment of distrust amongst the affected population.

g) First Responses by the Government

The Provincial government moved quickly to address relief aspects and consequences of the crisis on hand. The relief efforts have included, establishment of

District Emergency Operations Center (DEOC) in Deputy Commissioner Chitral Office, which operated round the clock for dissemination of alerts, due to which ratio of the life losses were minimal as compared to intensity of disaster. The majority of the community managed to escape, except 36 peoples, who died in the incident.

Initially PDMA Khyber Pakhtunkhwa had provided 1200 tents, 3000 blankets, 400 mats, 200 foams, 1,000,000 Aqua tabs and 200 Jerry Can along with 1500 food packages with the help of Pak Army, Chitral Scouts and District Administration to the flood affected people of District Chitral.

Beside all these Provincial Disaster Management Authority has also released PKR 470.89 Million (see Annex 7 for details) for emergency restoration of Roads, Bridges, Water Supply Schemes, Irrigation and flood protection works to the Line Departments, District Administration and Pak Army in District Chitral. Details of Government response is attached as Annex 5.

Similarly International and local partners (NGOs & INGOs) provided, supported and complemented the initiative as per their mandate. The following NGOs played a significant role in emergency and relief

operations:

- Agha Khan Rural Support Program (AKRSP)
- Pakistan Red Crescent Society (PRCS)
- Sarhad Rural Support Program (SRSP)
- Focus On Humanitarian Assistance (FOCUS)
- Agha Khan Planning and Building Services (AKPBS)
- Al-Khidmat Foundation
- Al-Khair Foundation
- Helping Hand For Relief And Development (HHRD)
- Inter Cooperation

A detailed description on NGOs response is attached as Annex 6.

While NGOs are responding to the emergency, some NGOs despite the clear instructions of PDMA and District Administration have carried out their activities without a valid No Objection Certificate (NoC), and coordination with the District Administration.

h) Geographical Scope

The geographical scope of the assessment was Chitral and Mastuj sub divisions.

2. SECTORAL DAMAGES ASSESSMENT

2.1 Education

Context

The damage to schools was low to moderate, there were a total of 30 schools damaged, where only seven schools were completely destroyed and remaining

were partially damaged. Some schools included in the assessment were vulnerable to floods and require additional resilience such as protection walls, etc. The total students affected by damage to the schools are 3,782. A detailed table indicating school damages is attached as Annex 4.a. The following chart represents enrolment affected at each damaged school.

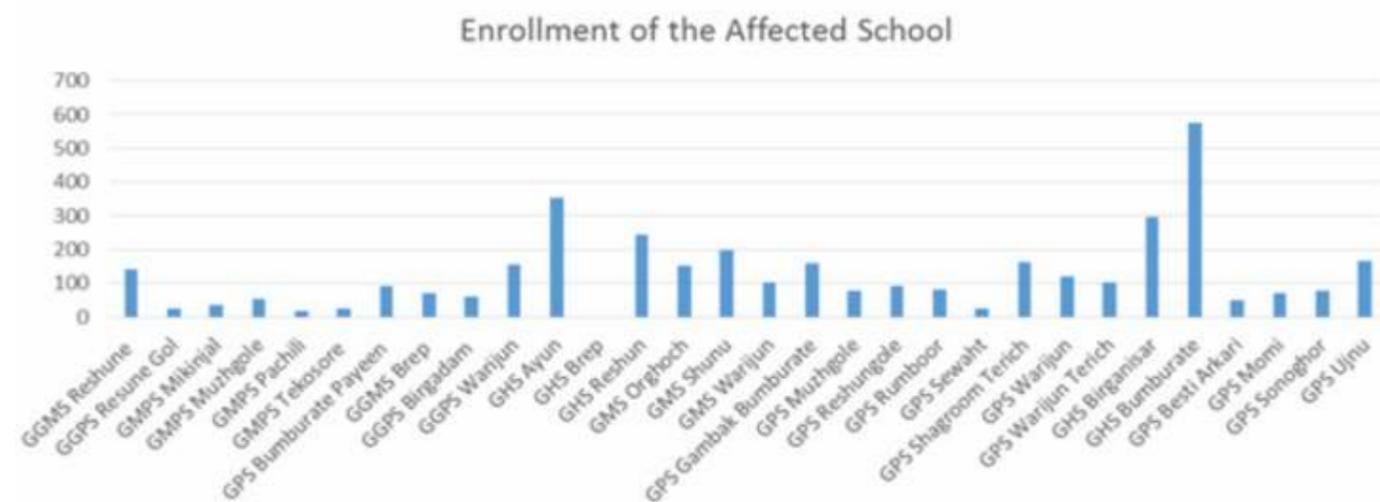


Figure 12: Damages to Schools (Source: Education Department KPK)

Key Challenges

Temporary schools were setup in the camps, which does not provide ideal environment for learning. Chitral is a winter zone and the schools are likely to close in December. The challenge to rebuild would be complex as the construction activities may come to a standstill due to harsh weather conditions coupled with damage to communication physical infrastructure (roads and bridges). Further availability of timely funding is critical to move with reconstruction/rebuild activities.

Strategy

There are several District Government and donor programs that can be deployed and these damaged or destroyed schools can be rebuilding. UKAID and

others donors have planned programs that were in place before the floods. These programs should be activated on emergency basis to rebuild the damaged schools. Due to interventions available in education sector currently the priority is low to medium. Chitral is located in winter zone hence the schools will be closed during the winter months. This will provide an opportunity for rebuilding on emergency basis. If rebuild operation does not start immediately, the students may lose a full school year.

Technical training will be provided to both skilled and unskilled persons to advance their construction skills and learn the DRR elements through the basic technical trainings being organized through highly qualified teams of engineers, including selection of right material, appropriate reinforcements, selection of construction sites, etc. On the job training to both

women and men will allow affected communities to get livelihood opportunities while learning new skills.

2.2 Housing

Context

Flash and mud slide ravaged Chitral when torrential

rains started on 16th July 2015. As of 25th August, the floods caused 36 deaths and affected approximately 307,500 people in the district. In addition to the loss of life and injury, there has been a social and economic cost: the partial and total loss of houses.

