PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	Enhance community, local and national-level urban climate change resilience to water scarcity, caused by floods and droughts in Rawalpindi and Nowshera, Pakistan
Country:	Pakistan
Type of Implementing Entity:	Multilateral
Implementing Entity:	United Nations Human Settlements Programme
Executing Entities:	National level: - Ministry of Climate Change – through establishment of PMU; NDMA - Ministry of Water Resources Local level: - Concerned provincial and district departments including Provincial and district disaster management authorities - Municipal Corporation Rawalpindi and Municipal Committee/Tehsil Municipal Administration Nowshera Community level: - Shehersaaz NGO - Elected representatives and officials of target Union and Neighbourhood Councils - Community based organizations and citizen/women groups in target communities
Amount of Financing Requested:	USD 6,094,000

1. Project Background and Context

Problem Statement, Need for the Project and Proposed Approach

Reducing the impact of flooding and droughts is becoming one of the top priorities of the government of Pakistan[1]. The government has requested UN-Habitat, through its Adaptation Fund designated authority to develop a project that addresses these adaptation challenges in line with the National Water Policy 2018, the National Flood Protection Plan 2016[2] and the National Disaster Management Plan 2012. Even though flood impacts are often severe in urban areas[3], a national approach to address this situation in cities doesn't exist in Pakistan. This is critical, considering that 36.4% of Pakistan's population lives in urban areas[4]. Existing approaches to deal with flood and drought impacts are not comprehensive and rainwater harvesting techniques are rarely used.

Recurring floods damage the lives of individuals, destroy infrastructure and render much drinking water infrastructure unusable in affected areas. In addition, unplanned urban sprawl has led to encroachment on riverbanks and other flood-prone areas. On the River Kabul in Nowshera, in Khyber Pakhtunkhwa Province and the Nullah Lai River[5] in Rawalpindi, Punjab Province, floods exacerbated by poor drainage and settlement encroachment are repeatedly affected the poorest and most vulnerable people. Tube wells get submerged and access to potable, safe water becomes difficult. As the majority of people depend on water from these sources for drinking, cooking and domestic use, floods have very serious effects – counterintuitively leaving hundreds of thousands of people without access to safe, clean water. Recurrent floods have been known to contaminate groundwater down to a level of 100 feet (30.5 metres) and thus affect people who depend on pumped ground water (see Figure 11). Further water contamination occurs because of improper solid waste disposal, which clogs drainage channels. The urban poor are then the most affected as they can't afford deeper boreholes (which may not be effective anyway). This leads to serious outbreaks of disease during flood periods, which particularly affects women, children, the elderly and those with underlying medical conditions. In Rawalpindi, for example, a recent study showed that the majority of water sources had indicator microorganisms beyond WHO permissible limits[6].

[1] See section D (analysis of national priorities / strategies and section H (outcomes consultations with government stakeholders).

[2] Idem

[3] According to government priorities – see section D and section H, adverse flood and drought impacts should be especially addressed in 1) flood plains and drainage areas in highly populated areas (i.e. in urban areas) and / or where livelihoods and assets are most affected, 2) areas where people have difficulty to protect themselves and recover from floods and where access to clean water is limited, especially when water is contaminated due to floods - thus mostly in poor and informal settlements.

[4] https://www.statista.com/statistics/455907/urbanization-in-pakistan/

[5] Just a few decades ago, Lai used to be a freshwater stream and was locally referred to as Lai River. Thanks to unchecked and unplanned urban growth in Rawalpindi and upstream Islamabad and absence of a planned sewerage system; the Lai has been turned into a very large sewer that carries the untreated and highly polluted waste water of these two cities.

[6] Nabeela, F. *et al* (2014) Microbial Contamination of Drinking Water in Pakistan, A Review, in Environmental Science and Pollution Research Vol 21, No. 24, 13939-13942

Water harvesting initiatives and facilities are very limited in Pakistan. The limited facilities in existence rely on techniques that are not well developed their ability to reduce flood impacts or adapt to climate change more generally has not been established. Therefore, the proposed approach of this project is necessary as well as cost-effective in the Pakistan urban context. To scale the project's approach, a national urban strategy will be developed, focusing on climate change impacts, particularly floods and water scarcity (and resulting public health problems), while also employing a spatial planning approach.

At the district, city and community levels, a comprehensive approach will be adopted to address water scarcity issues in a flood-resilient manner using innovative techniques. These community plans and city level spatial planning strategies will contribute to reducing climate change risks and impacts beyond city boundaries across multiple sectors.

Geographic and demographic context

Sharing a border with China, India, Afghanistan and Iran, Pakistan is a highly geographically diverse country that consists of deserts (making up 14% of its land area), the world 2nd highest mountain, and almost 1,000km coastline in the south, lush, fertile plains in the east and over 5,000 glaciers.

In 2019, Pakistan's population was 205 million[7], making it the 6th most populous country in the world according to the UN Department of Economic and Social Affairs. The population has more than doubled since 1985 and could top 400 million by 2080[8]. Such rapid growth puts strain on water, sanitation and health services which are already inadequate in places. Rural-urban migration has made Pakistan the second-most rapidly urbanizing country in South Asia, with about 36 per cent of the population currently living in urban areas.[9]

Pakistan's Human Development Index value for 2018 was 0.550, ranking it 147 out of 188 countries[10]. The 2018 Economic Survey[11] showed that the percentage of people living below the income poverty line has fallen to 6.1 per cent, while the working poor – those living below US$3.10 is stubbornly high, at 37.1 per cent. However, while the long-term trend has shown some progress, Pakistan's present economic situation means that around 1 million people have recently lost their jobs, which will have a significant knock-on effect on poverty[12].

Geographic and demographics in the context of climate change

In light of climate change projections, current and expected future impacts and vulnerabilities (further discussed below), the high poverty rate and rapid urbanization will lead to more people living in urban areas. Many of the migrants are likely to be poor and will gravitate to poor, informal, or unsafe areas close to rivers and drainage

[7] https://pwd.punjab.gov.pk/

[8] https://population.un.org/wpp/DataQuery/

[9] Pakistan's intended nationally determined contribution (PAK-INDC), p7

[10] http://hdr.undp.org/en/countries/profiles/PAK

[11] https://profit.pakistantoday.com.pk/2018/04/26/pakistans-percentage-of-people-living-below-poverty-line-falls-to-24-3-percent-economic-survey-2018/

[12] https://nayadaur.tv/2019/05/one-million-people-have-lost-jobs-and-eight-million-might-go-below-poverty-line-in-next-two-fiscal-years-hafeez-pasha/.

channels. Settlements such as these are targeted by this project, shown in Annex 1.

Economic Context

Having averaged almost 5% growth per year since the 1950s, Pakistan's current GDP is US$278 billion[13], or about US$1,356 per capita. This makes Pakistan a lower middle-income country. However, current economic forecasts are bleak, and the Pakistan Rupee has depreciated substantially in recent months. As mentioned above, this has potential for impacts on jobs and livelihoods that will unfold over the coming months.

The current makeup of the economy is around 58 per cent energy, 21 per cent agriculture and 20 per cent heavy industry – mainly manufacture, mining and construction. China has become a major investor in Pakistan under its Belt and Road initiative and numerous mega-projects are either under construction or in the pipeline[14].

Economic Context and Climate Change

In light of recent disasters and the future projected impacts of climate change, public funds are being re-programmed from social and economic services to disaster management. Extreme climate events between 1994 and 2013 resulted in annual economic losses of up to US$4 billion. Despite this investment, the government lacks the financial and technical capacity to protect high density areas and especially the urban poor. This resulted in monetary losses of over US$18 billion resulting from the devastating impacts of the floods between 2010 and 2014[15].

Social Context

Pakistan's new poverty index reveals that four in ten Pakistan's live in multidimensional poverty[16]. The average intensity of deprivation is 50.9 per cent, showing that each poor person is deprived in half of the indicators in the index[17]. Even though. Punjab and Khyber Pakhtunkhwa Provinces are relatively less poor, the incidence of poverty in many urban areas can still be very high[18].

The Pakistan Vision 2025 highlights Pakistan's overarching development goals. It highlights people threatened by climate change, and climate sensitive resources, such as water, as being priorities. As 60 per cent of the population is under the age of 30, youth and young people are also a critical focus of Pakistan's development priorities[19].

Social context and climate change

As mentioned in Pakistan's INDC: 'The livelihoods of the poor and the underprivileged segments of society are particularly at risk from the ever-increasing exposure to natural calamities, such as flash floods, riverine

[13] https://data.worldbank.org/country/pakistan

[14] Pakistan's intended nationally determined contribution (PAK-INDC), p7

[15] World Bank, (2019). Pakistan@100 Environmental Sustainability. p.61.

[16] OPHI and UNDP. Multidimensional Poverty in Pakistan, p.15.

[17] *Ibid, p.15.*

[18] *Ibid, p.16.*

[19] Pakistan National Human Development Report, 2018; UNDP Pakistan

overflows, heavy monsoons, cyclones, droughts and heat waves.'[20].

