This report acknowledges that the war-affected areas of Pakistan, especially KP and FATA, require immediate research and policy attention; indeed, the disaster-conflict interface is one of serious issues UNDP Pakistan has addressed so far.[93]

Of the five districts for the CBDRM implementation, especially Lower Dir has been seriously affected by the War in North-West Pakistan that has caused over 60000 fatalities of civilians, security force personnel and terrorists over the country from 2003 to 2016.[94] The direct and indirect cost of the war on the entire Pakistani economy is estimated to amount about 68 billion USD from 2001 to 2011.[95] To tract how the overt warfare and its consequences have altered the nature of disaster vulnerabilities and resilience at local level is not simple; and beyond the scope of this report. This is not least because of the non-measurable factors and their complex relations that have either changed the patterns of exposure of the communities to hazards (mostly through temporary and permanent displacement) or restrict the building of adaptive capacity through the downturn in tourism, manufacturing (e.g. decreasing foreign investment) and other industries. This has been mostly the case in Lower Dir. Consequently, it is intuitive to think that unemployment, increased transaction cost and low trust as well as radicalisation among youth might have in turn restricted the scope of learning opportunities for DRR at local levels. Most importantly, the violence has had seriously constricted the public sphere in which political and social ideas can be freely expressed; remember that public gathering has been the major target of terrorist attacks over the years.[96] In Pakistan, building a vigorous public space seems to be a first step for resilience building.

That said, this report does not attempt to make a direct link between the warfare and local disaster resilience of the project communities; but, the insidious, yet deep impacts on public life of Pakistan are acknowledged. Instead, this report limits itself

[93]See http://www.pk.undp.org/content/pakistan/en/home/presscenter/articles/2016/02/25/undp-pakistan-integrated-approach-to-peacebuilding-and-disaster-.html
[94]See http://www.satp.org/satporgtp/countries/pakistan/database/casualties.htm
[95]See http://www.finance.gov.pk/survey/chapter_11/Special%20Section_1.pdf
[96]Mustafa, D., & Brown, K. E. (2010). The Taliban, public space, and terror in Pakistan. Eurasian Geography and Economics, 51(4), 496-512.

to dealing with village level dispute and local political dynamics that shape the scope of collective learning for resilience building (see below). [97]

4.2. UNDP's CBDRM implementation: preparedness and beyond

Encouraging collective learning on DRR requires communities' active involvement in the entire process of the initiatives. As noted in the methodology section, four major resilience indicators were set up to examine the potential paths from resilience building to risk-informed development. This section focuses on analysing the local voices and experience of the project communities to show how individual and collective learning was achieved and their implications for resilience building to be transformed into risk-informed development.

The subsections 4.2.1 and 4.2.2 present individual and collective learning on disaster preparedness, response and risk-informed development. After that, an integrated analysis of the cases will follow in order to define the extent to which the UNDP's CBDRM initiatives triggered local change in the at-risk communities.

[97] Probably by coincidence, it was Lower Dir, along with Ziarat, in which CBDRM implementation clearly disclosed the deeper dynamics of local politics and source of conflict. The formation of COs – which can be seen as political practice at the lowest level – often got delayed due to the friction among local rival factions and political parties who pursued their own political gains. Even the Jirga system was reported to be unable to prevent the friction from delaying the CBDRM process. This was also probably because the size of the project villages is much bigger than that of other villages in other districts; thus, bigger social space for contrasting interests and ideas to bring about conflict. This is an important issue for future research.

4.2.1. Disaster preparedness and response

4.2.1.1. Formation and operation of disaster response system at local level

VDMC – from concept to practice (Singoor village, Chitral)

The CBDRM project introduced the target villages the concept of Village Disaster Management Committee (VDMC) as part of a Community Organisation (CO). While the concept was fairly new to the target villages in Chitral, COs have already fully or partially remained operational. This is so because the villages have already had past experience of working together with other NGOs and development agencies on various development issues.

The last July floods put into question the extent to which the newly introduced concept of DRR had been put into practice in terms of different phases of a collective response to disasters (from evacuation to recovery). While the DDMO was not fully operational in Chitral, the villages showed a great deal of self-reliance resisting and responding to the devastating impacts of the floods in 2015. Exemplifying the case of informal structures and voluntary activities replacing the role of the state in DRR, the CBDRM project found out the compelling need of rebuilding a public-private partnership and DRR mainstreaming to every aspect of sustainable development, which are almost absent in the society.

VDMC as a platform to sustain CBDRM learning (Irfan Elahi, 28, VDMC Chairman, Chitral)

The role of disasters in triggering social change is one of the emerging academic and policy issues. For instance, an in-depth understanding of the relationship between disasters and societal change will greatly inform policy and practices of CCA. It is often the case that disasters occur to arouse public attention to the need of investment in DRM and DRR; but the attention is often ephemeral. In fact, the UNDP's CBDRM initiatives focused on enabling CBDRM to take on (or reinforcing) the triggering role of disasters to alert the public to the importance of DRR and its links to other themes and practices in a long run.[98]

The case of village Danin's VDMC which voluntarily revived to respond to the floods in July, 2015 partly accounts for how CBDRM can help local communities to reflect on the relationship between disasters and societal change. Irfan Elahi, a VDMC Chairman of Village Danin explains how the VDMC served as a discursive platform in which the local people regained what they learnt from CBDRM training.

"I had an opportunity to attend a five-day training session funded by UNDP on disaster management last year…but it was not easy to brush up and maintain what we learnt from the training, including risk perception and collective response to disasters until the 2015 floods hit northern Pakistan. The floods generated an opportunity for our VDMC to put into practice our learning. If we had not had an organisation like VDMC, our response to the floods would have been less organized and collective...VDMC members fully engaged in relief and rehabilitation activities as volunteers in the respective areas and engaged in the rehabilitation work of the irrigation channels". (‡ HF)

The establishment of a VDMC and a CO is not an ultimate goal of the CBDRM project. Rather, the new social structures are expected to serve a platform in which at-risk

[98]Park, H (2015) *Community Based Disaster Risk Management (CBDRM): Towards Risk-informed Development*, DRR in Pakistan, CPRU, UNDP Pakistan, Islamabad.

communities translate their conceptual learning into concreate action in a collective manner. To sustain the impact of CBDRM as a social learning is neither easy nor always possible given the non-trivial commitment to other activities and events. Nonetheless, it will be increasingly important for DRR practitioners and policy makers to track the process of how CBDRM learning and local institutional arrangements coevolve to respond to disasters.

4.2.1.2. Community volunteerism and traditional values

Community work and youth's roles amid altering social structures (Sajjad Ahmed, 47 year old male, resident of Village Jughoor, UC chairman, Chitral)

"In the past we had a much stronger culture of communal work, for example, people volunteered in maintenance of roads, recovery of drinking water supplies and irrigation channels after disasters. This used to be a usual expectation people had of each other. Over the past twenty years, however, this culture has nearly diminished in our community." (‡ Naeem Iqbal, UNDP)

Accounting for the changing culture of communal work (embedded in norms and culture), however, he finds an emerging group of young VDMC members for CBDRM as alternative, if not replacement, to the past counterpart.

"Their efforts and enthusiasm also attracted other villagers to take part in communal works, and I think CBDRM has encouraged young people to reinforce their identity of place as well as confidence in their own potential to bring about change." (‡ Naeem Iqbal, UNDP)

Indeed, this comment proved relevant when the floods hit northern Pakistan in July to August, 2015.

"When the recent floods hit our village, the small group of young VDMC members, after consultation with the elderly, came to me to seek my support. I was so happy to see their voluntary efforts, and supported them with provision of equipment. I also encouraged other people to join their work to restore the damaged irrigation channel…this example shows that old and emerging groups and norms can have a synergy of knowledge/experience and energy/strength to respond to disasters."