The chart below represents the extent of damages and houses affected:

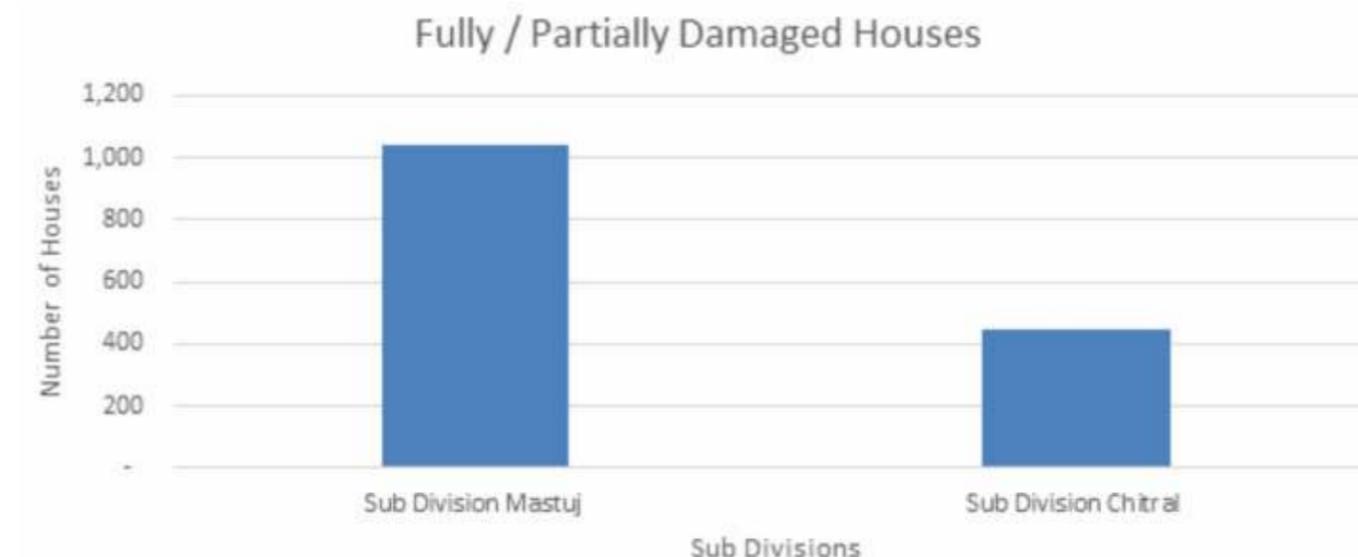


Figure 13: Damages to Houses (Source: PDMA-PaRRSA Assessment Report)

Key Challenges

The temporarily displaced people have started rehabilitating their damaged houses and moving back to their places of origin/ homes as the flood waters receded in most places. During different surveys while assessing the damages, households highlighted lack of financial means to rebuild as their top concerns regarding the current shelter and housing situation.

As per joint revalidation teams' visit to Chitral, affected households are not adequately provided with proper housing facilities due to limited resources. The affected communities are living in makeshift arrangements and for these households the upcoming winters will be an even greater challenge. The more scattered location of the houses is an even greater challenge in terms of reaching the

affected communities for assistance. Access to delivering the construction materials in terms of transportation as well as availability and labour will both be economically and viability wise challenge.

Strategy

The overall housing assistance strategy will focus on integration of DRR elements at various level of the construction process through establishing Housing Reconstruction Centres (HRCs), technical skill development trainings, construction of model houses, providing on site guidance to communities and distribution of technical information material on safer construction.

The affected communities, particularly those whose homes have been either partially or fully damaged in the floods, will have access to shelter and that basic

protection from the rain and (extreme weather) sun will be ensured, including their privacy and dignity. The early recovery phase will focus on providing a flood resistant housing solution with DRR elements and in minimizing vulnerability of the affected populations in a dignified and sustainable manner. Priority will be on assisting those whose homes have been destroyed (fully damaged) or heavily damaged (partially damaged) by providing appropriate means and structural materials for repair and rehabilitation,

primarily based upon the use of traditional building materials enhanced with appropriate technical guideline for skilled worker and layman and support for revitalizing the supply chain of key construction materials. Skills development will also help in ensuring sustainability of the safer construction in future. The affected population may be compensated as per PDMA notified policy on loss of life and property as defined below:

Category	Description	Amount
Category-1	Death	300,000
Category-2	Injured	100,000
Category-3	Fully Damage House 02 Room & Above	100,000
Category-4	Fully Damage 01 Room + Fallen Boundary Wall	80,000
Category-5	Fully Damaged One Room Only	50,000
Category-6	Fallen Boundary Wall	30,000

Table 4: Death and Damage Compensation (Source: PDMA-PaRRSA Assessment Report)

Priority

This is a high priority sector as there is an urgent need to rehabilitate these people before the onset of winters. If not started on time, it carries other risks such as health, which is under control currently.

A detailed damage table is attached as Annex 4.b.

2.3 Transport (Road and Bridges)

The worst hit sector during 2015 in Chitral floods was physical infrastructure. Physical infrastructure includes roads and bridges. The KPK Government and PDMA allocated part of PKR 470.89 Million for restoration of physical infrastructure. The major focus of the humanitarian response was on relief with very little recovery support available to the affected

physical infrastructure. Due to badly affected physical infrastructure communities have limited access to their homes and public services, coupled with complete power outage in Upper Chitral. This has further deteriorated their already compromised economic status. As a result their daily life is severely disrupted. Due to damaged water scheme of Chitral, the city is without water and is yet to repair the water schemes.

The majority of affected communities in the worst hit areas need physical infrastructure rehabilitated to improve conditions in and around their villages and towns. The following charts illustrate the regions' physical infrastructure needs. According to C & W report, a total of 817.5 KM of roads and 2,691 meters length of bridges is damaged.