In Pakistan, more than 70 per cent of drinking water is sourced from underground aquifers[21]. Floods in various parts of Pakistan trigger deterioration of the groundwater quality by damaging or destroying underground sanitary and sewage systems, which contaminate groundwater. Numerous studies show that the drinking water in flood-affected areas contain high levels of bacterial contaminants[22]. During the 2010 floods, for example, analysis showed high levels of E Coli, Faecal Coliform, Shigella, and Salmonella, among others, in various locations throughout the country[23]. Although Vision 2025 highlights plans to expand basic services in the country, the financial resources and technical capacity are oftentimes lacking – especially in densely populated urban poor and informal areas.

Environmental Context

Pakistan is highly geographically diverse, and is facing numerous critical environmental challenges, which are being exacerbated by climate change. Its glaciers are in retreat – and according to the World Bank up to 85% of glacier mass could be lost this century[24], while desertification is also problematic. Understanding the environmental context is critical because; a) Pakistan loses at least 6 per cent of its GDP per year due to environmental degradation[25], b) more than half of the population relies on natural resources for their livelihood, c) Pakistan is a signatory to several Multilateral Environmental Agreements (MEAs), such as the Montreal Protocol on Substances that Deplete the Ozone Layer; the United Nations Framework Convention on Climate Change; the United Nations Convention on Biological Diversity; United Nations Convention to Combat Desertification; Kyoto Protocol; and the Stockholm Convention on Persistent Organic Pollutants[26].

When Pakistan's first census was completed in 1951, the population was 33million and the per capita water availability was 5,000 cubic metres. The population is now more than 210million and per capita water availability was less than 1,100 cubic metres. According to an article in the Daily Tribune newspaper in June 2019, water availability could reduce to 860 cubic metres per capita without mitigation measures[27]. Pakistan is placed 23 on the World Resources Institute's ranking of water-stressed countries[28]. It is generally accepted that women suffer more greatly from water scarcity (evidence is presented in Annex 4). How women would suffer in particular from the continued decrease in per capita water availability has not been well studied.

Environmental context and climate change

[20] Pakistan's intended nationally determined contribution (PAK-INDC), p5

[21] Tahir, M. A., Chandio, B. A., Abdullah, M., and Rashid, A. (1998), Drinking water quality monitoring in the rural areas of Rawalpindi.

[22] Tariq Usman Saeed and Haleema Attaullah (2014), Impact of Extreme Floods on Groundwater Quality (in Pakistan).

[23] Maimoona Raza, Fida Hussain, Jin-Yong Lee and Muhammad Bilal Shakoor (2017), Groundwater status in Pakistan: A review of contamination, health risks, and potential needs.

[24] http://documents.worldbank.org/curated/en/897001552661768639/pdf/135335-PN-P163618-PUBLIC-15-3-2019-16-1-53-PakEnvironmentalSustainabilityFinal.pdf p.45

[25] World Bank, (2006). Pakistan Strategic Country Environmental Assessment,

[26] http://www.mocc.gov.pk/frmDetails.aspx

[27] https://tribune.com.pk/story/2002420/1-per-capita-water-availability-may-fall-860-cubic-metres/

[28] https://www.wri.org/blog/2015/08/ranking-world-s-most-water-stressed-countries-2040

Deforestation has been a persistent problem with a variety of causes in Pakistan, including settlement expansion, agro-industrial expansion, use of wood for domestic fuel, logging and forest fires. Meanwhile glacial melt and retreat and the rise of the permanent snow line causes increased run-off, which is more difficult to retain due to deforestation. Extreme heavy bursts of rain happen occasionally in Pakistan, most recently in 2010, when 200 millimetres of rain fell in 2 days, causing devastating floods in Khyber Pakhtunkhwa and Punjab provinces, including the areas targeted by this project.

Climate Change observations, projections, impacts and vulnerabilities

Pakistan is one of the most vulnerable countries in the world to the threatened impacts of climate change, as evidenced by its consistent top-10 rank in the global risk index.[29].

Observational facts and trends

Data gathered from the Pakistan Meteorological Department in Islamabad suggests that serious climate change impacts are already being observed in Pakistan. Annual average temperatures have increased by 1.16°C in the last 50 years (period 1967-2017). Some months saw especially exponential increases – the average temperature for the month of May over the same period, for example, was almost 2°C. Warming in the months from June to September was less pronounced however, typically around 0.5°C

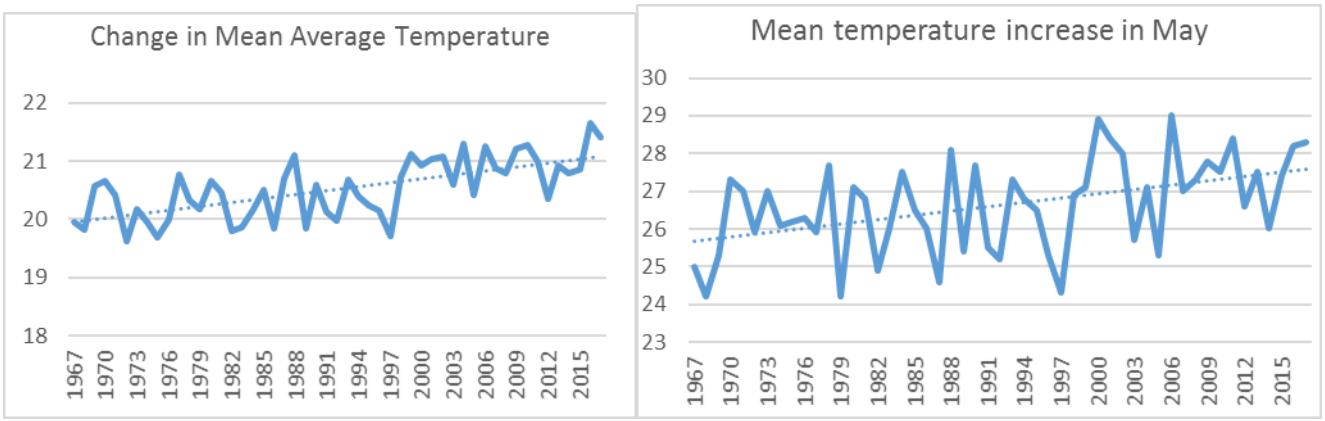


Figure 1 - Temperature change in Islamabad[30]

Rainfall

The number of heat wave days per year has increased nearly fivefold in the last 30 years. Annual precipitation has historically shown high variability but has slightly increased in the last 50 years. Sea level along the Karachi coast has risen approximately 10 centimetres in the last century.'[31]

Islamabad, about 20km from Rawalpindi and 140km from Nowshera receives around 1340 millimetres of rain

[29] https://germanwatch.org/en/download/20432.pdf

[30] Based on https://crudata.uea.ac.uk/cru/data/hrg/cru_ts_4.02/crucy.1811161208.v4.02/new_countries/tmp/crucy.v4.02.1901.2017.Pakistan.tmp.per

[31] ADB (2017, p ix) Climate change profile of Pakistan.

per year, on average. 64 per cent of this precipitation falls between the months of June and September. Rainfall in the dataset shows no overall trend of increase or decrease, but there is very high annual variation – the driest year is less than half as wet as the wettest, and the month of July 2001 shows more rainfall than some years in the dataset.

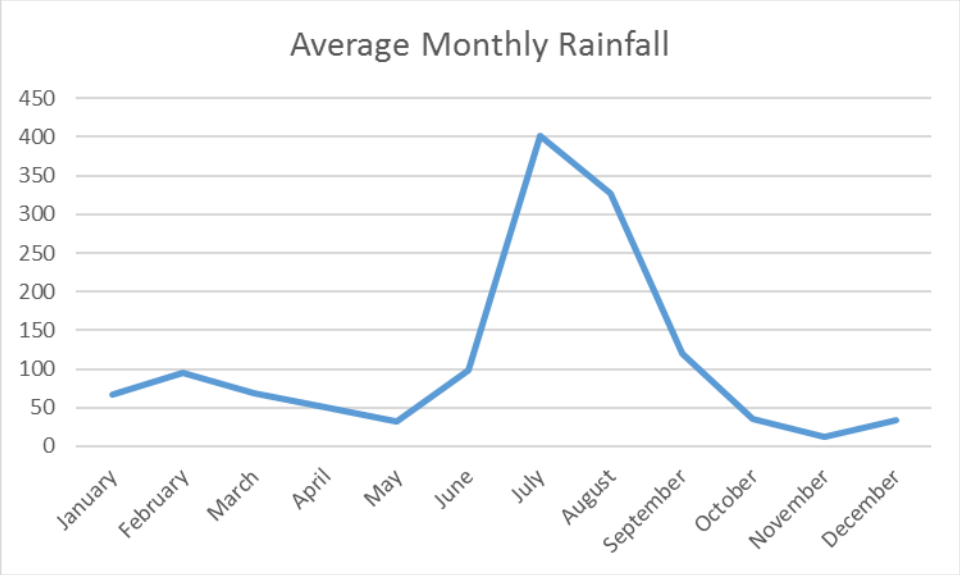


Figure 2 - Average monthly rainfall[32]

The stretch of land between Nowshera and Rawalpindi is one of the wettest areas in the country, with much of the rest of Pakistan's land area being dominated by dry and desert land. When combined with the presence of major rivers, melting glaciers, highly seasonal (and variable) rainfall and urban issues, it becomes clear that the northern area of Pakistan that includes Rawalpindi and Nowshera is highly prone to severe flooding.