4.2.2. Beyond preparedness: CBDRM as a trigger of change

4.2.2.1. CBDRM and renegotiation of local priorities

Learning about negotiating local priority needs (Kanji, CO president, Dhorio, Tharparkar)

Mr. Kanji has been recently elected as president of CO Dhorio, Mithi. In 2014, he took a CBDRM training on firefighting, but soon after his village realized that firefighting is but one of severe hazards facing his community members. Following from a series of local dialogues and communication with partners (the IP and UNDP), the village members recognized the immediate need of redirecting the project focus to address the long-lasting impacts of drought: water shortage and malnutrition. When it came to the phase of identifying local priorities on DRR schemes, he stresses, *"It was not straightforward to prioritise different schemes since people expressed different needs and ideas, most of which were equally legitimate and urgent…We did our best to have the differing ideas to be discussed in a fair manner. Not 100 per cent of our community people agreed on the scheme of a solar submergible pump, but the majority knew that it would save a lot of time and energy for us to fetch water from dug wells…we are learning about prioritizing and dealing with our differential needs."* (± the Author) This case also presents much of how to create a synergy among different objectives such as mitigation of climate change, coping with drought impact and water shortage and livelihood management.

Changing priorities on DRR (Ghulam Muhayuddin, 75, male, village Goldoor, Chitral)

"The intensity and frequency of the consecutive heavy rainfalls that led to the flash floods in Chitral in july to August, 2015 were exceptional", recalls Mr. Muhayuddin. He adds that *"since my childhood, I have witnessed many flash floods in most of the villages in Chitral. Floods are not new to many of our villages here. Over the last ten years or so, however, the situation has changed altogether. I have never seen this frequent and intensive rainfall in my life."* (‡ HF)

In addition to this changing perception of environmental hazard, it is increasingly evident that other socio-ecological factors and processes have driven many people in Chitral to choose to live in hazardous places.

"Given the increased level of exposure to environmental hazards, *UNDP's CBDRM initiatives are timely and magnificent. Most of all, we don't feel left behind or alone anymore and we want to learn more about how to make our village safer. We are now more curious about ex ante DRR measures than ex post emergency responses because we keep losing everything we have built our entire life."* (‡ HF)

Safety versus competing priorities(Naseem Akhtar, 45 year old female, CBDRM volunteer, Chitral)

"When a group of people were collecting logs floating down the swollen river, I was on my way to work at around 12:00 pm on 23, July 2015. To collect floating logs is ordinary practice of our village people during flood seasons as they can be used for the purpose of construction, and cooking and heating during winter seasons." (‡ HF)

Thus, it is crucial part of the local adaptive mechanism through which to routinely cope with their vulnerability to the impacts of different hazards such as severe cold. Yet, Naseem adds that

"It kills people every year. During the CBDRM project, we learnt about important roles individuals can play when perceiving potential risk. I immediately talked to the people about the risk facing them. Of course, not all of them wholly listened to me, but some people then tried to keep a distance from the river." (‡ HF)

It is not straightforward to conclude if this act is a direct result of the CBDRM initiative, but worth reflecting on how local priority needs on vulnerability reduction might be renegotiated as a result of CBDRM. UNDP's CBDRM initiative focuses on bringing about ideational change at individual and collective level. The scope and extent of the intended change will be examined in more detail when the CBDRM initiatives are scaled up across the country.

4.2.2.2. Community organisation as a platform for *collective* innovation

Collective learning (Sabria, female, Zafar Ali Khoso, UC Band Manik, Zaffarabad)

CBDRM training often ends up to be a one-off event without giving birth to any further lasting impact. UNDP's approach to CBDRM focuses on bringing about individual and collective change in ideas and behaviors. Sabria from Zafar Ali Khoso village tells a bit of how CBDRM training influenced her point of view to take proactive action for DRR more seriously. *"As vice-president of the CO, I have enjoyed many activities of CBDRM since last year. Most importantly, other women and I have enjoyed supporting each other in the development of small DRR measures. After the CBDRM training I joined last year, I have decided to make small space in my house on which I can store valuable things such as important documents. In the past, floods occurred to inundate our houses and we lost many valuable things." (‡ SMMAJ)*

Culture of mutual support and trust is widely found over Pakistani communities, and UNDP believes that this is where social learning for DRR can be reinforced to make at-risk communities more resilient and prepared for future disasters. On top of that, many other small schemes have been implemented by the local people themselves based on their collective learning from the CBDRM initiative.

Collective learning (Zafar Ali Khoso, UC Band Manik, Zaffarabad): the risk scheme as public sphere

The partner communities of the CBDRM initiative have identified up to five risk mitigation schemes, among which UNDP has financially and technically supported implementation of one or two schemes, subject to the funding availability.

Village Zafar Ali Khoso in Jafferabad had finally selected two schemes: a raised platform that can be used as a shelter in the case of floods; and a small reservoir to store drinking water.[99] In fact, implementation of the two schemes was synergetic in that the building materials (mud and sand) used for the raised platform came from the construction site of the reservoir. Of importance is that the CO raised an additional fund by themselves for other schemes such as a small reservoir for watering livestock and reconstruction of a small bridge in the village.

The key message of this case is that financial and technical support to construction of structural schemes can enhance the project sustainability when it brings about further ideational and material change.

It is also worth noting that the raised platform has been used as a public sphere for different ordinary life purposes such as wedding and funeral ceremonies; the public place is also open to the neighbouring villages. A risk mitigation scheme does not need to correspond exclusively to the purpose of DRR/DRM only. This case showing the potential of CBDRM initiatives to reclaim the public sphere of not only DRR but also ordinary life has much to offer the conflict-affected areas in KP. (‡ Komal Raja, UNDP)

[99] The issue of water quality arose so as to require follow-up measures such as use of a traditional water filter. In fact, some households of the local community have already benefitted from other NGOs' work on water project: e.g. *Nadi* filter, a traditional way of filtering water – *Nadi* is a clay pot, a main component of the filter that has been used in many countries for centuries.

Collective use of DRM kit (Ijaz Ahmad Badshah, male, village Hakeem Abad, Lower Dir)

Throughout the pilot phase of CBDRM, every CBDRM target village was given a DRM kit that can be used for DRM. At issue is how far the local people attain proficiency in collective use of the DRM kit. In some cases, it is found to have been just kept in a storage without proper and regular use. Ijaz Ahmad recalls, *"This year, heavy rainfall completely destroyed my house including two rooms, veranda and a kitchen. I was so worried and upset, and the damage was so severe that I could not cope with the situation on my own. I immediately contacted Mr. Ali Akbar Badshah [member of the VDMC] for help. He and other members of the VDMC rushed to my house to assist my family in the clean-up of the debris and reconstruction of my house later. It was the first time for our village to use the DRM kit since we worked together with UNDP. Without timely support of the trained members of the VDMC, our family would have gone through much tougher time this year. I think this CBDRM opportunity as a turning point of our community to reinforce the logic of mutual support and participatory approach to disaster risk management." (‡ IRM)*

CO-led damage assessment of the 2015 October earthquake (Mr. Anwar Hasan, Malakand Bala village, Lower Dir)

Collective conceptual and practical learning about DRR can benefit an at-risk community in many different ways. Mr. Anwar Hasan, a CO member of Malakand Bala village recalls how his village's involvement in the first and second phases of the CBDRM initiative proved valuable when the 2015 October earthquake hit the village. He recalls that "the last earthquake damaged houses and buildings of our village, many of which were totally destroyed. First, we were very worried about the damages without making any follow-up plans for recovery and reconstruction. But then we had a CO meeting to discuss the situation. It was constructive that we decided to conduct a detail assessment of the earthquake damages on our own…Thanks to my active involvement in the first and second phases of the CBDRM project, I took upon to the entire process of assessing the damages and losses. Together with other CO members, we carried out a detail survey of the affected area. We shared the assessment result with the district government administration, district Nazim, DDMA and local political leaders. Now some reconstruction and rehabilitation work based on the assessment are in progress." *(‡ IRM)*

From individual to collective learning Imtiaz Ahmed, VDMC chairman, Mughlandeh, Chitral)

It is important to encourage individuals' conceptual learning on DRR. The UNDP's CBDRM project has also encouraged community members' conceptual and practical learning about DRR and DRM. More importantly, however, learning of individuals should be channeled through collective action and practices if CBDRM is to see greater effects on disaster preparedness; the importance of social learning comes to the fore. Imtiaz Ahmed, chairman of VDMC Mughlandeh explains his own experience of expanding an individual's idea into collective action.