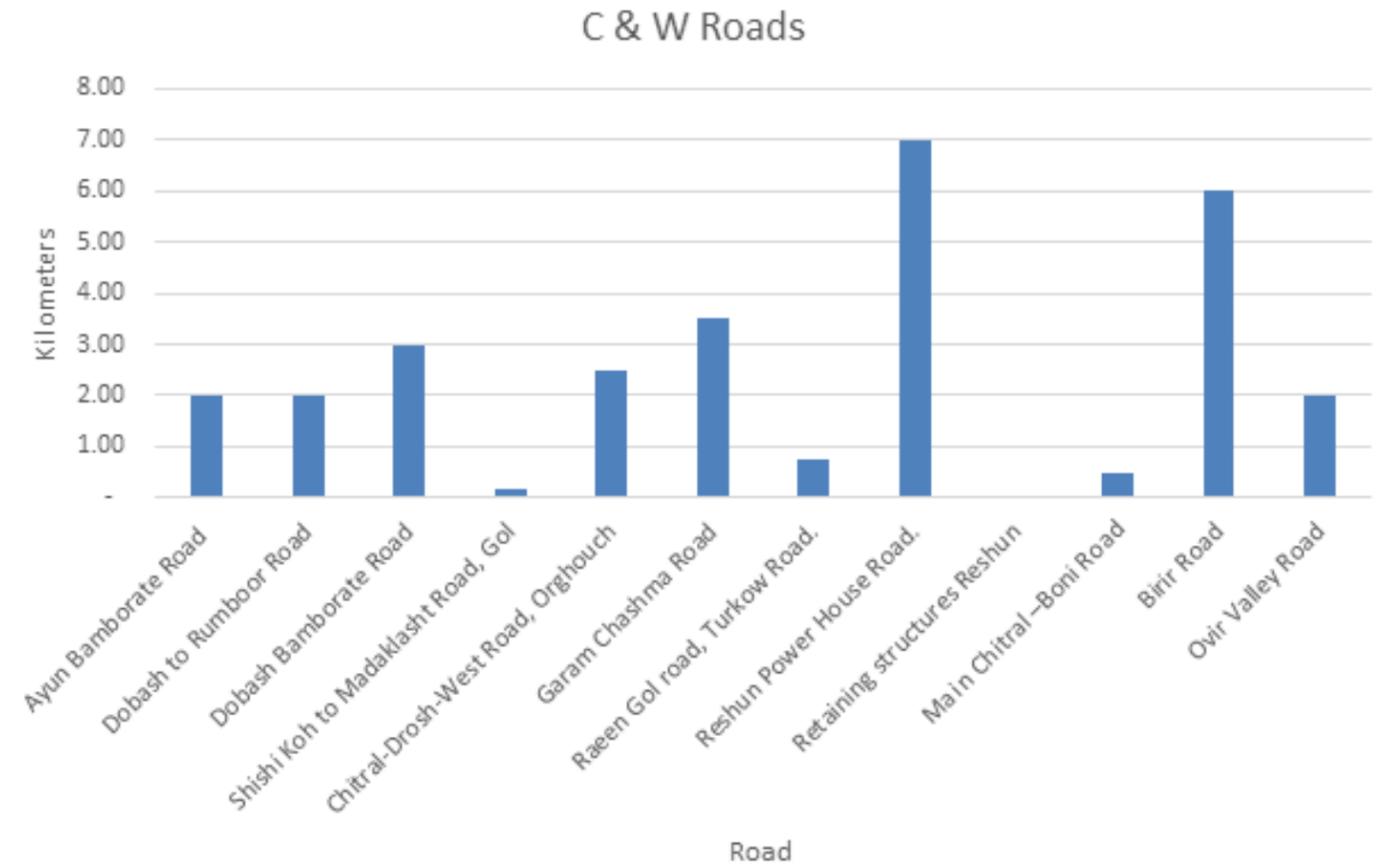


Figure 14: Damages to Roads (Source: C & W)

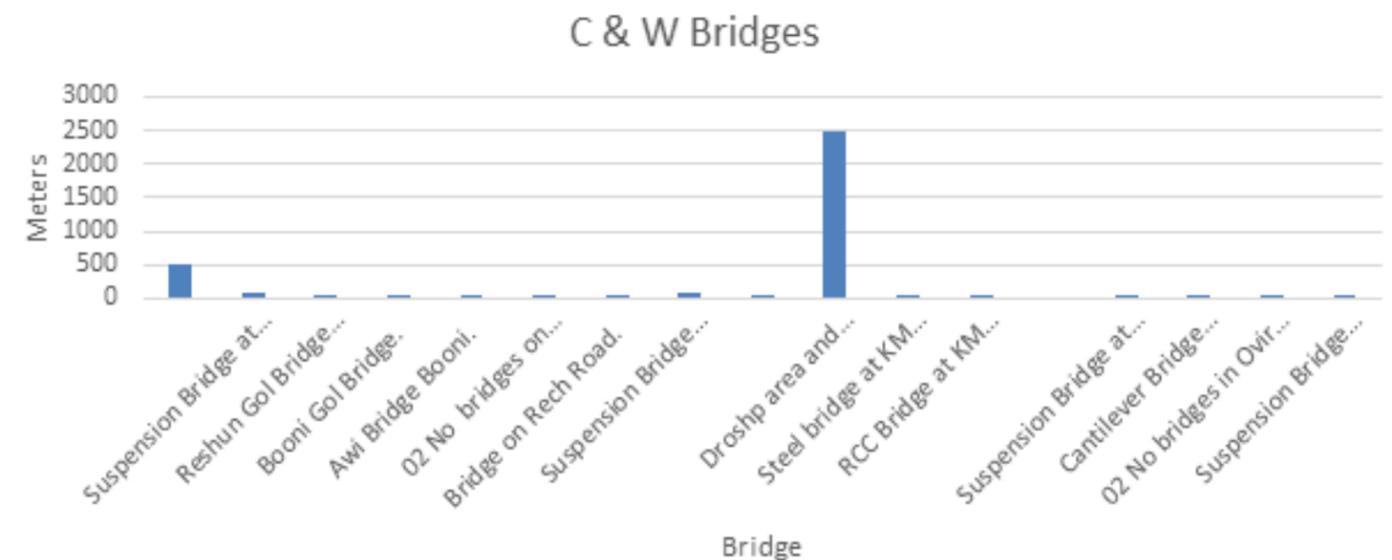


Figure 15: Damages to Bridges (Source: C & W)

District Council Roads and Bridges

Apart from C & W roads and bridges, there is a substantial damage to District Council Roads and Bridges. There are approximately 27 roads and 32 bridges damaged, which are under the administrative control of District Councils. Roads and bridges under District Councils are mostly jeepable roads and pedestrian bridges. Detailed table of roads and bridges are attached as Annex 4.c & d.

Major problems likely to result from damage to infrastructure, varying in magnitude and scale in various locations, are:

- Farmers cannot transport seeds and fertilizers, or harvested crops from market-to-farm or farm-to-market due to damaged link and access roads, jeopardizing their income generation efforts;
- People and support organizations face difficulties transporting construction and other materials to rebuild houses and infrastructure due to damaged communication links;
- Women, children and people with disability and age cannot freely travel to health services and schools because broken streets are filled with mud and sewerage;
- Damaged drains obstruct the flow of water creating an unhealthy environment, especially for children around their homes and schools, making them vulnerable to disease;
- Damaged irrigation and flood protection structures have deprived the communities of irrigation water to cultivate their crops. Moreover, they represent another potential hazard, placing many communities at risk from any future floods.

Infrastructure repair will restore access and mobility to men, women, and children in the affected areas.

Challenges

The impact of the floods has not been uniform across the region. A 'one size fits all' approach for all affected areas will not be effective. Tailor-made approaches need to be developed based on the actual impact of the floods in each location.

The conventional non-integrated approach by the line agencies and humanitarian organizations would limit the impact of humanitarian action. A bottom up participatory approach needs to be adopted to develop coherent plans to support early recovery needs in an integrated manner.

Strategy

The widespread nature of the disaster means that collaboration is needed between as many development partners as possible, including the affected communities. Ideally projects will be implemented by communities based on their abilities. Some larger projects are complex and difficult for communities to implement. Local NGOs and local government authorities will be engaged in such instances. This requires capacity development of district based NGOs and local authorities so they can successfully manage early recovery and long term development challenges.

Specific features and principles of the public infrastructure early recovery and long term development strategy are outlined below.