[32] Graphic – authors. Data – Pakistan Meteorological Department, quoted in http://waterdata.iwmi.org/pages/data_search.php?search_term=Islamabad%20precipitation

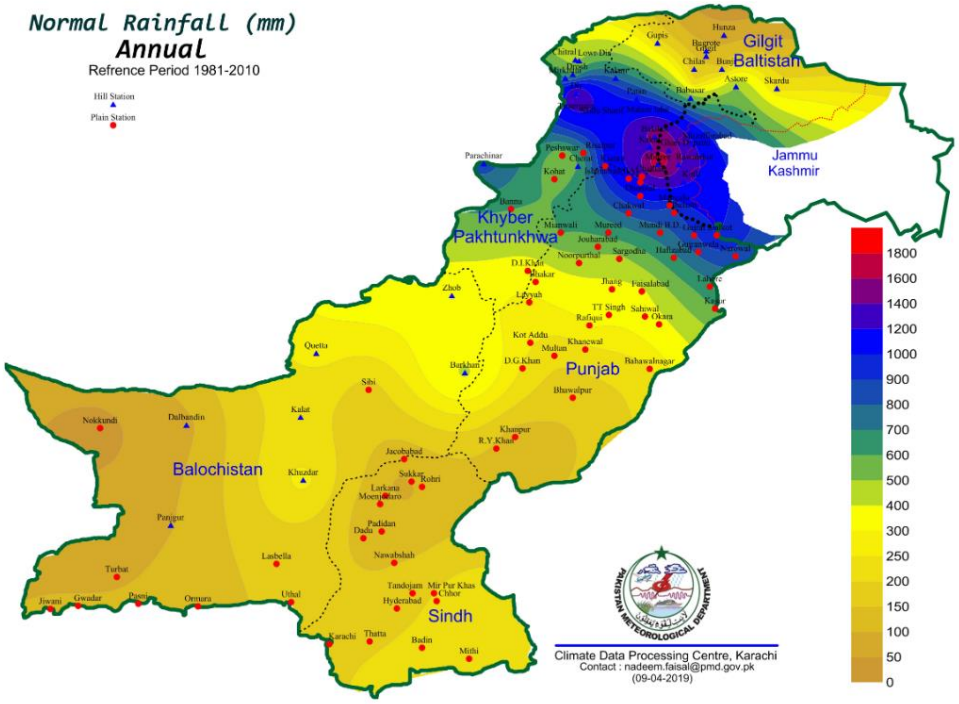


Figure 3 - Rainfall distribution across Pakistan 1981-2010[33]

Projections:

'By the end of this century, the annual mean temperature in Pakistan is expected to rise by 3°C to 5°C for a moderate global emissions scenario, while higher global emissions may yield a rise of 4°C to 6°C. Average annual rainfall is not expected to have a significant long-term trend but is expected to exhibit large inter-annual variability. Sea level is expected to rise by a further 60 centimetres by the end of the century and will most likely affect the low-lying coastal areas south of Karachi toward Keti Bander and the Indus River delta.'[34]

Table 1: All Pakistan Climate Projections (2011- 2050)

	Precipitation (mm/Decade)			Temperature (°C / Decade)		
Pakistan	A2	A1B	B1	A2	A1B	B1
	+1.73	+1.26	-0.89	+0.51	+0.41	+0.24

Source: IPCC Special Report Emission Scenarios (SRES) and GCISC & PMD and joint report on climate change 2007

Table 2: Regional Climate Projections (2011- 2050)

7	Precipitation (mm/Decade)			Temperature (°C / Decade)		
	A2	A1B	B1	A2	A1B	B1
Northern areas	+4.6	+2.9	-1.3	+0.76	+0.63	+0.39
Potohar & Upper KPK	+6.1	+3.8	-0.5	+0.01	-0.34	-0.01
Central / Southern Punjab & Lower KPK	-2.98	-1.78	-3.5	+0.63	+0.71	+0.05
High Balochistan	+1.48	+0.92	-0.57	+0.15	+0.26	+0.03
South-Eastern Sindh	+5.1	+3.0	-0.1	0.00	-0.1	+0.01

[33] http://www.pmd.gov.pk/cdpc/Pak%20Mean%20Rain.jpg

[34] Idem

Sindh & Lower Balochistan	-1.8	-0.98	+0.5	+0.5	+0.27	+0.01

Source: IPCC Special Report Emission Scenarios (SRES) and GCISC & PMD and joint report on climate change 2007

The table shows that most regions are projected to show substantial temperature increases. Norther areas, Punjab and lower Khyber Pakhtunkhwa, which includes both target cities, show the greatest projected increases. The projections show no clear trend regarding precipitation.35

Impacts

'Under future climate change scenarios, Pakistan is expected to experience increased variability of river flows due to increased variability of precipitation and the melting of glaciers. This could increase the demand for irrigation water and reduce availability of water from open sources as evaporation increases. Agricultural yields will decrease, and groundwater tables will stay at their present (low) levels or get lower, under a business as usual scenario. Water availability for hydropower generation may decline. Hotter temperatures are likely to increase energy demand due to increased air conditioning requirements. Warmer air and water temperatures may decrease the efficiency of nuclear and thermal power plant generation. Mortality due to extreme heat waves may increase. Urban drainage systems may be further stressed by high rainfall and flash floods. Sea level rise and storm surges may adversely affect coastal infrastructure and livelihoods.'[36]

Table 3: IPCC Projected Climate Change Impacts for Pakistan

Impacts (IPCC Group II Summary for Policy Makers)	Likelihood (based on SRES) Scenarios	Sectoral Vulnerabilities to Climate Change in Pakistan
Over most land areas, fewer cold days / nights, warmer and more frequent hot days / nights.	Virtually Certain	**Water:** Increased water demand due to frequent heat waves; widespread stress on water availability during drought; higher temperature may adversely affect HKH glaciers reserves, which are the main source of water supply in Indus river system (IRS); increased saltwater intrusion in Indus delta. Increased groundwater pollution due to extreme floods blending contaminated water run-off and overflowing drainage/ channels with freshwater sources. **Agriculture:** Warmer temperatures in some areas may result in higher yields, but higher evapotranspiration and water deficit may affect crop yield in other areas. Warmer environment would increase the incidence of pest and disease. Increased extreme weather events would cause crop losses and land erosion in floods and reduced crop yields in droughts. **Energy:** Increased energy demand because of higher temperatures. Decreased hydropower potential due to reduced water availability in long term. **Human Health:** Increased risk of vector-borne disease (e.g. malaria, dengue) and heat related mortality due to warmer temperatures. Increased risk of deaths and injuries from extreme weather events and diarrheal outbreak due to reduced access to clean drinking water. **Ecosystem:** Increased risk of extinction of many species due to the synergistic effects of climate change and habitat fragmentation: Increased threat to the stability of wetlands, mangroves and coral reefs.
Warm spells/ heat waves, frequency increase over most areas.	Very likely	
Heavy precipitation events, frequency increased over most areas.	Very likely	
Areas affected by drought increase.	Likely	
Increased incidence of extreme high sea level.	Likely	

***Specific water availability concerns and* <u>vulnerabilities</u>**

[35] Government of Pakistan (2013, p5) Framework for implementation of climate change policy

[36] ADB (2017, p ix) Climate change profile of Pakistan.

The projected impacts of climate change are likely to combine with a rapidly growing – and urbanizing – population to cause severe more water shortages in the future. Per capita surface water availability has declined from 5,260 cubic meters per year in 1951 to around 1,000 cubic meters in 2016. This quantity is likely to further drop to about 860 cubic meters by 2025 marking Pakistan's transition from a "water stressed" to a "water scarce" country (The minimum water requirement to avoid food and health implications of water scarcity is 1,000 m3 per capita per year).'[37]

Some specific issues concerning the water sector are:[38] a) The geographic location of Pakistan places the country in the heat surplus zone on Earth, putting it high on the vulnerability scale of climate change with considerable increase in frequency and intensity of extreme weather events and erratic monsoon rains (as demonstrated by the unprecedented floods of 2010);B) Fresh water being a finite resource is progressively becoming scarcer due to persistent increases in its competing demands; c) Water scarcity can adversely affect the health and well-being of the people of Pakistan and must be resolutely addressed especially since it has serious implications for the nation's food and energy security; d) Different regions in the country are endowed differently with water in terms of precipitation, surface flow and groundwater and there is increased stress on the sharing of water resources; e) Bulk of drinking water requirement is met by groundwater which is depleting, and its quality is deteriorating; Some specific issues concerning flooding:[39] In 2010, Pakistan was hit by one of the worst natural disasters - floodwaters inundated 38,600 km^2 area in all four provinces and affected an estimated 20 million people, mostly by destruction of property, infrastructure and lands of livelihood, with a death toll close to 2,000. The resulting damages of about $10 billion were unprecedented in scale and magnitude – they made nearly half the cumulative total damages in the last 60 years.