"I participated in the CBDRM training last year, and since then I have been analyzing my village's disaster susceptibility. The training profoundly changed my views and thoughts about disaster and its preparedness…Heavy rainfall along with lightning struck the mountains over Mughlandeh on the eve of 16th July, 2015. Even through the weather was serene by then I was continuously paying attention to the weather forecast of torrential downpours. As many people of our village were still unaware of the forecast, I called some VDMC members to discuss what to do next. We decided to inform the community about the tense situation. We used loudspeakers installed in the village mosque. We aimed to inform every household of the situation. Immediately after rainfall started, we decided to evacuate to safer places looking after the elderly and children. No one was hurt or dead. Even though some houses were destroyed, I believe that our early warning helped to prevent unnecessary loss of lives", recalls Imtiaz. (± HF)

Imparting skills and knowledge to communities should take into consideration the importance of how learning at individual level can transform into collective learning in practice.

4.2.2.3. Social cohesion and youth engagement

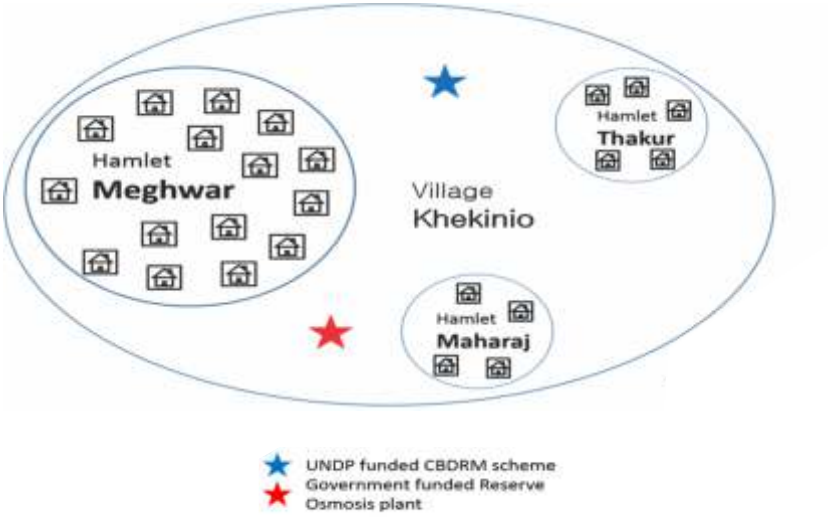
CO as a public sphere for resolving conflict (CO Khekinio, Tharparkar)

It is often the case in Sindh Province that a village consists of different groups, defined by religious (Muslim and Hinduism) and geographical differences. In this situation, dissensus is neither an abnormal nor unpredictable issue.[100] Yet, considerable is that even after the selection of a mitigation scheme, a construction site for the identified structural mitigation scheme could not easily be positioned as it largely influences wellbeing of the already marginalised local people.[101] Resource is not always sufficient to meet every single demand. At issue is how such conflict can collectively be dealt with by the local people themselves. For this reason, one of the targets of UNDP's CBDRM work has been to either create or reinforce Community Organisations (COs) in each village. COs serve as a public sphere in which different ideas can be shared, clashed, mediated, and finally transformed into a concrete decision and practice.

[100] In fact, conflict of different extents and kinds was assumed to emerge since the beginning of the project.

[101] The target villages were required to identify potential mitigation schemes up to four in the first phase of CBDRM. Since UNDP financially supports only one scheme in the second phase, it became a common practice that different groups with conflicting interests have to collectively decide which scheme should be selected in which location.

Map of villages Khekino: Positioning a risk mitigation scheme



Khekino village is among many other villages that underwent such a conflict situation. The key to solving the conflict was to have open dialogues between different members of the CO. Most of all, the notion of fairness was valued together with majority rule in positioning the risk mitigation scheme as can be seen in the above map. The government funded reserve osmosis plant was already built in between Meghwar and Maharaj in 2015 so that the groups decided to locate the new scheme between Meghwar and Thakur. This is not to argue that the decision itself was without a problem. Rather, it is crucial to pinpoint the critical role the CO played to resolve the conflict issue. This was a fairly new practice to the community. (‡ the author)

From victim to active participant of CBDRM (Mohammad Sulaman, 50 years old, Warchoom, Ziarat)

Differing factors motivate individuals and groups to take on a voluntary duty for community work such as CBDRM. For Sulaman, it seems a bit rare motivation that made him actively involved in the CBDRM process of village Warchoom, Ziarat: loss of his wife and two daughters from the 2008 earthquake. He has also been nominated as a holder of the community bank account that is used for implementation of the UNDP funded risk mitigation scheme.[102] This is not to say that being victimized is a precondition of active involvement in DRM work. Rather, it is of profound importance to see how victims can be embraced by the community in a way that overcomes the collective memory of loss and damage from disasters.

Indeed, disasters triggered by natural hazards over the last ten years have claimed over 80,000 casualties in Pakistan. This figure, however, does not justice to the complex picture of the losses and damages. For one thing, psychological impact on those left behind – considerably much more than the casualties themselves – are often invisible and less addressed. As the case of Sulaman shows, however, it can be dealt with in the existing social settings in which traditional values, reciprocity, and trust are intertwined to encourage inclusiveness of CBDRM work. UNDP's CBDRM initiative has focused on the intangible impact of disasters on the target communities. (∓ SMMAJ)

[102]UNDP has remitted the fund for a risk mitigation scheme directly to each target community. This is to enhance the communities' ownership as well as sustainability of the project impact.

CBDRM as an opportunity to make local consensus (Ubaidullah, 27 year old CO president, Kan bangla, Ziarat)

One of learning opportunities the project community can gain comes when they have to make consensus about the risk mitigation scheme – which is also essential for a variety of development challenges to be collectively addressed at community level. Different reasons for conflict – from constructive criticism to mere jealousy should essentially be overcome if any target community is to make progress towards making their village resilient.

In Kan Bangla village the CO decided their first priority need on DRR to be flood protection walls. After a few days, one of the CO members named Meerullah Jan raised an issue about the CO's decision. He claimed that he will not allow the work in the village. He said that the design and sites of the risk mitigation scheme are not relevant. He further threatened the other CO members that he would approach other stakeholders to scuttle the scheme. But, Ubaidullah with other CO members did not react to the threat in a way to bring about violence – physical violence seems to have often occurred in the past as a result of conflict and dissensus.

Ubaidullah says that "I informed the SMAAJ officials and community people about the conflict situation developed by Meharullah. Then the SMAAJ officials and I called for a meeting in which all the CO members were invited including Meharullah Jan. We discussed the issue in detail and finally Meharullah Jan admitted that he was misguided by some other community members who wanted this protection schemes for their community. After hours of discussion, we finally agreed to proceed our initial plan for the risk mitigation scheme." (∓ SMMAJ)

Self-efficacy with rebuilt identity of place and trust (Muhammad Anwar, 23 years old, CO member, Ziarat)

Building trust among CBDRM stakeholders is extremely important for transforming individual learnings into collective innovation. As ongoing humanitarian crises (earthquake, floods, and drought) have recently drawn many NGOs' and researchers' attention to the dilapidated area, the local people in Baluchistan have been increasingly often exposed to humanitarian NGOs and academic researchers who sought their room for empirical intervention and academic achievement. Yet, Muhammad Anwar explains why this increasing interest has been rather disappointing to the local people that:

"My name is Muhammad Anwar and 23 years old. I am married and have one son, we are very poor. I work in the orchard field for my livelihood. I also have some livestock like lambs and goat…Actually we were not 100% convinced of usefulness of this CBDRM project as many, if not every, NGOs previously visited our village to take photos and interview us without any following activities that they promised would come about. A few organisations actually helped us, but they just distributed goods and aids through a few selected people of our village. We never had any single chance for all of us together to plan, think, discuss, negotiate, and learn about how to deal with our own problems like disasters. We learnt that working together has greater impact than working individually. Due to this experience, I also realized the importance of education ever than before. I want to send my children to school. We have recorded every single activity, decision we made, plan for construction of our risk mitigation scheme in our meeting minutes, and I want my son to read it later when he grows up. Then we will be able to solve our own problems better." (‡ the author)

He goes further to explain one more effect of their collective learning in terms of women's expression of their needs on DRR.