- Priority activities include:
 - Repair access/link roads;
 - Restore drains;
 - Repair village streets and pathways;
- To revive the local economy in flood-hit areas, local communities will be involved in rehabilitation through Cash-for-Work initiatives where hiring preference will be given to local workers.
- Poor women, children, the disabled, the elderly and minority groups are among the most vulnerable. Their needs will be prioritized.
- The recovery programs will develop specific implementation strategies (including activities and monitoring and evaluation plans). There will be a targeted, area based and multi-sector approach to supporting the most needy and vulnerable populations.
- The recovery programs will strive to sensitize

donors about gaps, and the need for timely action. It will also strive to build trust among donors and members and promote close interaction by inviting donors to coordination meetings.

- From a sustainable development perspective and in line with the Hyogo Framework for Action (HFA), special emphasis will be placed on mainstreaming Disaster Risk Reduction into the early recovery process.
- The recovery programs will prepare guidelines and minimum standards to ensure quality, participation of communities in decision making and implementation and supervision, and mainstreaming disabilities and other protection and cross-cutting issues.

Priority

This is a high priority sector. It is disrupting lives of communities as well severely limiting economic activity in the region. Further access through roads and bridges is disrupted. This sector will require substantial external funding and should be arranged on emergency basis. With winters approaching, it would become almost impossible to start any reconstruction activity.

2.4 Water Sanitation and Health (WASH)

I. Water Supply Schemes (WSS)

All the WSSs of Chitral are connected to some spring in the Nullahs of the area (hill tops), Therefore vulnerable to Flash Floods. Water Supply Schemes were also affected from recent Flash floods and rains. Mud flow has contaminated water resources and is not suitable for drinking purpose. The damages were incurred mostly to water ponds and water pipes, along streams and without external support it is very difficult that communities will restore these infrastructures voluntarily. In order to mitigate water borne diseases it is prerequisite to restore these Water supply Schemes well in time. As per initial assessment of the PHE Department about 61 WSS were damaged out of which 10 restored and 30% of material have been transported to the affected sites for immediate restoration of the schemes.

A total of 128 Water Supply schemes were destroyed in 14 UCs of Chitral sub division and 56 Water Supply schemes in 10 UCs of Mastuj sub division. A detailed damage report is attached as Annex 4.e.



Figure 16: Damages to Water Supply Schemes, Chitral (Source: PDMA-PaRRSA Assessment Report)

Sub Division Mastuj Water Schemes Damaged

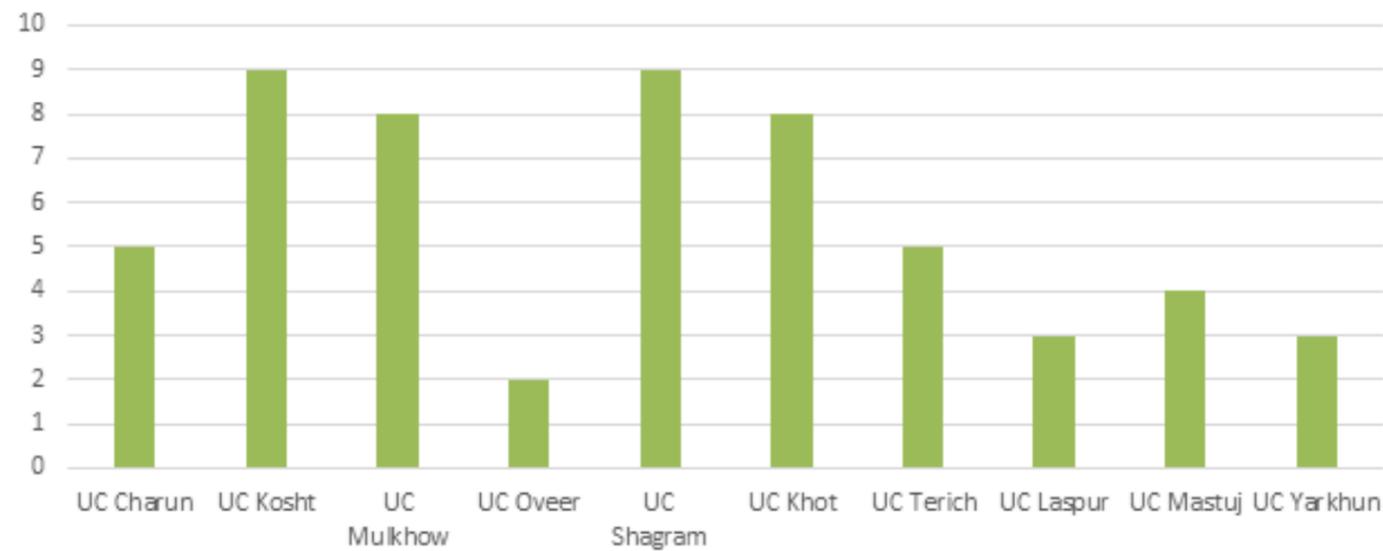


Figure 17: Damages to Water Supply Schemes, Mastuj (Source: PDMA-PaRRSA Assessment Report)

II. Health

No substantial damages were reported in health sector. There is however, prevalence of diseases commonly associated with hygiene issues such as diarrhea, cholera, etc. These diseases by no way or means are at the epidemic stage and are being handled by District Government and development partners.

2.5 Energy (Electric Supply)

A total of 11 Power Generation stations were damaged. Reshun Power Generation Station was the largest power generation station damaged. Upper Chitral is out of electricity since the floods. The estimated cost of rebuilding Reshun Power Station is approximately PKR 1.0 Billion. It has a total capacity of 4.2 MW.

This is a high priority sector as most of Upper Chitral is without power since the floods in July – August 2015. The situation has not changed and the area remains without power supply. With the severe winters setting in early, the population will be severely affected by the absence of power. The rebuild

operation will be extensive and will require additional feasibilities for safe relocation of the plant.

Agriculture, Livestock and Irrigation Channels

Situation overview

The 2015 floods in Chitral had devastating effects on food security and livelihoods, especially in terms of agriculture, livestock and irrigation. Standing crops were destroyed, livestock were lost, irrigation channels were destroyed and livelihood activities were curtailed. Early warnings and well-organized rescue operations, prevented higher losses of lives, but sound planning, sufficient resources and time will be required for complete recovery in livelihoods and food security. The following overview provides a snapshot of the damage caused by floods and the recovery needs.

2.6 Agriculture

Agriculture is one of the most flood affected sectors. At the time of the flood, rainy season crops especially Wheat, Maize, Rice, Potatoes, Vegetables, Pulses, Fodder, Peas, Barley and Fruits were ready to harvest.