The brunt of droughts and floods mostly falls on the poorest people who reside in smaller and informal settlements where the infrastructure and construction are of poor quality. As per National Disaster Management Authority (NDMA) and UN-Habitat[40], it became evident that communities are vulnerable to various hazards due a number of reasons: geographically, areas along riverbanks or drainage channels are at high risk of flooding. Furthermore, mountainous regions, especially areas below the mountain slopes are prone to landslides. The infrastructural quality is weak and shelters in the region are not disaster resilient and hence cannot withstand floods, winds, and landslides, causing massive destruction. This destruction further aggravates the conditions as services are hampered, water, sanitation, and hygiene services become ineffective, resulting in spread of diseases and already affected households do not have the capacity to cope with the massive losses. In areas of drought, longer dry spells make household vulnerable as access to water is minimum, resulting in domestic and agricultural problems.

To enable people living in disaster-prone areas of Pakistan to adapt to the impacts of climate change, it is necessary to identify what underlying conditions make people in Pakistan vulnerable. Geography plays a major role as disaster-prone areas are more challenging and usually have higher endemic disease rates. However, increased population pressures force people to live in more disaster-prone areas such as along riverbanks, drainage channels, low-lying areas and below mountain slopes. The type, weaknesses, and strong points of a community and their service requirements, especially of women, children, elderly and disabled people, are the main elements to develop disaster resilience plans targeted at that specific community. In summary, climate Change is taking its toll on Pakistan as evidenced by an increase in the intensity and frequency of climate

[37] National water policy (2018, p 1)

[38] National water policy (2018, p 3-4)

[39] National flood protection plan (2016)

[40] NDMA (2017) Integrated Context Analysis (ICA) on Vulnerability to Food Insecurity and Natural Hazards and UN-Habitat Multi-Hazard and Vulnerability Risk Assessments (MHVRAs) conducted by UN-Habitat in Chitral

induced disaster events in Pakistan. There is an increasing recognition among policy and decision makers of this fact and addressing climate change related flood and water droughts/ water scarcity issues have become government top-priorities. While Pakistan is urbanizing rapidly, the battle against climate change adversities will have to be fought in urban areas. With a change in precipitation and temperature patterns, floods and droughts are becoming more intense. The proposed interventions aim to address this situation by putting in place solutions that could reduce the risk and impacts of flooding in urban areas while offering sustainable options for increasing the access of communities to safe drinking water especially in the face of increasing droughts / water scarcity.

Target areas and population

The proposed project targets two cities; Rawalpindi, in Punjab Province, and Nowshera, in Khyber Pakhtunkhwa (KPK) Province. Rawalpindi is 20 kilometres south of Islamabad, Pakistan's capital. Nowshera is around 140km to the northwest of Islamabad by road, and around 45km east of Peshawar, KPK's capital.

Figure 4 - Project Locations within Pakistan[41]

[41] Author's own work, from Google maps

Figure 5 - Project Locations relative to major cities and roads[42]

The target communities in Nowshera and Rawalpindi are characterized by a high exposure to floods and water scarcity. Climate sensitivity in Pakistan's cities is underpinned by rapid urbanization and population growth, leading to people residing in high-risk flood areas. Underlying vulnerabilities are extreme poverty, informality and limited access to basic services, mainly clean water (often due to water contamination caused by floods), gender inequalities and environmental degradation. Moreover, adaptive capacities at household, community and governance level are barriers for change. The selection of Nowshera and Rawalpindi cities and target communities is based on a combination of above criteria (especially flood and drought risks), government priorities, geographic locations that allow for water harvesting and rooftop rainwater harvesting options. Climate change impacts and vulnerabilities have been identified through national studies focused on target areas, NGO studies and questions used during consultations with target municipalities and especially target communities (see summary of outcomes in Tables 6 and 7, below.

The link between climate change related floods and water quality and scarcity issues: As shown above in detail, the target cities are heavily and increasingly affected by floods. Floods, in turn, affect water availability and quality because boreholes (on which the poorest household depend) get flooded by flood water that is polluted by waste in drainage channels. This contaminates the groundwater, which becomes undrinkable, leading to water scarcity, even in the wet season. At the same time, droughts are increasing in the dry season and fresh water from glaciers is reducing due to climate change. To reduce vulnerabilities related to water scarcity and water borne diseases at household level, rainwater harvesting, and cleaning systems will be installed at households above flood water levels, allowing households to access clean water directly.

Rawalpindi city

Climate change risks, impacts and vulnerabilities: Climate change-related urban flooding and drought are major concerns in Rawalpindi. Parts of the city are vulnerable to flooding, primarily during monsoon season, as well as during unexpected winter rains. The intensity and frequency of flooding is increasing over the past years"

[42] Author's own work, from Google maps

"*Natural disasters Increased in frequency substantially in the 1990s before stabilizing, then declining from a peak in 2005. Overall, however, the number of disasters reported annually was significantly higher at the end of the period 1994-2013 than it was at the start. […] This increase in disaster frequency was largely due to a sustained rise in the number of climate-related disasters such as storms and floods (Figure 3). EM-DAT recorded nearly 240 climate-related disasters per year before 2000, compared to 341 per year after that date, a 44% increase. While occurrences of climate-related disasters have declined from their peak in the last three years, they remain at more than double the levels recorded in 1980-1989 (an average of 140 climate-related disasters per year) and 50% higher than in 1994*[43]*.* According to Pakistan District level climate risk and hazard assessment, flood risk is high in Rawalpindi district and in the city especially, and drought risk is medium.

Specific flood risks, impacts and vulnerabilities Rawalpindi city is in the downstream catchment basin of Lai Nallah (with hills and mountains in the north), which used to be a fresh water stream a few decades ago. It is now the main channel carrying the sewage and storm water of Islamabad and Rawalpindi. Lai Nallah is fed by a number of channels that serve as the main sources of drainage for the twin cities. In Rawalpindi city, the Lai Nallah bisects the city dividing it into areas administered by Rawalpindi Municipal Corporation and those administered by Cantonment Administration. Over the years, in absence of any land use regulations and control, both banks of Lai Nallah have been populated and now some of Rawalpindi city's most densely populated residential and important commercial centres are located here and hence are vulnerable to recurrent flooding in Lai. It is recommended by the national government that a permanent solution of the problem must be evolved as early as possible.[44] A total of 19 flood events occurred during the last 59 years, among which the flood of July 2001 was the largest. On 23 July 2001, a cloudburst resulted in 620 mm of rainfall recorded in 12 hours in Islamabad and Rawalpindi. Heavy floods in Nullah Lai a rain-fed natural stream flowing through the Rawalpindi City and its tributaries inundated the nearby houses, bridges, and roads. This urban catastrophe resulted in losses to life and property, with a death toll of 61 people, destruction of 800 houses, and damage to 1,069 houses. This is largely because of the encroachment on the banks of the Nullah, against which no action has been taken by the concerned authorities. Rawalpindi's population density around Nullah Lai is about 4,200 persons per km^2[45]. Due to land scarcity, people have even constructed houses that encroach on the banks of the Nullah Lai. Floods start when water levels of Nullah Lai exceed 5.5 meters, which is usually during the monsoon season (July to September). Tehsil Municipal Administration blows a siren in low-lying areas when the water level reaches the alert level of 4.8 meters. Those most affected by flooding in Rawalpindi live in slums and low-lying areas. Annually, some 400,000 people are affected by floods in the city[46].

Specific drought and water scarcity risks, impacts and vulnerabilities[47]

Over the years Rawalpindi has turned into a water scarce city. Currently there are three main water supply sources, Rawalpindi city depends upon. These include Rawal Lake located in Islamabad Capital Territory (ICT), Khanpur Dam located in neighbouring Khyber Pakhtunkhwa province and more than 200 operative tube wells.

[43] Centre for Research on Epidemiology and Disasters (2015), The Human Cost of Natural Disasters, p.10

[44] Pakistan government (2016, p 67) National flood protection plan

[45] UN-Habitat (2015) Climate Change Vulnerability Assessment of Islamabad

[46] ibid

[47] Excerpted from Sindhu, A.S.; Rawalpindi-Islamabad: Multi Hazard Risk Mapping; Plan International Inc. Pakistan; 2014

The approximate supply of water from these three sources is 43 million gallons per day (MGD). In 1990 the total yield from Rawal Lake was around 42 MGD, which is estimated to decline to 30.85 MGD in 2020 largely due to siltation if the water inflow remains the same. This trend translates into more dependence on groundwater sources, which are already depleting fast. The excessive exploitation of groundwater sources through ever increasing number of tube wells is pressing hard the water table.