"It is also important to mention that women expressed their needs more actively, even pushfully, after they sat together for female CO discussion. We [men] already knew some

of the expressed issues, but didn't know their seriousness and urgency to be that much." (‡ the author)

It remains to be seen how far these learnings will last with what particular impacts over the community. Of importance is that the local people have started to see the issue of disaster from a different angle.

4.2.2.4. Livelihood opportunity and poverty eradication

Floods for soil fertility? (Altaf khan, Kotkey shahi khel, Lower Dir)

Perception of natural hazards such as floods have long remained partial to exaggerate their negative and destructive roles only. Yet, floods also serve some positive functions for humans. For example, gentle floods can help increase soil fertility.[103] Given the changing climate that is projected to increase the intensity and frequency of natural hazards, however, it is worth noting local farmers' recent experience of floods in Kotkey shahi khel a small settlement of 138 households in Lower Dir.

"We have recently lost acres of our fertile lands, local shops and many critical infrastructures such as roads that are already poor and in dire need of improvement. Our lands used to be very beautiful thanks to the orchids that I still remember people would stop by to buy fruits. We also grow many different types of crop due to the fertile lands, but I don't think the recent floods have brought more fertility to our lands. If you look at the increasingly poor quality of apple and other crops we recently yielded, you cannot say that." (‡ IRM)

Of course, it is not fair to attribute poorer soil fertility to the recent floods only. A thorough scientific examination is required to understand causal relations among many other factors that brought about the poorer soil fertility. Nonetheless, it is critical to take seriously such farmers' empirical claim, with which traditional and scientific knowledge can be crosschecked. This is a good practice of taking CBDRM as

[103]Fresco, Louise O., and Salomon B. Kroonenberg. "Time and spatial scales in ecological sustainability." *Land use policy* 9.3 (1992): 155-168.

a starting point of sustainable risk-informed development.

In the second phase of CBDRM, the village decided to build flood protection walls. It remains to be seen how far such a scheme might help protect soil fertility of their lands and other means of production. Importantly, the UNDP's second phase CBDRM has started to reflect on how to make concrete linkages between local and scientific knowledge to bring about a synergy effect.

Reflecting on resilience of livelihood against drought impact (250 households, Vessasar village, Mithi, Tharparkar)

Vessasar village is one of the six target villages of the CBDRM project in Tharparkar. Located in the desert area, the community has gone through a challenging time of three consecutive years' drought. Most importantly, the community members have expressed concern over loss of livestock due to the long-lasting drought. In fact, the susceptibility of livestock to drought impact has been substantial since the past and it is the almost only means to buffer drought impact.

Many cases of massive loss of livestock have been reported in the past: 40 per cent of the whole livestock in 1983, 50 percent in 1987, 25 per cent in 1997, 25 per cent in 2002, 25 per cent in 2003, 5 per cent in 2006, 25 per cent in 2009, and over 50 per cent in 2011 to 2014. Coupled with the drought impact, one of the challenges for the local people to save their livestock is their limited access to a veterinary centre. Often, they need to bring their livestock to the city centre of Mihti that highly costs to the already marginalised local people. Accordingly, Vessasar village has chosen a veterinary centre as their mitigation scheme for the CBDRM project. This scheme directly responds to identified gaps of government in supporting livestock management in the desert. [104] (± RWF)

[104] Interview with the department of livestock, district Thatparkar, 30 October, 2015, and also see District Tharparkar (2015) Brief: Livestock/Animal Husbandry, District Tharparkar, 30/06/2015.

Livestock as means of coping with drought risk (Sukhan, 30 year old, housewife, Village S hiv Jo Tarr, Tharparkar)

For a semi-nomad living in a desert, good health and sufficient fluid intake of livestock can directly impact on wellbeing of their life. Combined with poor hygiene, malnutrition, lack of education and infrastructure, the challenge of watering livestock has added to the already heavy burden of the Thark nomad, particularly for women and children. Three consecutive years' drought means much greater suffering for those including Sukhan, mother of five children living in Shiv Jo Tarr village. Before the installation of Solar Submersible pump – a CBDRM risk mitigation scheme, it was Sukhan and her children's duty to fetch water from the 200 feet deep dug-well. She emphasizes "*I have three daughters and two sons to take care of and along with them our livestock is also like a family because survival of our livestock is almost as important as our family's. But then watering the livestock needs a lot of energy and time that would otherwise be spent on other important work.*" (±RWF)

Veterinary Centre – Filling gaps of public service (Lekhu, Vesasar village, Mithi, Tharparkar)

Vesasar village has chosen a veterinary center as their priority risk mitigation scheme under the UNDP's CBDRM initiative. Most of all, the villagers rely on livestock for their livelihood, many of which are directly exposed to combined impacts of drought, disease and malnutrition. Department of livestock of Tharparkar district estimates the total number of livestock in Mithi tehsil to be more than 1.2 million that accounts for one fifth of those in Tharparkar district.[105] While Tharparkar district has established short to long term strategies for livestock management, based on human development and increased veterinary services, the target area has been largely excluded from the initiatives. UNDP found this an invaluable opportunity to fill in gaps of public service in responding to local vulnerability to the impacts of drought and livestock disease. It is also important to point out that the district government has already capacitated a veterinary assistant to reside in the village to make full use of the veterinary center.

[105] The current ratio of men to livestock is one to five, which is equivalent to that of New Zealand. Yet, the continuing drought condition and lack of response capacity (resources and facilities) is deteriorating the already extreme vulnerability of the livestock in Tharparkar to various threats. See Brief: Livestock/Animal Husbandry, District Tharparkar, 30/06/2015.

Mr. Lekhu appeals that "*a large number of livestock have recently died due to no access to proper medical care and drinking water. This scheme was our priority because our livestock is the only source of livelihood for our survival in the time of drought.*" Before the veterinary center was built in the village, the local people had faced numerous problems for treatment of their diseased livestock. The government veterinary center is far away from the village. He added that "*The veterinary center would prove to be a catalyst for development lives of both our livestock and our village. Absolutely, we can invest our energy and time in meeting other priority needs.*"

(±RWF)

4.2.2.5. Women's empowerment

Women as decision makers and catalysts of change (Fauzia Tabbasum, 35 year old female, housewife, deputy chairman of VDMC Singhoor, Chitral)

"Since the 2010 floods and CBDRM trainings, I have become more aware of the importance of timely decision making on emergency response and evacuation…when the recent floods occurred, I realized that some families who recently migrated from Upper Chitral were living in the nearby hill torrent at risk of floods. I was then conscious about the rapidity of water influx, so I decided to warn the people about floods and help to evacuate them. I brought them to my home and we had stayed together for a couple of hours until the flood situation got settled down." (±HF)

The damages to the migrants' houses were minor, but her timely decision making and action pinpoint that women can play key decision makers in an emergency situation; this used to be not the case in the village in the past. It is also crucial to acknowledge an emerging view in Pakistan that women are stakeholders who have agency to take action on their behalf. It is normal to see in Pakistan many male heads of household are absent from their homes for migrant labour, and then it is not optional but mandatory for women to prepare for and act against external shocks and uncertain events.