According to government estimates, around 3,225.25 acres of standing crops and fruits were destroyed. Extensive damages were reported in both regions. A Multi-sector Initial Rapid Assessment conducted in the worst affected areas indicated that agriculture was the prime source of income for most of the households. An estimated 7,414 farmers reported loss of livelihoods. The Damage Needs Assessment (DNA) estimates that around 250,000 farming households were affected overall. Loss of standing crops not only affected the income bases of farmers, but also impacted overall production, especially for

potatoes. Along with this, loss of seed stocks and agricultural tools, destruction of irrigation channels and land erosion further deteriorated the agriculture sector. DNA indicated some 81 fully or partially damaged embankments, water harvesting schemes, reservoirs and secondary and tertiary irrigation channels were also affected due to floods. A detailed damage report is attached as Annex 4.f.

The chart below represents agriculture land destroyed and the crops cultivated on that land:

Agriculture Damages

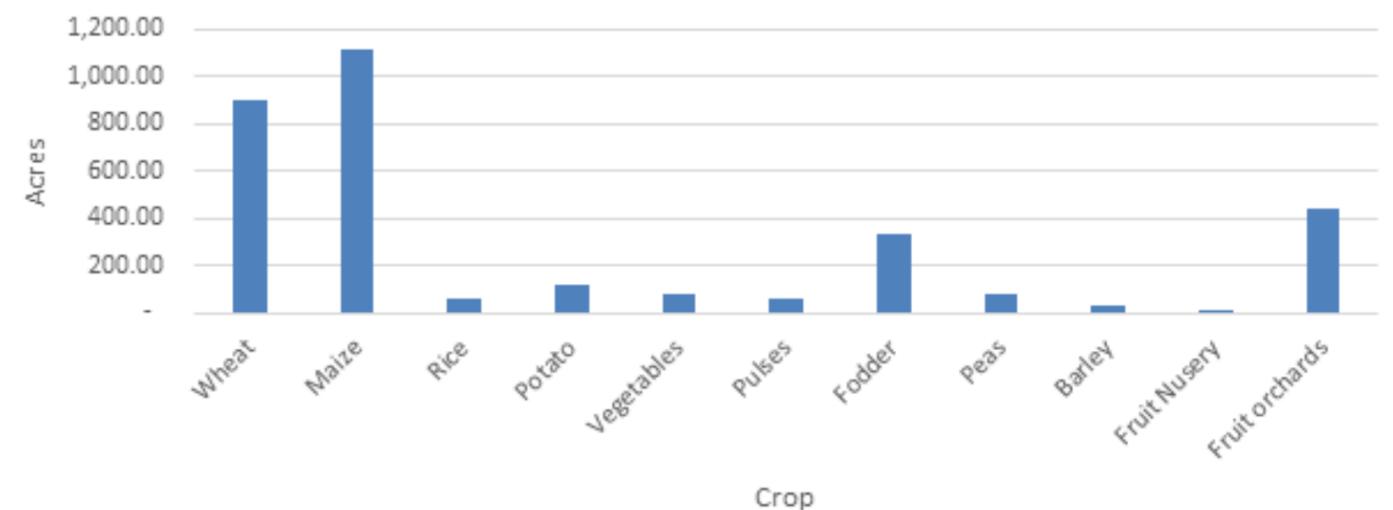


Figure 18: Damages to Crops (Source: Department of Agriculture, Chitral)

2.7 Livestock

Livestock rearing is often considered a secondary source of income and also fulfils household food and nutrition needs. Significant losses in the livestock sectors were also observed due to the floods. Overall

5,116 small and large ruminants were reported lost and 548 sheds destroyed due to floods. Distress selling was also reported in some places, mainly due to unavailability of fodder/shelter for animals. The following chart represents livestock losses:



Figure 19: Damages to Livestock (Source: PDMA-PaRRSA Assessment Report)

A detailed table of livestock losses is attached as Annex 4.g.

2.8 Irrigation Channels

The Irrigation Channels are the lifeline of the local farming, which were destroyed either partially or fully by the flash floods 2015. The floods mainly damaged the head works and the channels in major areas. The floods eroded head works of the channels, thus making it very difficult to divert the water towards the fields, resultantly the standing crops are going to sustain damage.

In pre-Monsoon Contingency meeting, Irrigation Department had identified the following vulnerable area likely to be affected in the monsoon floods. A total of 81 irrigation channels were destroyed. A detailed damage report is attached as Annex 4.h.

- Vulnerability

Poor/low income earner households are often more vulnerable in disasters. Harsh conditions of the upcoming winter season, along with non-availability of land and agriculture inputs have the potential to

not only to put the affected communities “at risk” but the beneficiary population as well. There is an urgent need of rehabilitation of agriculture land, irrigation channels, roads and bridges. If the rehabilitation is not provided on emergency basis, before the onset of winters, the farmers will not be able to cultivate their next seasons' crops.

- Recommendations for resilience based recovery

During recovery and rehabilitation activities, it is imperative to incorporate mitigation and risk reduction measures to reduce the vulnerabilities of future disasters. Some key recommendations in this regard are given below to follow the build-back-better approach in recovery and rehabilitation activities.

- Diversification in livelihoods portfolio

Diversification in livelihoods portfolio of rural populations can make them more resilient to natural disasters. The diversification in livelihoods is an important driving factor that may increase the resilience of affected households by strengthening

alternate means of income, supporting social safety nets and increasing adaptive capacity. Promotion of agro-pastoralist livelihoods, strengthening women's participation through home-based industry and support to alternate sources of income will be beneficial in this regard. Specifically, aquaculture is an important livelihood intervention and needs to be combined with raised bed platforms where the water is available. One of the initiatives to promote diversification in livelihoods may include imparting small enterprise/entrepreneurial skills development through skills training with an incentive whereby cash or food will be provided to meet the beneficiaries' opportunity cost for participating in skills development training. Moreover, promotion of kitchen gardening has been proven to supplement livelihoods so this will also be recommended, entailing provision of seeds and training. It could be in the form of a package which may include back-yard poultry raising training and incentives.

- Improved crop systems and promotion of flood resistant crops

Promotion of flood resistant crops, like sugarcane and tall varieties of rice, in flood prone areas can significantly reduce crop losses in case of flooding. Some successful stories in this regard were reported by the farmers of northern Sindh during the Livelihood Recovery Appraisal (LRA-2013). The negative effects of floods can also be minimized by crop diversification and by focusing on alternate short duration crops (vegetable/pulses and legumes) and early maturing varieties of major crop like rice, maize, etc. This will include some piloting activities on crop diversification. This will be accompanied by awareness raising activities/seminars with farmers in the field.

- Climate smart agriculture

Adaptation to climate change is vital for natural disaster prevention and risk reduction, especially floods. Agriculture and food systems must undergo significant transformations to meet the related challenges of food security and climate change.

Mainstreaming climate-smart agriculture into national policies and programs is essential in this regard. The FAO/WFP strategy on climate smart agriculture will be helpful in developing a green economy and preserving the ecosystem.