The unavailability of municipal piped water supply; in numerous new housing schemes and in areas of Rawalpindi, where municipal piped water supply is not sufficient; leaves households with no other option but to make their own arrangement mostly in the shape of installation of domestic pumps for extraction of groundwater or to get water from other neighbourhoods. The heavy reliance on groundwater resources is causing water table to fall alarmingly. For instance, in 1980 the average water table in Rawalpindi was 40 ft which has gone down since to 150 ft or even more in some cases, making further extraction uneconomical. If the existing trends continue the groundwater sources will be depleted further at much faster pace. In total, 80 percent of the groundwater boring and wells in Rawalpindi have become dry and is assessed to be unfit for drinking. Moreover, the water resource vulnerability evaluation index proved that the water resources in Rawalpindi found to be relatively vulnerable according to the vulnerability standards. Rapid increase in population, reduction in water table due to excessive withdrawal, change in rainfall pattern and poor socioeconomic condition have greatly contributed to the relative vulnerability to climate change in Rawalpindi[48].

Population:

As per the preliminary results of National Housing and Population Census 2017, Rawalpindi district has a total population of 5,405,633 distributed in 888,765 households. Of this population 2,875,516 or 53 percent resides in urban settlements of the district. Of the total urban population 2,098,231 is concentrated in Rawalpindi city alone. The annual growth rate is 2.75 percent. The average household size is around 5.8 persons per household. The religious distribution is that 96.8 percent are Muslim, 2.47 percent Christian and 0.73 percent belong to other religious groups. The main industries of the city include oil refineries, gas processing, steel manufacturing, iron mills, railroad yards, textiles, leather goods production, etc. Because of these industries, it is regarded as one of the most polluted cities in the world[49].

Target communities and population

The target communities selected for this project are poor and lack reliable access to clean water. To determine the households selected, the project followed the method of the Benazir Income Support Program (BISP) - Pakistan's largest initiative to identify and reach out to poorest households across the country and provide them targeted subsidies and incentives through a variety of programs.

BISP developed the poverty score card, which takes into account a number of factors, including access to water and sanitation facilities, to determine poverty status. The project formulation team used this scorecard to identify the poorest households in the target area[50], and on this basis began the community consultations, which have been used to triangulate and identify the households with the greatest need. This approach was necessary as the project wanted to ensure it gave consideration Afghan migrant households, which do not

[48] Shabbir, Rabia, and Sheikh Saeed Ahmad. "Water resource vulnerability assessment in Rawalpindi and Islamabad, Pakistan using analytic hierarchy process (AHP)." *Journal of King Saud University-Science* 28.4 (2016): 293-299.

[49] https://www.who.int/airpollution/data/cities/en/

[50] It should be noted that the original BISP poverty scorecard work is now 10 years old. This is why the proposal development team used it as a basis, but cross referenced it with community consultations

(always) appear in official data/information as well as recent migrants, or those who may, for whatever reason, not have been identified by BISP.

Before activities commence, the exercise will be revisited, recognising that the poverty and demographic situation is not static, to confirm that the poorest households have been chosen (again, revisiting the criteria of the poverty score card exercise confirmed by community consultations). The BISP also has a gender component – under its programme, only households that nominate a female beneficiary are eligible to receive support. This method also informs this project, households that benefit from RWH are those that have female beneficiaries nominated under the BISP programme and it will be used to identify female beneficiaries under Output 1.2.

In this regard, young people and women in particular will be drivers of change in the project. Not only does the project seek a fully equal gender balance, several of its activities will proactively engage women. Activity 1.1.4 will ensure an equal balance of male and female consultations, and will fully include young people. Activity 1.2.1 will train 300 people, including 150 women, to operate, manage and maintain the community/household level RWH infrastructure. The project will also select 20 women to benefit from the training under output 2.3. This is some of the ways the project will seek to proactively engage and benefit women and youth. Further information is presented in the results framework in Part III, Section E and the Gender Action Plan in Annex 4.

For the implementation of the AF project, the following communities in Rawalpindi city are proposed to be targeted:

Table 5: Target communities in Rawalpindi and their estimated population

Union Council (UC) No.	UC Name (area)	Estimated Population as on 31 Dec 2016*	Estimation by UC representative 2018
UC # 1	Ratta Amral	29,149	
UC # 2	Dhoke Ratta	28,883	
UC # 4	Dhoke Mangtal	33,390	43,000
UC # 5	Dhoke Hassu North	20,544	38,700
UC # 6	Dhoke Hassu South	19,980	34,000
UC # 12	Dhoke Najju	28,152	40,000
UC # 37	Dhoke Dalal	24,310	
Total		184,408	155,000

Source: Punjab Development Statistics, 2016; Punjab Planning and Development Department

Community consultations and women focus group discussions took place in the most flood and water scarcity affected communities: UC 4, 5 and 6. Within these communities the most vulnerable and poorer households, and especially women and youth, will be targeted for household-level water harvesting activities.

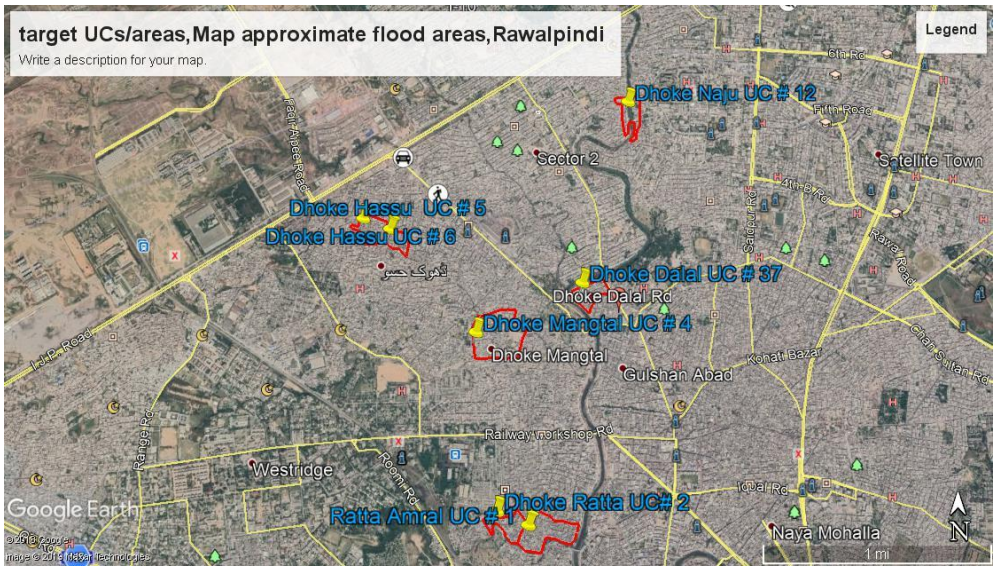
Overview UC 4, 5 and 6

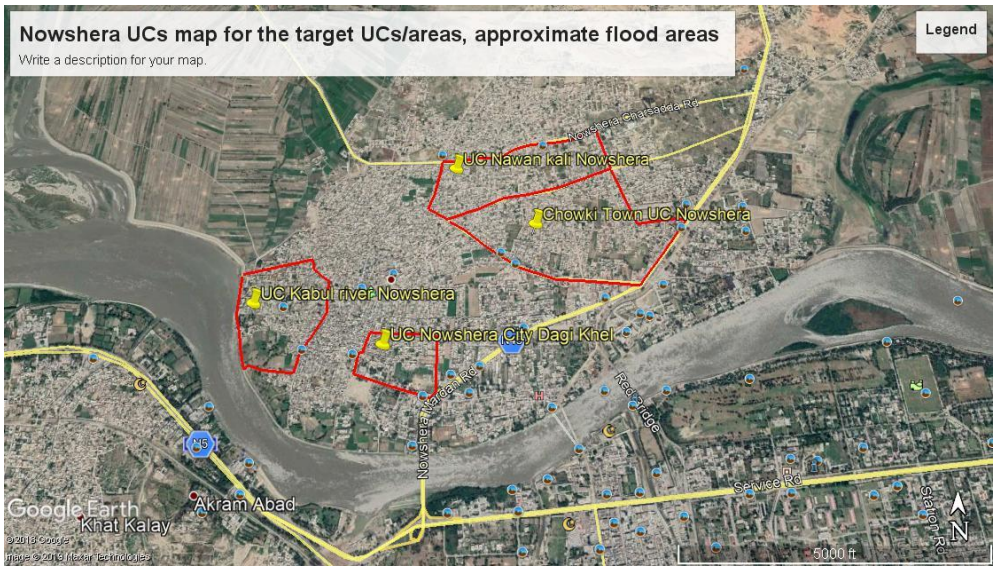
Poor	Avg HH size	Access to electricity	Access to water	Access to sanitation	WASH
60 % (depend on daily wage labour)	7	100%	Types of Water Supply: •Tap water: 65-70%: Hand pumps: 2%: Boreholes: 25%: Wells: 1-2% Water vendors: 5%	100% (poor though)	Many areas do not have an underground sewerage system and instead depend on open sewers in the streets

Target communities and their populations, of which youth and children are highly represented, are mostly affected by interrelated water scarcity, water borne diseases and floods. Floods can be as high as 4 meters above the ground, affecting houses, but also enter boreholes, wells, hand pump, contaminating groundwater. Women and children are especially hit hard by floods, diseases and water scarcity (see above). Poverty is

rampant. Men resort to daily wage labor while women contribute in household incomes by working as domestic servants or undertaking works like sewing/tailoring in their homes. Although flood reduction is a priority need, community members fear that government flood protection measures will lead to the removal from Lai Nallah's banks and thus to their displacement.