CBDRM as an opportunity of self-realisation (Banafsha Gul, female, CBDRM trainee, training officer, Balach, Chitral)

It is not uncommon to find highly educated, yet unemployed females in Pakistan. It also been the case for Banafsha Gul until she took part in a DRM training course during the pilot phase of UNDP CBDRM in 2014. Until then, she had not been given any chance to develop her competencies gained through her BA and MA degree in Education. After the completion of the training, she voluntarily joined a local DRM initiative (FOCUS Humanitarian in search and rescue team) which was followed by her full time employment as Training Officer at FOCUS Humanitarian Assistance.

"The DRM training was a turning point of my life. It gave me much confidence to develop my capacity as a DRM worker. I hardly knew that I would be able to apply and improve my teaching skills and knowledge of education for local disaster risk reduction initiatives. CBDRM has been a great opportunity for me to realise my dream." (±HF)

She has been busy in developing and imparting community level training on DRM. Until recently, she has provided children of different schools training on DRR for more than 20 villages of Garam Chasma, Gobor valleys, and Yarkhoon valley in Chitral.

Women's needs met for the whole community (Mai Paboo, 55, female member of CO, Dhorio, Tharparkar)

Mai Paboo is a 55-year old widow living in Dhorio village of Mithi, Tharparkar. She describes her life extremely challenging in the desert area of Mithi, Tharparkar. *"We don't have electricity, water, and lavatories. We have hardly seen rainfalls over the three years that led to loss of our nearly only livelihood, livestock"* (‡ RWF). Indeed, the drought situation of Tharparkar has been devastating to kill hundreds of people, many of which had already suffered from famine, malnutrition and other drought related hazards. Most of the victims have been children and women. In addition, many gendered vulnerabilities to the impacts of the drought have been witnessed in this area; e.g. worsening conditions of hygiene, sanitation, and health.

Much of housework rests with women; e.g. collecting water from dug wells. Mai Paboo, among many other women, has realized the gendered impacts of drought

that women are doubly exposed to environmental hazards and traditionally imposed roles. *"Our village has identified and chosen a solar submersible pump as our priority DRR measure because it will greatly help the local people, especially women to save their time and energy"*, claims Paboo. (‡ RWF) She also stresses that *"women need to be able to express their own needs that have an important bearing on the quality of others' life in the community. For example, mothers' health condition directly influences their children's health and nutrition. It is not always easy to express our needs because of some cultural constraints. Nonetheless women need to speak up because otherwise no one will speak for us."* (‡ RWF)

Changing risk perception (Ms. Nowshad Bibi, female, Uchusht, Chitral)

Many people over the globe seem to still regard environmental hazard merely as God's punishment; Pakistan is no exception. This case study does not regard this particular risk perception as completely wrong or irrelevant. Fairly to say, it is but one of many possible ways of perceiving the cause and impact of environmental hazard; yet, the development of scientific and socially constructivist perception of risk is urgently needed.

UNDP Pakistan has emphasised the importance of conceptual learning and practical training, whereby local communities can develop multifocal perception of disaster risk. Ms. Nowshad Bibi, a mother of three children, is a member of VDMC Uchusht in Chitral. She belongs to a middle class family living with her husband, children and mother in-law. She is among few females of the village who attended the training workshop undertaken during the first phase of CBDRM.

She says that *"before the training, I was not aware of the DRM methodologies and the necessity of disaster risk management…I used to believe that a disaster results because the Creator gets angry at our wrongdoing, so we cannot do anything to prevent disasters. However, after attending different sessions and training on DRM, my ideas have changed. Now I think we can do many things to protect ourselves from disasters."* (‡ HF)

While sharing her experience, she added a recent story about her response to the October earthquake in 2015.

"All my children immediately evacuated outside of the house. But then I had to rush to my mother-in-law and took her under a big table in the room as she is too old to timely evacuate from her room."

(‡ HF)

Females are an important decision maker under diverse hazardous situations. This pinpoints the importance of wider participation of women in CBDRM.

4.2.2.6. Integration with CCA: future prospects and uncertainty

Integration of DRR and CCA (Maya, 35, female, Shiv Jo Tarr, Tharparkar)

Living in desert becomes a challenge particularly when there continue limited livelihood options and drought for a couple of consecutive years. What differentiates the vulnerability of women from that of men, however, is notably to do with a poor hygiene and sanitation situation. It has been also the case for Maya living with other family members in Shiv Jo Tarr, a desert town of Tharparkar. Maya says that

"Life in desert is very hard…I could only go to primary school but wanted to study more. Our income source is very limited as my husband and I together hardly make 3000 rupees a month. Even worse, drought has continued over the past three years. When there is no rainfall, our life becomes extremely difficult. The government built a reserve osmosis plant in our village that can be used for the purpose of drinking water. Now, our life is easier than before when we had to drink dirty water from dug wells. Still, we need a lot more water from the dug wells to fulfill other critical needs such as watering livestock, WASH and so on." (±RWF)

In the meantime, UNDP's fieldwork to the village confirmed that drawing water from a dug well consumes women a lot of time and energy; and it has been traditionally women's role. This village has chosen a solar submersible pump as their priority need on DRR. Not only is this scheme expected to fulfil water needs in general but it also contributes to satisfying the compelling need of climate change mitigation and adaptation. This small case is exemplary that different local priorities can be incorporated into one physical scheme. On top of that, the village has decided to collect 30 rupees every month from each household that can be used to maintain and manage the scheme in the future. She adds that "we are very poor, but it is now our responsibility to take care of the new water pump because we will get benefit from it in the future."

5. Conclusion: integrated analysis of learning for policy implications

With different levels and types of learning through CBDRM above, all the 30 at-risk communities successfully completed the planned activities (i.e. institutional development of COs and VDMCs, risk mitigation schemes, and conceptual and practical training) within the given timeframe (August, 2015 to January, 2016).[106] By the time of writing this report, CBDRM at UC level has been implemented in additional 54 communities of three districts (Chitral, Jaffarabad, and Tharparkar). Surely, however, these results do not indicate that the UNDP's CBDRM initiatives have completely changed the vulnerability characteristics of the communities against multiple hazards. UNDP's rationale for CBDRM, that is, taking it as an entry-point of risk-informed development, will take consistent efforts, longer time, more resources and wider participation to be fulfilled to direct the Pakistani society towards more a resilient and adaptable society (see Appendix two). Yet, it is worth discussing the lessons learnt in terms of UNDP's CBDRM implementation so far.

The scope of collective learning through CBDRM was different with partial success. In some communities with higher incidence of poverty in Ziarat and Tharparkar, the scope of collective learning through CBDRM was limited to safeguarding their properties against the hazards they perceived of as immediate threats. For example, one village of Ziarat was still found to have suffered from serious hygiene issues (e.g. rubbish dumping) after the completion of the flood protection walls, indicating that the CBDRM initiatives had not triggered broader ideational and behavioural change in other crucial aspects of their life at risk. Also, gender inequality was deeply embedded in the patriarchal norms for the CBDRM initiatives to bring about substantial change to women's life, especially in KP Province; although more understanding of their differential needs on DRR could be gained. High illiteracy rate was a common barrier for more effective learning in Ziarat and Tharparkar even if it did not restrict their willingness to learn. That said, any single factor such as poverty, gender inequality and illiteracy alone hardly determines the scope and likelihood of collective learning on DRR at local levels. Rather, CBDRM should be designed and implemented without overlooking multi-dimensional aspects and processes of human life.

[106] The risk mitigation schemes and their long term impact on the villages need to be studied in more detail in the flowing years.