- Resilience in the livestock sector

Diversity in livestock, rearing of improved breeds and improving animal health, including disease prevention and management, are a few important steps to increase the resilience of the livestock sector. Improving fodder and feed management and storage is also vital in this regard. To support affected communities, the programme will pilot, educate and impart skills in keeping diversified livestock and improving animal health and will introduce improved livestock management practices.

- Flood resilient infrastructure

Community and agriculture related infrastructure – including raised roads (farm to market or village access roads), irrigation channels, water drainage schemes and flood protection bunds – should be constructed keeping in mind risk reduction measures. At the grassroots level cash/food for work programs will also be employed to rehabilitate rural agricultural infrastructure. This will be supplemented with training for the farmers in the maintenance and upkeep of agricultural infrastructure.

- Climate-resilient participatory reforestation and rangeland improvement

Deforestation increases the likelihood and magnitude of flooding. Strengthening forestry and improving rangeland is the key to reducing the risk of floods. A community based participatory approach for reforestation and range management will not only strengthen the forestry, but will also increase awareness/ownership among farming communities. Along with this, increasing the use of perennial crops and growing and maintaining shrubs and trees in the farm landscape will not only improve flood resistance, but will also improve soil resilience and

provide diverse products (food, fodder, fuel, fiber, timber, etc.). Agro-forestry can also reduce erosion, enhance crop and fodder production and improve water quality, enhancing resilience to climate change by supporting eco-systems.

The affected farmers and villages will be encouraged to undertake agro-forestry and reforestation campaigns by incentivizing these activities by providing training, food and cash as necessary. Special campaigns may also be launched with the participation of school teachers and children to raise awareness on plantation and reforestation.

- Improved food storage

Losses of household food stocks during floods left prolonged negative impacts on food security. Improved food storage, particularly promotion of raised bed food go-downs can reduce food losses during disasters. Household training and awareness-raising in nutrition and other relevant areas through cash or food for work activities will improve practices and food security.

- Priority

This is a high priority sector, as the livelihood of the communities depends on it. If rehabilitation is not started immediately, there is risk of losing Rabi season crops and will push the communities further into economic depression. This will require extensive community efforts as well as external funding on urgent basis.

2.9 Non Farming Livelihood

Background: Key Challenges

Floods in July – August 2015 have damaged the non-farm livelihoods due to loss of assets, damage to infrastructure and disruption due to non-accessibility to market and loss of services. The Damage Needs Assessment (DNA), conducted by PDMA indicates the following situation on ground:

- Markets in the severely impacted areas are not functioning.
- A large number of the households surveyed have adequate resources to buy food.
- 44 shops were damaged
- 6 hotels were damaged particularly in Kalash valley
- 4 other buildings were damaged

The assessment of non-farm livelihoods was challenge due to the following reasons:

- Diversity in nature

The Non-Farm Livelihoods encompass a broad range of economic activities starting from formal businesses (shops and trading) down to home-based work, cottage industries and hospitality services sector. Therefore, it is hard to make a single strategy to recover the diverse nature of non-farm economic activities. A flexible strategy to accommodate the diversity of interventions is recommended.

- Lack of detailed data

The lack of precise data on the exact nature of non-farm livelihoods at District level restricts the exact assessment in terms of pre-flood livelihoods and employment situation.

- Lack of specific institution for Employment Promotion

There is no specific institution responsible for the promotion of non-farm livelihoods and employment opportunities in Chitral.

- Strategy

Job creation does not just happen as part of recovery and economic growth stemming from initial recovery efforts. Instead it has to be a clear and ever-present target that is part and parcel of short-term recovery efforts leading to longer term development.

Experience has demonstrated the effectiveness of employment-oriented strategies combined with local economic development recovery strategies for promoting a quick recovery from disasters. These strategies bring together employment-intensive reconstruction works, enterprise development, microfinance, skills development, social protection, capacity building of the government officials and social partners, such as representatives of employers and workers, CBOs and private sector.

The exact need for non-farm livelihoods support interventions would be derived from assessments,

including pre-program, gender and labor market assessments. These would require structured coordination amongst all stakeholders, building on comparative advantages.

This is a high priority sector as it links directly to livelihoods of the communities. The communities are already compromised and will require immediate attention to regain some economic strength. Attention should particularly be paid to hospitality industry in Kalash valley, where tourism is a major source of income.

3. RECOVERY NEEDS FRAMEWORK

3.1 Objective

The objective is to determine the extent of damage, effect on livelihoods and provide a framework for future development of affected sectors.

3.2 Approach

The Recovery Framework serves as a tool for planning, coordinating, and managing the recovery process. It provides both primarily an initial vision of the recovery and the future quality of life and life processes. It gives a snapshot to stakeholders, what they can plan in terms of realistic recovery in the disaster area. Based on the approach above, the Recovery Framework is designed in three phases as follows:

i. Early Recovery

Early recovery is immediate needs that arise at the onset of the disaster. These needs are partially met by government disaster agencies and development partners on the ground. However, there is still huge unmet needs in critical sectors i.e. agriculture (crops, livestock and irrigation channels) due to the lack of resources and capacities. In this, small scale projects/interventions such as community physical infrastructures (CPI), restoration of agricultural needs (including crops, shed, stock replenishment and irrigation channels) can be planned and executed. The sectoral analysis above reveals that the major damages incurred requires immediate restoration in order for communities to restore means of livelihood in this phase.

ii. Recovery

The recovery phase should concentrate on rebuilding medium scale public sector infrastructure and community rehabilitation projects. The public sector owned drinking water supply schemes, are included in medium term goals of the recovery framework. It includes restoration of medium size

projects such as water supply schemes, schools, supporting local communities to rebuild their economies through livelihood and income generation initiatives. Farming, small shop-keepers and local tourism/hospitality related activities may be prioritized while designing the projects.

iii. Reconstruction

This phase includes projects with long term development and change objectives. The large scale public sector infrastructure including roads, bridges, drinking water supply schemes and power houses. DRR mechanisms including CBDRM, CCA, deforestation & grazing controls and long term environmental policy frameworks may also be introduced in this phase.

This "Build Back Safer" recovery framework is initially for a period of 24 months starting immediately. The time frame can be reviewed and revised, based upon the progress made and with the consent of key stakeholders.

3.3 Guiding Principles

This framework should be complimented with a number of basic guiding principles which forms the basis for recovery plans, programs, projects, activities and modes of implementation. These are adapted from UNDP Pakistan Floods 2014: Recovery Needs Assessment and Action Framework 2014-16:

I. Address the Needs of the Most Vulnerable and Socially Disadvantaged Groups

Natural disasters affect the poor, disabled, women and women-headed households, children and orphans disproportionately and increase their vulnerability. Priority is given to the specific needs of these populations and to ensure that there will be no restriction on assistance based on gender, ethnicity, religion, age, social status, disability, etc.