The community has a strong sense of togetherness. Women mentioned that they and their households would be ready to contribute their labor in any community led interventions. Many people have construction skills as men work as masons and construction labor. These skills can be harnessed for community based/community led initiatives involving simple construction skills. Overall, the community has a strong urge to improve their living conditions. This urge can be harnessed to mobilize the community for community-based initiatives. The project will focus on communities/areas and households that are affected by flood, water scarcity and related diseases, especially those dependent on groundwater / boreholes that are polluted. Women and youth will be promoted as agents of change, while specific needs especially of children, but also other vulnerable groups, will be considered.





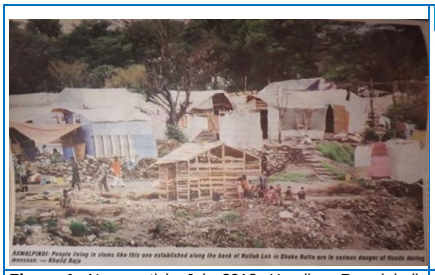


Figure 1: News article July 2018. Heading: Rawalpindi: People living in slums like this one established along the banks of Nullah Let in Dhoke Ratta are in serious danger of floods during monsoon

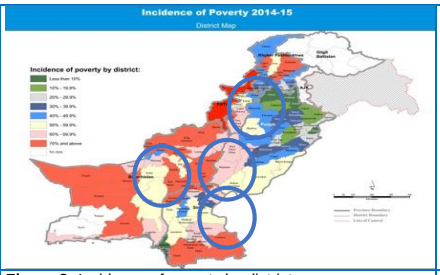


Figure 2: Incidence of poverty by district

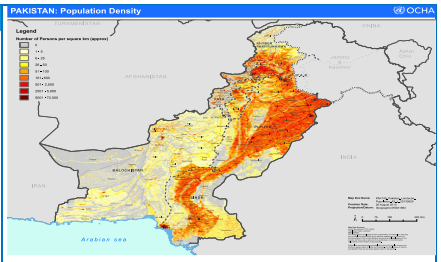


Figure 3: Population density

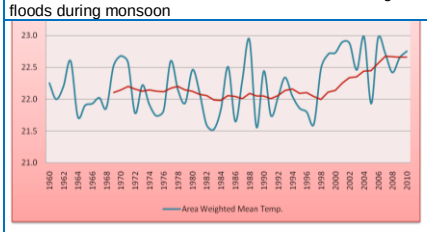


Figure 4: Area weighted mean temperature (1960-2010)

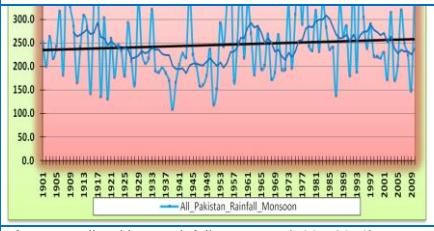


Figure 5: All Pakistan rainfall monsoon (1901-2010)

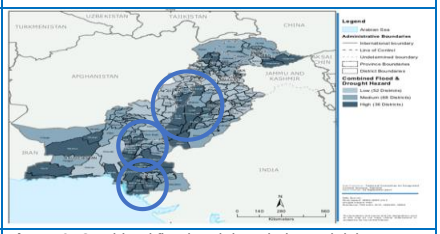


Figure 6: Combined flood and drought hazard risk map

Source: Government of Pakistan (2013, p4) Framework for implementation of climate change policy

Source: NDMS (2017) Integrated Context Analysis (ICA) on Vulnerability to Food Insecurity and Natural Hazards.

Figure 7: Rivers of Pakistan

Source: NDMS (2017) Integrated Context Analysis (ICA) on Vulnerability to Food Insecurity and Natural Hazards.

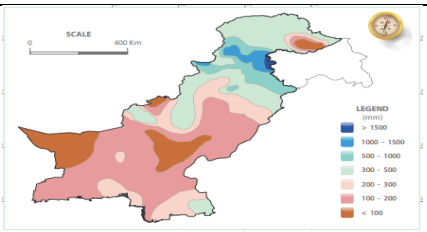


Figure 8: Rainfall in Pakistan

Figure 9: Lai Nallah in Rawalpindi

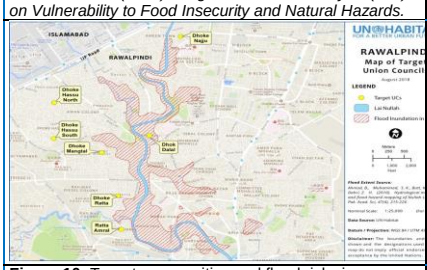


Figure 10: Target communities and flood risks in Rawalpindi

Figure 11: Drainage channels closed-in by houses and filled with waste in target communities in Rawalpindi – flood levels reach four meters above the channel banks, which is the 2nd floor of houses.

Figure 11b: Flood and drought coping mechanisms – groundwater gets polluted because boreholes (see pump) gets flooded. Water is collected from other neighbourhoods a few times a day.

Figure 13: Rescue from floods in Nowshera

Figure 14: Target communities in Nowshera

Figure 15: Flood impact in Nowshera. Source: Aug. 3, 2010 (U.N. photo by Amjad Jamal).

Source: www.bostonglobe.com. A Majeed/AFP/Getty Images

Table 6: Target communities and population, main climate change hazards and effects, barriers to adapt and possible resilience building interventions (based on consultations (see Part II.H and Annex 6)

Community	Population / beneficiaries (Disaggregated)	Main climate change hazards and impacts	Effects on community / underlying vulnerabilities	barriers to adapt	Potential interventions identified with communities during the formulation of this project
Dhoke Mangtal (UC 4) 38,700 Dhoke Hassu North (UC 5) 34,000 Dhoke Hassu South (UC 6) 40,000 Total: 155,700 Dhok Najju (UC 12)	43,000 (2018 estimation) - Female: 47% - < age14: 37% - age 15-24: 21% - age 25-60: 39 % - > age 60: 3% - Disabled: 2% - Some Afghan refugee families	1. Water scarcity (caused by increased droughts and contaminated water due to increase of floods that contaminate groundwater)	The poor households are most affected as they cannot afford to bear the cost of installing a borehole and neither can pay for availing the facility from private water vendors. Getting water for poor households, which make up more than half of the community, cost them considerable portion of their meager incomes Collection of water largely rests with women and children. Sometimes they spend hours in this activity Lack of water availability also compromise hygiene needs, which in turn affect health. Scarcity of water is also a source of feuds among neighbors. Gender (women) specific: Women have to travel almost two kilometers to bring drinking water from two nearby water sources--private boreholes (in Dhoke Najju).	- Dependence on groundwater, which is polluted and for which water tables have dangerously gone down - For a borehole, households have to dig as deep as 300 feet and even more, which is costly - Absence of water sector planning at various levels. - Lack of awareness and technical support - Gender specific: Women are not involved in any community-based decision making - The respondent women had little idea of water harvesting techniques and how they may affect their lives - Since they are poor they would not be able to invest in rainwater harvesting technology.	- Rainwater harvesting - Construction of new dams* - Rehabilitation of existing tube wells*
		2. Water borne diseases (caused by contaminated water due to increase of floods that contaminate groundwater)	Contaminated water is a source of number of water-borne diseases including diarrhea, gastro and hepatitis to name a few. The poor households are among the most affected as they prefer quantity over quality Gender (women) specific: The prevalence of water borne disease and epidemics especially affects younger children. Taking care of them primarily comes to women increasing their burden and affecting their productive time. Poor health and problems such as wasting among children is especially high.	- People do not have a control on quality of water being supplied through municipal authorities as well as water vendors. - General lack of awareness, absence of options - Households who can afford have installed water filters while some also practice boiling of water before consumption for drinking purposes. Gender specific: Women are not involved in any community-based decision making	Laying of water supply pipes in a manner that they are not close to sewerage system* Installation of water filtration plants and their regular maintenance Boiling/disinfection of water before consumption* Awareness campaigns
		3. Flooding from Nallah Lai and other drains	Absence of land use planning and control has also contributed in localized flooding. The natural drainage channels as well as Lai Nallah have been encroached leading to narrowing of their traditional right of ways. In absence of an effective solid waste management system, waste ends up in local drains and Lai Nalla causing high levels of pollution. Although floods affect all, they affect most to those households who are located just next to the Lai Nalla and other drains. During rainy season the houses located next to Lai Nallah and other drains get affected almost annually. Gender (women) specific: Women being responsible for housekeeping have to put a lot of effort and time in cleaning their houses whenever these are affected by floodwaters. The monsoon season brings fear and especially women have to stay extra conscious spending sleepless nights.	- Dense area and little options to move away from risk areas - Households located next to Nallah Lai and other drains largely keep their ground floors free of furniture and other hard to move objects especially during the flooding season. - At some places, people have constructed small embankments, walls to remain safe from flooding. However, this strategy rarely helps. Gender (women) specific: - Women are not involved in any community-based decision making	- Construction of new dams* - Other proposed interventions are (partly) being done by the government)* - Awareness raising campaigns

*Note: These activities are suggestions from community members consulted that will not be developed because they are unfeasible, impractical, not cost effective, or they present potentially unacceptable or unmanageable levels of environmental and social safeguard risks.