The pre-existing capacity was found to greatly matter to shape the scope and contents of the collective learning. In general, social and economic stability accounted for greater ownership and interest of certain communities in the CBDRM initiatives than the other counterparts suffering from high incidence of poverty, conflict and other type of deprivation. For example, all the project communities in Chitral came up with their own project proposals for additional initiatives to prepare for future partnership with potential partners. Stronger place identity was also found in this area, along with Lower Dir. Probably this is why the LGA of KP Province differs from those of other provinces in devolution of higher levels of responsibility and autonomy: political, administrative and financial. Quite differently, none of the villages of Tharparkar could afford any financial support to the construction of the risk mitigation schemes.[107] This contrasting cases of learning and reflection of different communities on CBDRM implies that the pre-existing capacity greatly matters for CBDRM implementation, learning and results.

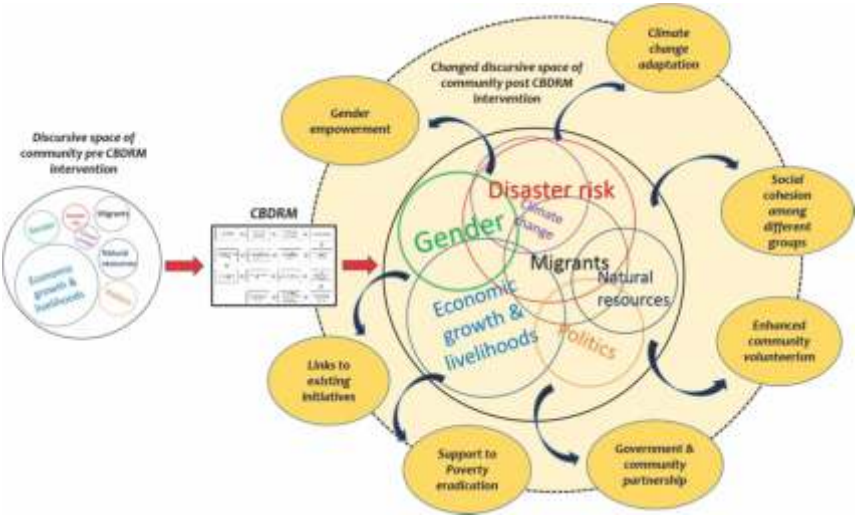
Regardless of the different levels of capacity, every community has maintained their adaptive strategy and coping mechanism. All the 30 communities, even the poorest, were found to have upheld certain levels of disaster resilience in their own institutions, social networks and power relations as well as physical assets. Thus, certain forms of adaptive practice against external shocks have been already routinely exercised. The nomadic tribes in Tharparkar have already taken temporary migration to the urban areas as a core adaptive measure, mostly, if not exclusively, in response to the decreasing livelihood opportunities, wrought by the three consecutive years' drought. Traditional risk knowledge and social values of reciprocity and volunteerism also need to be seriously taken into consideration for the formation of CO and VDMC. From a critical risk perspective, CBDRM processes are also regarded as revealing the invisible, yet chronical vulnerabilities whose underlying causes are shaped throughout the past developmental path.

[107] Not only the incidence of poverty for Chitral and Tharpar but also their change over the last decade greatly differ; while that of Chitral has dramatically decreased from 60-69.9% in 2004 to 40-49.9%, that of Tharparkar has remained the same with 70% and above for the same period of time. The Multidimensional Poverty Index is available at:
http://www.pk.undp.org/content/pakistan/en/home/library/hiv_aids/Multidimensional-Poverty-in-Pakistan.html

To track wide social impacts of CBDRM takes a holistic view. Importantly, it is methodologically hard to take apart disaster-specific resilience from other potentials and capabilities of society. For instance, enabling factors in the development of disaster-specific resilience (e.g. diversification of response options) might be also conducive to that of CCA, if not in every dimension. Collective efforts to enhance disaster resilience might in turn result in unexpected outcome such as social cohesion and more active expressions of women's needs. Throughout capacity building for DRR, groups can learn about how to politicise and address wider development issues that can otherwise persist to impede a shift in collective consciousness necessary for local innovation for DRR. Section Four ably shows that CBDRM can be seen as more than a technical tool for preparedness building only. CBDRM as a heuristic is a participatory learning process through which different ideas and interests can be collectively identified, put into question and addressed.

Most importantly in this report, the newly created discursive space (Appendix two) is a starting point for transforming fruits of resilience building efforts into risk-informed development. To identify invisible and complex, yet intimate relationships among different human aspects and social processes is key to the discursive transition. The below diagram depicts a process of how identified relationships among different themes and practices can emerge as new social realities conducive to the transition towards risk-informed development (for the new realities, see the above case studies in Section 4.2 and 4.3).

Figure 5.1 CBDRM as a development tool for risk-informed development (Source: author).



Notes: 1) This diagram simplifies the ongoing process by which identified relationships among different human aspects and social processes transform into new material and institutional realities, conducive to risk-informed development; and 2) In practice, the relationships are more complex and no assumption is made here that CBDRM always result in such collective reflection on the relationships.

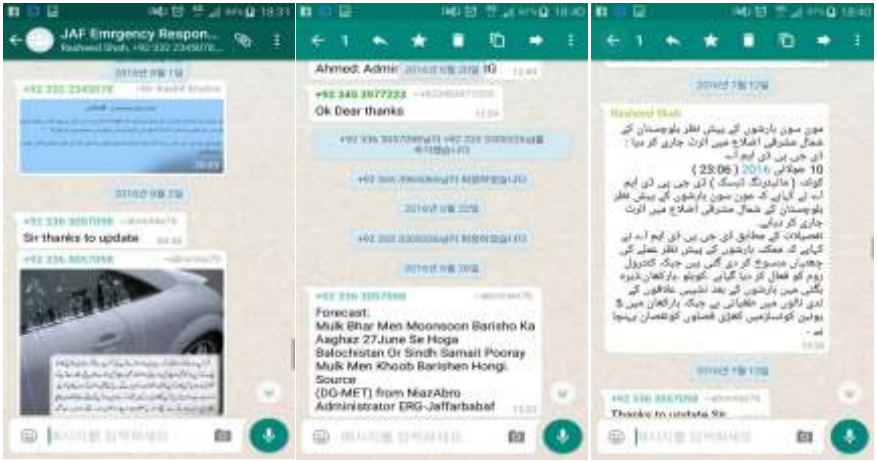
DRR mainstreaming into local development planning is urgent

CBDRM itself can be used as an empirical policy tool to inform DRR mainstreaming of local development plans at district level and below. To date, no substantial evidence that the UNDP's CBDRM implementation has led to district governments' immediate effort for DRR mainstreaming has been heard. This is partly to do with that DRR has not been among key functions and responsibilities for the devolution of power to local government since the 18th amendment.

That said, districts are facing different types of development challenges that in turn shape the nature of their disaster vulnerabilities. The case of Chitral that UNDP's CBDRM led to district government's additional support to the risk mitigation

schemes suggests a prospect of a tighter local partnership on DRR. Yet, such a partnership should be redirected towards DRR mainstreaming through collective identification and incorporation of disaster risks into local development plans. Likewise, UNDP's field visits to the districts and informal meetings with government officials (e.g. DC and line departments) formed new discursive spaces through which new initiatives came out; in Jaffarabad, for example, a district level emergency response team was set up to share meteorological forecast and other key information on DRR through WhatsApp Messenger as below.

Photo 5.1 Networking for emergency response through SMS in Jaffarabad



This initiative was suggested by the DC in the inter-departmental meeting on update of the 2016 contingency plan in which UNDP also joined. To date, use of the messenger has been limited to sharing of simple forecast, mostly running from the government to UC chairmen. Yet, this type of initiative, along with a wider discursive space such as district level DRR forum, might be able to play a significant tool in generating collective understanding of the evolving local disaster risks.

DRR mainstreaming is also critical to prevent new types of disaster risk from emerging so that the scope of adaptation to changing hazards can be minimised. This requires wider participation of stakeholders with strong political will, commitment towards risk-informed development, advocacy as well as a learning platform.