II. Develop and Restore Capacities

The recovery strategy will ensure that local capacities for preventing and responding to disasters are strengthened. The government will encourage communities and local authorities in the worst affected areas to revisit their existing disaster risk management plans to integrate lessons learned from the latest disaster. The Government will also adopt a policy requiring all actors engaging in recovery efforts to make optimal use of local building materials and to employ local people.

III. Secure Human Development Gains

Recurrent crises in Chitral have the potential to push them into a downward spiral, where losses contribute to a steady and increasing erosion of already limited development gains. By implementing the recovery strategy, the Government of KPK will focus on a policy of "building back better" to ensure that the challenges to human development and poverty reduction are not further exacerbated by recurrent natural disasters. To further secure future development gains, affected populations will be encouraged to acquire new skills with a view to diversifying their livelihoods to decrease the risk to local economies.

IV. Reduce Crisis Risk

A core principle in recovery is to avoid creating new risks. For example, where villages or parts of villages have been destroyed, proper risk analysis should be conducted and communities facing acute risks should be encouraged to relocate to safer locations.

V. Promote Independence and Self-sufficiency/Community Participation

Further elaboration of the recovery strategy will draw on input provided by local and district consultation meetings. Local officials will be encouraged to work with communities to build consensus around priorities, roles, responsibilities and resources as their input will be repeatedly sought during the strategy implementation period.

VI. Civil Society Participation

The Government seeks to draw upon the assistance and advantages offered by all sections of society, including academia, media and civil society organizations (CSOs), and will encourage the establishment of appropriate CSO-Government partnership mechanisms to assist in planning and implementing recovery and rehabilitation in affected areas.

VII. Establish Transparency and Accountability

The Government is making a special effort to ensure that targeted and affected populations are adequately informed of timeframes, entitlements, sources of technical help and avenues for articulating their concerns and grievances during the recovery period. Robust quality control mechanisms, such as the involvement of the Space and Upper Atmosphere Research Organization and the National Database and Registration Authority to verify the extent of damage and the lists of affected people, have been put in place. Databases have been established on the impacts of disasters, planned and ongoing recovery efforts, and independent entities appointed to provide third party validation (TPV). There is also close monitoring through conventional government machinery. The recovery strategy will build upon these mechanisms to promote transparency at all levels.

VIII. Localizing Support

Planning, implementing and monitoring recovery interventions will take place as close to the target populations as possible. The focus will be placed on building the capacities of the local institutional or social level, fostering partnerships and instilling a sense of ownership.

IX. Mainstream Gender Sensitivity

The Government will ensure that its early recovery strategy pays particular attention to the specific

needs of women. Women will be encouraged to participate in assessing, planning, implementing, monitoring and evaluating recovery.

3.4 Roles and Responsibilities

The vision of the recovery framework is to complement efforts of affected communities to restore their lives and livelihoods by providing targeted subsidies and technical advice to integrate resilience into restored livelihoods and infrastructure. The considerations are also a part of the Recovery Framework.

I. Governance Mechanism

Government will act as both the primary and principal provider of goods and services as well as a facilitator for non-governmental initiatives aimed at complementing Government efforts.

Most planning and implementation will take place at the district level. The provincial government, will primarily implement recovery initiatives above the sanctioned financial limit of the district, implement large inter-district infrastructure recovery projects, undertake overall monitoring and evaluation and TPV, and coordinate district and federal government efforts. The federal government will facilitate coordination among sub-national entities, interaction with international agencies and facilitation of inter-ministerial processes.

II. Information Management, Monitoring and Evaluation

Similarly, robust federal and provincial information management systems have been put in place. These systems will be used for coordination forums.

III. Mechanism for Steering the Strategic Direction

Assessment committees are set up by DC Chitral under the guidance of PDMA / PaRRSA to oversee the recovery needs assessment process and provide

strategic direction. These committees, expanded and enhanced, would continue to steer the implementation as well. Humanitarian and development agencies wishing to contribute to recovery efforts will also be represented in these forums.

The principal implementers and regulators of sector-specific activities will be the local or provincial line departments that have been mandated by their respective authorities. Suitable sector-specific coordination mechanisms will be jointly put in place by the funding agency in that sector and the respective line department. These sector-specific coordination forums will act as specialized sub-forums of the committees.

IV. Community Participation

Experience in Pakistan as well as elsewhere in the world clearly indicates that Recovery phase offers a most promising opportunity to promote a culture of resilience and to inculcate structural and non-structural risk reduction measures in the recovered infrastructure, livelihoods and communities. Similarly, the experience from Pakistan Earthquake of 2005 and subsequent disaster responses indicate that community participation is one of the key factors towards ensuring sustainability of the initiatives as well as ensuring local ownership and the resulting quality assurance and downwards accountability.

Government of Pakistan has had some globally acclaimed experiences in Owner Driven Recovery, especially in housing, and livelihoods sectors in the aftermath of disasters. These efforts were backed by equally renowned initiatives in peace-time participatory development in various parts of the country. The recovery framework treats community participation and reduction of risks from future disasters as fundamental guiding principles. With a view to translate these principles into practices, consultative mechanisms to involve the affected communities in planning and implementation of discreet schemes in all sectors. Appropriate safeguards and checklists will be promoted as

integral part of all the project planning, implementation and monitoring mechanisms to mainstream risk-reduction and resilience across the geographical and sectoral spectrum.

Additionally, targeted capacity building and mainstreaming initiatives would be put in place to foster a culture of resilience at all levels of development planning and governance, in the government departments, civil society organizations, academia, media and communities at large. The lessons learnt from the recent floods would be captured and documented to analyze the underlying and overt, structural and non-structural factors behind the hazard turning into a disaster and identify the related capacity gaps, to inform the programming for future.

V. Inclusion of Needs of Vulnerable Groups

The NDMA's and PDMA Policy Guidelines on Vulnerable Groups have Overarching Guidelines dealing with all groups. Relevant points related to recovery are as under:

- Promote participation of women, men, older persons and persons with disabilities in all phases of disasters, from disaster planning and preparedness to disaster response and recovery.
- System of relief and recovery needs should ensure inclusion of vulnerable groups – women (especially widows) children (especially Child Headed HHs), older persons and persons with disabilities.
- Utilize community knowledge, skills and local networks (such as Girl Guides, Boy Scouts and LHWS) and strengthen local leadership for DRR and DRM.
- Community based DRR should include Child Protection in Emergency (CPIE), gender and disability components.
- The social protection measures of Government of Pakistan, such as BISP, Watan Cards, and land allocation for the landless rural population should be made accessible to the disaster affected within

vulnerable groups to facilitate their socio-economic recovery.

Based on the assessment of damages, needs on the ground and Government priorities the recovery framework phases have been carefully indicated in the estimate matrix. An initial estimate matrix of the funding required by phase is included in Chapter 4 below.

3.5 Risks and Assumptions

Recovery and rehabilitation is immediate but contexts and environments are many.