Nowshera city

Climate change impacts and vulnerabilities;

According to Pakistan District level climate risk and hazard assessment, flood risk for Nowshera is very high and drought risk is medium. Heavy rains during monsoon cause flooding every year in Nowshera. As per the National Disaster Management Plan (NDMP) 2013-22, the district has a total risk weight of 24.12 in overall relative severity index of the country. The consultations held in target communities confirmed the same main issues.

Specific floods risks, impacts and vulnerabilities[51]

Nowshera city is located along River Kabul and north of a small mountain range. Within a stretch of about 15 km, between M1 Kabul River Bridge and Nowshera, Kabul River is primarily a confluence area for 7 major river courses, making this region very vulnerable to flood hazards. In absence of any formal land use planning, city has expanded uncontrolled. Many residential neighbourhoods, public buildings like schools, hospital and even government offices and commercial areas are located close to the river, so much so that the boundary walls of these structure now act as embankments for the river. There are hill torrents called Khawaar, which drain into the River Kabul. Some of these pass through the city.

Due to uncontrolled development of the city and its adjoining areas, building structures have been constructed in the ways of these torrents. This situation also results in localized flooding. City's wastewater is directly drained into river Kabul. Flash flooding is a common phenomenon in district Nowshera; due to mountainous terrain in southern parts of district and due to encroachment in urban centre of Nowshera City, flash flooding is increasing. Urban Centre/ Nowshera City, Nowshera Cantt, Pabbi, Akora Khattak, Jahangira and rural area of Khesgi Payan, Kheshgi Bala, Akbar Pura, Pir Sabak, Nizampur, Kaka Sahab, Cherat, and surrounding areas are all prone to flash floods. There have been many floods in the district and notable events are those of 1950 1956, 1957, 1973, 1976, 1978, 1988, 1992. However, the highest flood the district suffered with was in July 2010 which caused exceptional damages. Estimated loss was recorded as US$ 10 billion and US$ 3.7 billion respectively in 2010-11 floods in Nowshera. 90% of the families were displaced in Nowshera during floods in 2010-11. It caused drastic losses to infrastructure, government installations, properties, businesses, livestock and houses.

Specific drought and water scarcity risks, impacts and vulnerabilities;

Nowshera widely suffers from contamination of drinking water. The District Disaster Management Plan 2014 notes, "In District Nowshera water samples were collected from different sources such as tube wells, dug wells and hand pumps. Most parameters were found to be much higher than what are considered permissible levels by the WHO. More than 60 percent of the samples were found to be unfit for drinking. The results indicated water quality in Nowshera deteriorated due to the floods in 2010. The areas where water quality issues were severe included parts of Mohib Banda, Dheri Mian Ishaq, Tetaray, Khush Maqam, Jabba, Nowshera Kalan, Azakhel Payan, Bara Banda, Amankot, Hakeem Abad, and Dag Besood." This is problematic since the risk of droughts is increasing simultaneously with floods:

Population

According to National Housing and Population Census 2017, Nowshera district has a total population of 1,518,540. The average household size is 7.6 persons. 197,673 people live in Nowshera City. The religious distribution is that Muslims comprise 99 percent; Christian 0.5 percent; Ahmadi 0.3 percent and Hindu 0.1 percent. The main clans are Khattak, Durranis, Kakakhels, Yousafzai, Afridi.52 Economically speaking, 22 percent of the population relies on agriculture while majority of the people are in other profession or in government service.53Nowshera City is further divided into three larger portions: Nowshera Kalan (or area being

[51] For this section three main sources have been cited: District Disaster Risk Management Plan Nowshera developed by District Disaster Management Unit of Nowshera, 2014; Nowshera City Multi Hazard Risk Assessment, developed for UNISDR in 2011; and views of the local residents as recorded during discussions with them.

[52] District Disaster risk management plan Nowshera 2014

[53] Idem

administered by Nowshera Municipal Committee); Nowshera Cantonment and Risalpur Cantonment. Both cantonments are managed by their respective cantonment boards. Nowshera Kalan, or older part of Nowshera, has a total population of 83,567. This area is targeted for the project.

Overview Nowshera Kalan

Poor	Average HH size	Access to electricity	Access to clean water Contamination is a widespread issue	Access to sanitation
50 % (depend on daily wage labour)	6.7	100%	Types of Water Supply: Tap water: 27%; Hand pumps: 22%: Motor pump: 47%: Dug Wells: 2% and Other 5%	97% (poor though)

Sr.#	Union Councils (Ex)	Neighbourhood Councils (NCs)	Population (Estimated for 2017)
1	Nowshera City	Dagi Khel	15,648
		Allah Yar Khel	13,908
2	Nawan Kali	Nawan Kali	10,830
		Shahmeer Gari	
3	Chowki Town	Bara Khel	11,226
		Behram Khan Khel	8,966
		Mana Khel	5,053
4	Kabul River	Kabul River	15,117

Target communities and populations, of which youth and children are highly represented, are mostly affected by interrelated water scarcity, water borne diseases and floods. Floods mainly come from the river, but also from channels sourced from the mountains, affecting houses, but also enter dug wells, hand pump, and motor pumps, contaminating groundwater. Women and children are especially hit hard by floods, diseases and water scarcity (see above). Poverty is rampant. The male members of households in many households earn their living through menial labor in Nowshera and other places in Pakistan. Typical livelihood sources in Nowshera include construction, small-scale and artisan industries and small and informal trade. There are also a few people working in government administrative jobs.

The project will focus on those communities/areas and households that are affected by flood, water scarcity and related diseases, especially those dependent on groundwater / boreholes that are polluted. Women and youth will be promoted as agents of change, while specific needs of especially children, but also other vulnerable groups, will be considered.

Table 7: Target communities and population, main climate change hazards and effects, barriers to adapt and possible resilience building interventions (based on consultations (see Part II.H and Annex 6).

Community	Population / beneficiaries (Disaggregated)	Main climate change hazards and impacts	Effects on community / underlying vulnerabilities	barriers to adapt	Potential interventions identified with communities during the formulation of this project
Nowshera Specific details in the table below	80,748 (Total) Female: 48% < age14: 38% age 15-24: 20% age 25-60: 40 % > age 60: 2% Disabled: 2% Nowshera district had once sheltered a very large number of Afghan refugees. (As per UNHCR report March 2018, registered refugees are 36,675 in the district) In recent years it became one of the main areas where IDPs from trouble hit tribal areas and Swat took refuge. However, the exact population of this refugee population in Nowshera Kalan is not known.	1. Drought / scarcity of clean water (caused by increased droughts and contaminated water due to floods that contaminate groundwater)	- The available water from municipal supplies stinks and is highly contaminated. - The groundwater up to the depth of 100 ft is not fit for human consumption. - The poor households not being able to afford water purification/filtration systems are compelled to consume contaminated water	- Citizens consider that supply of water is responsibility of government. - Especially poor and lower middle-income households can't afford to install boreholes to extract groundwater from safer depths - Households generally are not aware of household level low cost water treatment technologies as is apparent from lack of availability of these technologies. - Water harvesting at community and household levels has never been considered as an option. Most of the respondents had not heard of them even.	- Overhauled city's water distribution system.* - Installed and regularly maintained water filtration plants in every neighborhood.
		2. River flooding	Over the years, the haphazard and unplanned growth of the city resulted in encroachment of river banks. Whenever river overflows the surrounding localities are inundated. Besides River Kabul a number of natural water channels that drain into River Kabul also pass through the city. During rainy season, these channels also cause flooding inundating neighboring areas. Settlements located in close proximity to River Kabul and water channels that drain into the river are among the most vulnerable areas. The poor households that make up the majority of these settlements are little prepared to reduce their vulnerability to recurrent flooding events.	- The communities are not familiar with community-based flood management measures. - Flood resilient building codes and practices and land use controls are not in place. - Like River Kabul, the natural water channels that pass through the city have also been encroached. At certain locations, buildings have been erected even in the beds of water channels. When rainwater flows in these channels it causes damage to these structures. - The city has a poor drainage system - The river and the water channels have been turned into dumping points for city's solid waste. This situation chokes them and obstructs the free flow of flood waters.	- Construction of retaining walls and embankments. * - Construction of check dams and water storage ponds* - Installation of an effective flood early warning system.* - Installation of RWH units - Awareness raising
		3. Diseases/epidemics (caused by contaminated water due to increase of floods that contaminate groundwater)	There is high prevalence of diseases like dengue, gastro, diarrhea, choler and hepatitis. Local residents attribute them to poor sanitary conditions of the city. The disease outbreak intensifies in flooding seasons. Kabul River has been turned into a dumping site for solid waste of the city besides its being the disposal point for city's sewage. People of all ages and all sexes are affected. However, it is the poor households and children who are most affected from water borne diseases. The burden of	- The municipal authorities neither have financial resources nor have technical skills at their disposal to address city's chronic water contamination challenge. - Many households have installed hand pumps as main source of water supply. However, these too do not deliver clean drinking water - Concerned authorities have so far been unsuccessful in launching effective public health awareness campaigns and preventive measures to control outbreak of dengue,	- Design of effective waste management plan for liquid and solid waste to stop the contamination of drinking

			disease not only causes health problems but also causes economic losses by reducing the productive time available to poor families. Poor households have to allocate a considerable portion of their meager incomes on healthcare. Incidences of diarrhea are high among the infants and younger children	malaria and diarrhea.	water developed by concerned authorities.