The social development of risk information and knowledge refers to collaboration and integration of different epistemic groups in light of local contexts

MHVRA should take advantage of the existing and emerging data on human development conditions of different types, for example the HDI, MPI and other statistics. These data offer much to inform MHVRA in terms of the socio-economic conditions that underlie the shaping of the local adaptive capacity and disaster vulnerabilities – both individual and collective. Yet, this should also involve an in-depth qualitative study of each UC and village, in terms of how the local development conditions have evolved to enable and disable the communities in terms of preparedness building, DRR and other prospective initiatives. Why do we have to socially produce actionable and understandable risk information? While the local communities are at the front line of confronting environmental hazards, they are also at the best position for identifying them. Here the significance of local translation of science of climate change comes to the fore. The increasingly complex patterns of environmental hazards and climate have already required local communities to transform their adaptive strategy.

CBDRM can be implemented in line with national and global discourses

Designing and implementing of CBDRM needs to be informed by higher levels of policy and politics discourse. Also, it is extremely important to develop evaluation tools for CBDRM in an attempt to capture the wider and longer term impacts on the communities. The 2012 NDMP Instructor's Guidelines on CBDRM briefly describes how to conduct monitoring and evaluation in its Module eight, without offering detail methodology and methods by which to understand outputs, outcome and impacts, especially if the latter contribute to broader vision of society and the globe. In fact, the added steps to the existing NDMP's CBDRM framework (step 12 to 15) in the previous version of CBDRM learning report were to envision a developed policy tool for exploring implications of CBDRM results for the wider development context of Pakistan.

The present report began by giving a brief account of why CBDRM can be used to translate and fulfil the four Priorities of the SFDRR at local level. The results and

findings in Section Four strongly support the rationale in one way or the other. Section 4.1 attempted to show the multi-dimensional nature and evolving construction of disaster risk in local contexts of altering environmental hazards, exposure, sensitivity and adaptive capacity. This was a preliminary study of the local construction of disaster risk; note that in the third phase of the CBDRM project in 2016 fuller scale MHVRAs at UC level are being done by the time of writing this report. Local translation of Priority Two to Four can be in more detail grasped by looking at Section 4.2 (risk governance, and investing in DRR, and building back better).

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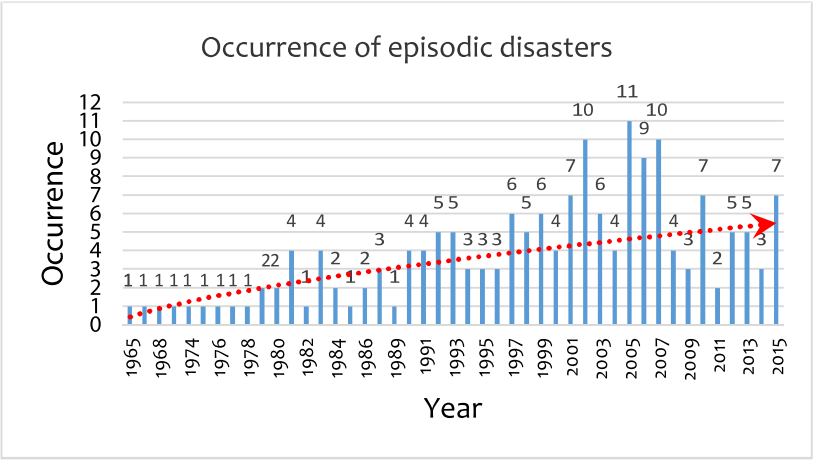
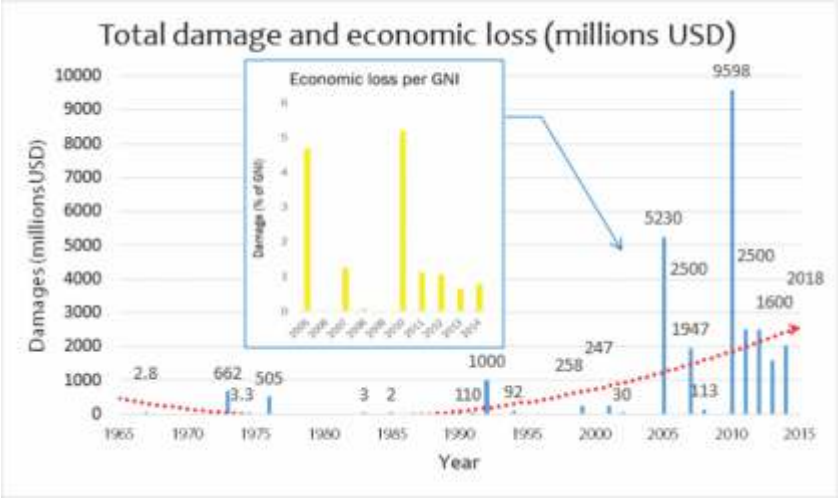
Appendices

Appendix one: Trends of disaster occurrence, disaster loss and damage



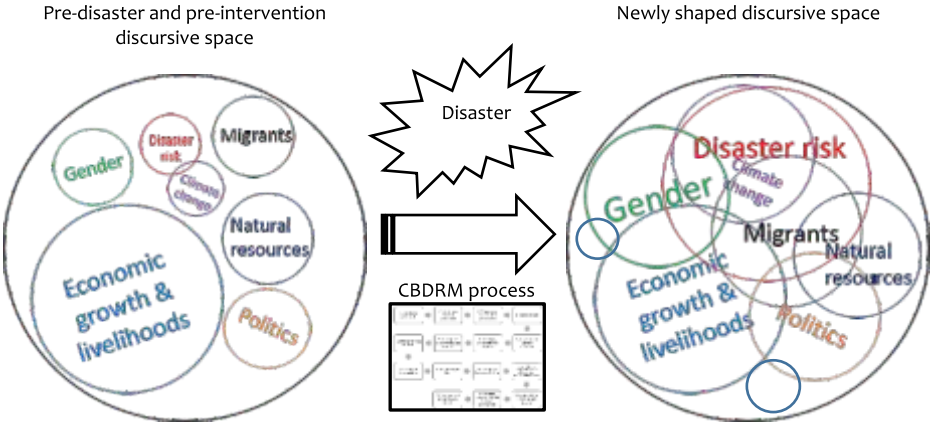
Note: Disasters include those triggered by meteorological, climatological, hydrological, biological, and geophysical forces.

Source: EM-DAT, available at http://www.emdat.be/advanced_search/index.html



Source: calculated from data of EM-DAT and World Bank, available at http://www.emdat.be/advanced_search/index.html, and http://data.worldbank.org/country/pakistan

Appendix two: Discursive space transformed by disaster and CBDRM

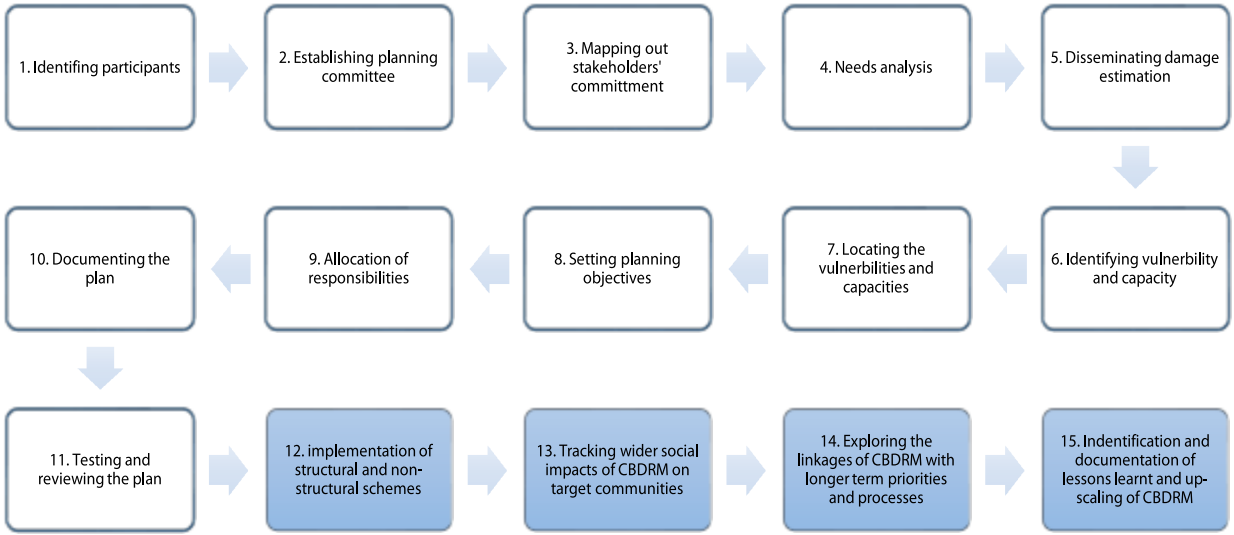


Source: adopted from Park. H (2015) Community Based Disaster Risk Management: Towards Risk-informed Development, CPRU, UNDP Pakistan.