- The majority of community will attempt to bring life back to normalcy early, but the variety of materials and the variety of damage to sites and water resources will lead to varied incremental rebuilding strategies. Recovery assistance will be confronted with continued social mobility, dispersal, multi-hazard environments, disrupted local markets and depletion of local natural resources.
- In this volatile environment, people still start rebuilding and repairing and use their own 'transitional' means. The widespread use of salvage material and the fact that in many locations in both regions not all building materials were washed away are a further impetus to frantic but low-quality building activity.

Advocating assistance to extremely vulnerable needs to be continuous.

- During early recovery, there is least access to skilled labour and need to buy materials in the open market, which cannot be achieved.
- A technical assistance programme that delivers training to semi-skilled artisans can do on-the-job training for schools of most vulnerable areas, who can by no means even contribute their own labour.

4. RECOVERY FUNDING REQUIREMENT

4.1 Sectoral Requirements

The damages due to floods are huge in terms of loss of life and livelihoods, as well as infrastructure damages on ground. The Government, within its resources responded to meet the initial rescue, relief and restoration operations. Still the unmet funding needs are substantial for the recovery and reconstruction efforts. The damages assessed (Chapter 2) according to Recovery Framework (Chapter 3) is classified in three phases as follows:

- a. Early Recovery
- b. Recovery
- c. Reconstruction

All three phases can and should run simultaneously in order to achieve full impact.

Accordingly, the table below represents the funding requirements by sector to complete all three phases.

Sectors	Sub Sector	Early Recovery	Recovery	Reconstruction	Total
Education			177,000,000		177,000,000
Housing			129,920,000		129,920,000
Transport	Roads			3,036,000,000	3,036,000,000
	Bridges			1,253,260,000	1,253,260,000
WASH	Water Supply Schemes		331,760,000		331,760,000
	Health				-
Energy	Other Power Houses		300,000,000		300,000,000
	Reshun Power House			1,000,000,000	1,000,000,000
Agriculture	Agriculture	350,380,000			350,380,000
	Livestock	49,611,850			49,611,850
	Irrigation	1,447,600,000			1,447,600,000
Non-Farming Livelihoods					-
Total		1,847,591,850	938,680,000	5,289,260,000	8,075,531,850
Percentage Share in Total Estimates		23%	12%	65%	100%

Table 5: Snapshot of Funding Required for Recovery (Source: Data Analysis of Various Sectors)

4.2 Sectoral Share in the Estimated Funding Requirement

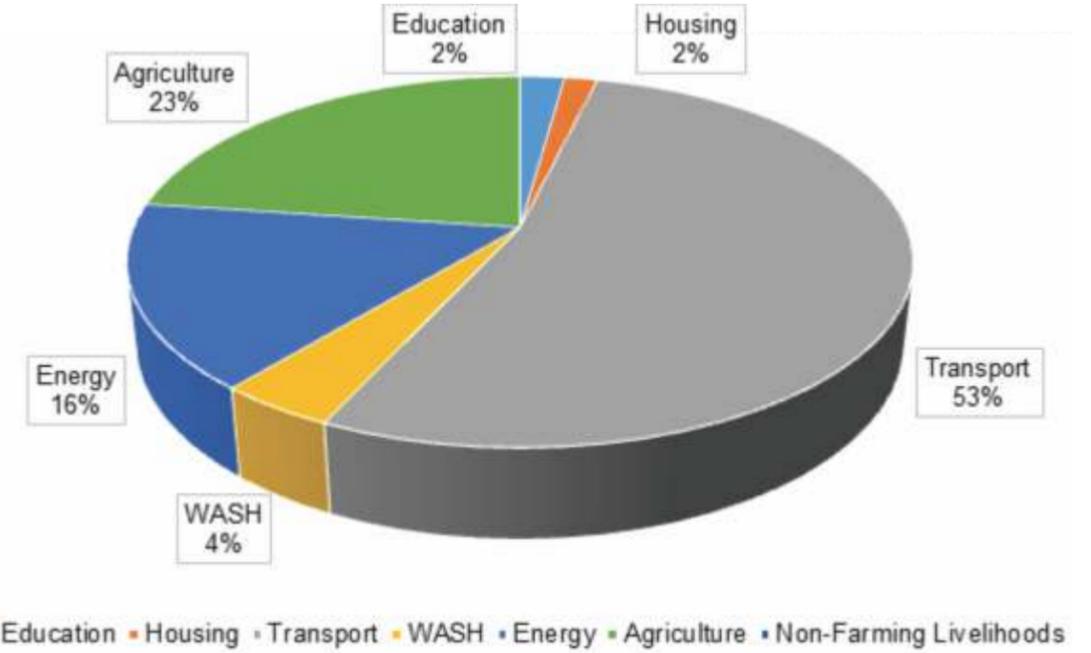


Figure 20: Graphic Representation of Funding Required by Sector

The graph above represents the required funding by sectors. This is over and above the funding already provided by PDMA-PaRRSA. This gap is identified by

the Recovery Needs Framework and Government is soliciting funding for it.

5. RECOMMENDATIONS

The vulnerability assessment of Chitral indicates that it is prone to different magnitude of disasters from earthquakes to flash floods to GLOF. The history of disasters in the area points that communities will remain under the threat of disasters in one form or other. The 2015 Chitral floods provide everyone an opportunity to “build back safer” by:

- a) Reducing risks and building resilience
- b) Enhancing preparedness for future disasters

The “build back safer” strategy aims at providing support, recovery and long-term development, to maintain and restore sustainable livelihoods. It also supports the transition from humanitarian relief to recovery and development. The following recommendations are framed on five key principles of aid effectiveness (ownership, alignment, harmonization, results and mutual accountability)³:

1. Trust should be built between the Federal/Provincial Government, local authorities and local communities.
2. Institutionalize the community and the private sectors by creating effective Public Private Partnerships, resulting in more sustainable disaster management programs.

3. A coordination committee should be formed under the leadership of Office of Deputy Commissioner to plan, implement and monitor rebuild and reconstruction activities. Ideally all development partners should be a part of this committee.
4. Community Based Disaster Management should be implemented for empowerment and communication to achieve sustainability.
5. Re-organization and training of the Civil Defense Volunteers on DRR / DRM.
6. Re-engineer / plan public infrastructure for maximum resilience
7. Effective “Managing for Results” strategy in place, including monitoring frameworks and accountability of actors
8. Comprehensive policy is to be formed for re-plantation of forests and control of grazing lands to reduce disasters.

The plan is focused on rebuilding the public infrastructure damages, however it should also consider including early recovery mechanisms to improve or restore livelihoods and community physical infrastructure. The early recovery efforts should include UN System, Donors, Other Development Partners and Community at large.

3. Paris Declaration 2005, followed by Accra Agenda for Action which sought to strengthen Paris Declaration.