Notes: 1. Each circle refers to a public discursive space in which ideas are formed, delivered, mediated and negotiated; 2. Change in a size of space indicates change in the volume, regularity and significance of existing and new values to be dealt with; 3. Overlaps denote that previously invisible, yet existing linkages among different human realms emerge as critical dimensions for research and project on disaster risk, and in particular roles and responsibilities of different stakeholders of CBDRM can be articulated 4) this model can be applied to different scales of governance system (from village to global).

Appendix three: Modified NDMP's CBDRM framework

Source: adopted from Park (2015)[108]
Note: The original NDMP framework defines CBDRM framework only up to Step 11. The steps 12 to 15, highlighted in blue are suggested adds to the existing framework, which are derived from the lessons learned from the pilot CBDRM project in 2014 to 2015. The recommended steps are added to ensure the sustainability, wider impacts and up-scalability of future CBDRM projects.



[108] NDMA, *National Disaster Management Plan Volume-III. Instructor's Guideline on Community Based Disaster Management*, August 2012, pp 12-5.

Appendix four: Details of risk mitigation schemes

No	District	Location/ Village	Scheme Name	Total Cost (PKR)	UNDP Share	Community share	UNDP Contribution Per HH	Beneficiary Household (HH)	Benificiary Population			GIS Coordinates of Schemes	CO Name
									Male	Female	Total		
1	Chitral	Balach	Erosion Control Structures (Check Dam)	1,128,060	811388	316,672	7,728	105	410	430	840	35°52'25.81"N 71°47'0.93"E	Hamiash Welfair Society
2		Goldoor	Flood Protection Walls	930,615	826185	104,430	4,237	195	790	975	1765	35°51'2.97"N 71°47'6.30"E	Goldoor Welfair Society
3		Singoor	Erosion Control Structures (Check Dam)	1,082,329	809,610	272,719	4,498	180	575	675	1250	35°53'38.01"N 71°47'24.43"E	Shahmirandah Singoor
4		Uchusht	Flood Protection Walls	959,080	829,720	129,360	11,063	75	222	403	625	35°49'51.20"N, 71°46'10.41"E	Alkarim Welfair Society
5		Mughlandeh	Erosion Control Structures (Check Dam)	1,119,500	815160	304,340	5,434	150	525	675	1200	35°51'28.19"N, 71°46'22.92"E	Mughlandeh Development Organization
6		Danin	Erosion Control Structures (Check Dam)	1,116,620	814820	301,800	13,580	60	170	210	380	35°52'17.91"N 71°48'58.59"E	Envirmental Welfair and Protection Society
7		Juhgoor	Flood Protection Walls	1,215,150	1003150	212,000	9,464	106	324	424	748	35°49'21.67"N 71°46'42.92"E	MCO Hinjugol
8	Lower Dir	Malakand Paeen	Flood Protection Wall	1,428,430	1,292,223	136,207	7,602	170	235	245	480	Nil	Local Oraganization Malakend Payeen
9		Malakand Bala	Causeway, Pipe Culvert, Drain	1,135,336	1,090,113	45,223	2,422	450	1764	1836	3600	Nil	CO Malkand Bala
10		Kotkay Shahi Khel	Flood Protection	1,212,291	1,150,199	62,092	7,668	150	588	612	1200	Nil	CO Kotkey Shahi Khel

			Wall										
11		Khema	Causeway, Pipe Culvert, Drain, Retaining Wall	1,043,972	929,972	114,000	2,447	380	1490	1550	3040	Nil	CO Khema
12		Kandaro	Flood Protection Wall	1,038,527	1,002,381	36,146	1823	550	2156	2244	4400	Nil	CO Kandaro
13		Dandona	Flood Protection Wall	973,618	915,201	58,417	5384	170	666	694	1360	Nil	CO Dandona
14		Gambeer	Flood Protection Wall	1,392,925	1,284,766	108,159	3671	350	1372	1428	2800	Nil	CO Gambeer
15		Hakeemabad	Small Bridge with Supporting Wall	1,633,257	1,469,707	163,550	28264	52	204	212	416	Nil	CO Hakeemabad
16	Jafferabad	Zafar Ali Khoso	Raised Platform	910,665	745,195	165,470	12,848	58	450	550	1000	28°22'54.11"N 68°18'26.78"E	Zafar Ali Khoso
17		Ghulam Mohammad Kandrani	Raised Platform	1,224,369	922,416	301,953	14,413	64	282	358	640	28°22'03.73"N 68°18'55.33"E	Ghulam Mohammad Kandrani
18		Lal Bux Khoso	Raised Platform	1,224,369	922,416	301,953	20,053	46	227	259	486	28°21'01.37"N 68°17'41.17"E	Lal Bux Khoso
19		Dhani Bux Khoso	Flood Protection Band	2,159,600	1,872,320	287,280	23,404	80	162	218	380	28°21'37.57"N 68°17'27.67"E	Madad Pur Kosa
20	Ziarat	Killi Chari	Check Dam	1,190,210	919,708	270,502	11,496	80	696	683	1379	Nil	Killi Chari
21		Warchum	Dam Pitching	1,267,750	950,813	316,937	5,433	175	950	1050	2000	Nil	Warchum
22		Spazandi	Flood Protection Wall	1,252,860	939,645	313,215	9,396	100	625	575	1200	Nil	Spazandi
23		Kan Bangla	Flood Protection Wall	1,255,996	941,997	313,999	11,775	80	211	761	972	Nil	Village Organization Kan Bangla

24	*Tharparker*	*Bhope Jo Tarr*	*Solar Submersible Pump.*	*1,295,415*	*1,295,415*	*0*	*13,636*	*95*	*292*	*325*	*617*	*Nil*	*Gulshan Development Organization*
25		*Shiv Jo Tarr*	*Solar Submersible Pump.*	*1,295,415*	*1,295,415*	*0*	*21,590*	*60*	*185*	*205*	*390*	*Nil*	*Roshen Development Oragnization*
26		*Dhorio*	*Solar Submersible Pump.*	*1,295,415*	*1,295,415*	*0*	*10,363*	*125*	*361*	*459*	*820*	*Nil*	*Dhorio Development organization*
27		*Khekinio*	*Solar Submersible Pump.*	*1,295,415*	*1,295,415*	*0*	*10,618*	*122*	*419*	*464*	*883*	*Nil*	*Guatsatar Development organization*
28		*Vesasar*	*Veterinary Center*	*1,299,949*	*1,299,949*	*0*	*5,200*	*250*	*798*	*883*	*1681*	*Nil*	*Vesasar Development Organization*
29		*Vejhyar*	*Veterinary Center*	*1,299,949*	*1,299,949*	*0*	*3,714*	*350*	*798*	*882*	*1680*	*Nil*	*Sada Bahar Vejhyar*
Grand total/average				*35,677,087*	*31,040,663*	*4,636,424*	*6429*	*4828*	*17947*	*20285*	*38232*		

Source: UNDP