*Note: These activities are suggestions from community members consulted that will not be developed because they are unfeasible, impractical, not cost effective, or they present potentially unacceptable or unmanageable levels of environmental and social safeguard risks.

2. Project Objectives

The main objective of the proposed project is to "enhance community, local and national-level urban climate change resilience to water scarcity, caused by floods and droughts in Rawalpindi and Nowshera cities." This will be achieved through the following proposed **sub-objectives**:

1. **Community level:** Enhance community and household level flood resilient water harvesting facilities (using innovative techniques) and strengthen capacities to plan, construct, operate, maintain and replicate these.

2. **District / City level:** Enhance city and district-level water harvesting facilities in public buildings and on water storages in public gardens, develop district / city-level spatial strategies as tool to assess climate change related floods, droughts and water scarcity to plan for and manage climate change risks and to strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens.

3. **National and Provincial[54] level:** Strengthen national and provincial-level capacity to guide / direct city-level development considering climate change and disaster risks and impacts, especially water scarcity caused by floods and droughts.

3. Project Components and financing

Table 8: Project components and financing

Project Components	Expected Concrete Outputs	Expected Concrete Outcomes	Amount (US$)
Component 1 Community level activities: Enhance community- and household-level flood resilient water harvesting facilities (using innovative techniques) and to strengthen capacities to plan, construct, operate, maintain and replicate these.	Output 1.1. (concrete) 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	Outcome 1.1. Increased adaptive capacity within the water sector at community level – 38,885 people benefitting directly from rainwater harvesting facilities (7 people per household) and around 200,000 indirectly In line with AF outcome 4	2 million
	Output 1.2. 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained and have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through awareness raising campaigns	Outcome 1.2. Strengthened awareness of flood and water risks and impacts and how to address these at community level and ownership of rainwater facilities built. In line with AF outcome 3	700,000
	Output 1.3 Awareness campaigns to increase knowledge in all target communities to reduce dumping of solid waste in drainage channels		100,000
	Total		2.8 million
Component 2 District / city level activities Enhance city and district-level water harvesting facilities in public buildings and on water storages in public gardens, develop district / city level	Output 2.1. (concrete) 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	Outcome 2.1. Increased adaptive capacity within the water sector at district / city level by identifying water management structures recommended on other critical interlinked structures through spatial planning In line with AF outcome 4	1.2 million
	Output 2.2. Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods	Outcome 2.2. Strengthened urban level government capacity to reduce climate change related flood and drought risks, also beyond city	500,000

[54] Recognizing that, due to the 18th amendment of the Constitution of Pakistan, it has a highly decentralized governance structure

spatial strategies as tool to assess climate change related floods, droughts and water scarcity to plan for and manage climate change risks and to strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens.	and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to assess climate change related floods, droughts and water scarcity to plan for and manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors	boundaries In line with AF outcome 2	
	Output 2.3. 50 government officials, including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans		100,000
	Total		1.8 million
Component 3 National level activities: Strengthen national-level capacity to guide / direct city-level development considering climate change and disaster risks and impacts, especially water scarcity caused by floods and droughts.	Output 3.1. 100 government officials (with an equal number of men and women) trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.	Outcome 3.1. Strengthened national level government capacity to reduce climate change related risks and impacts in urban areas In line with AF outcome 2	100,000
	Output 3.2. One National urban strategy focused on climate change / disaster risk reduction and with comprehensive gender mainstreaming developed One set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed	Outcome 3.2. Policies and plans improved to respond to urban climate change risks and impacts In line with AF outcome 7	383,014
	Total		483,014
5. Total components			**5,083,014**
6. Project/Programme Execution cost			533,576
7. Total Project/Programme Cost			5,616,590
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			477,410
Amount of Financing Requested			**6,094,000**

Projected Calendar:

Milestones	Expected Dates
Start of Project/Programme Implementation	06-2020
Project/Programme Closing	06-2024
Terminal Evaluation	09-2024

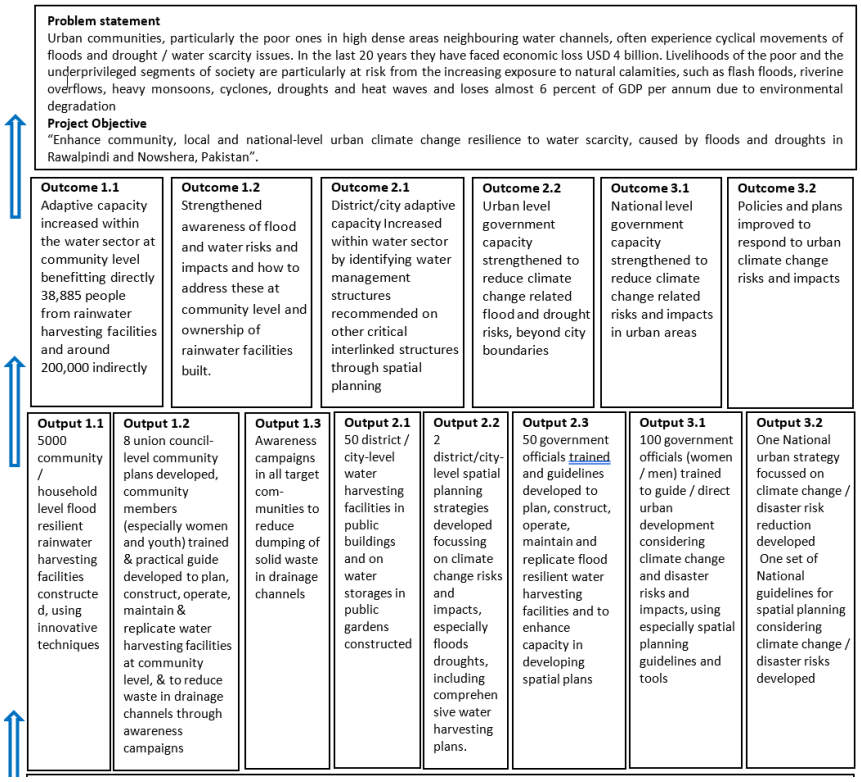
PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components

In order to achieve the overall project objective to “enhance community, local and national-level urban climate change resilience to water scarcity, caused by floods and droughts in Rawalpindi and Nowshera, the project combines horizontally and vertically interrelated activities: spatial planning strategies and concrete innovative interventions focused on reducing flood and water scarcity risks and impacts at the city and community level combined with the establishment of a national policy and regulatory framework for adaptation action at the urban level.

A specific approach to respond to the needs of women, children and youth will be taken while also considering the needs of other vulnerable groups. This is achieved through a ‘gender’ baseline approach which requires a data

baseline and the engagement of representatives of these groups in consultations– and where groups are formed and sustained throughout all stages of the project and through which communities participate in project implementation: in planning and executing activities and monitoring. Below, the rationale for the need of the different components is discussed.



Component 1: Community level activities : In line with AF outcomes 3 and 4 and Pakistan's government priorities (see section D), this component will focus on enhancing community and household-level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities (using innovative techniques) and to strengthen capacities to plan, construct, operate, maintain and replicate these. This component will also include raising awareness of the target communities to keep the water channels freer of solid waste to reduce their existing contamination levels as well as to reduce the risks of flooding caused by clogging of these channels due to the unchecked. This will be done through a detailed community level spatial analysis of flood and drought risks and impacts to inform and develop community level plans, to train community members (especially women and youth) and to develop practical knowledge management products. Rainwater harvesting techniques used will be a combination of traditional techniques improved with (inter-) national good practices to ensure clean / safe water. The focus area will be on poor and informal areas that are dependent on non-piped water sources, such as boreholes, that get contaminated by flood waters and poor drainage and sewerage systems, and areas where piped water supplies are technically available, but are inadequate or prone to being very poor quality.

This will be done through the following outputs: a) 5000 of community / household level flood resilient (i.e. elevated to not be affected by flood water, or protected and underground) rainwater harvesting facilities constructed, using innovative techniques. Annex 1 provides a full list of the designs to be used in the project and overlays them on a map of the target community, which shows which designs will be used in which areas.

The project is innovative because in the dense, highly urbanised areas the project will work in, land is very scarce, so the approach uses the buildings themselves as catchments. At present in Pakistan, RWH in urban areas is almost non-existent, but in this project, the public buildings will form a network that stores rainwater rather than discharging it. Rainwater that collects this way is then brought to a central water supply tank/plant where it will treat/filter and pump back into a distribution network, which people will have access to. The project is not high-

tech, but instead uses simple, low-cost technologies and local materials. This is where the innovation lies in the urban context in Pakistan.

Using RWH will increase total freshwater storage capacity and secure freshwater. Moreover, the design allows for future expansion of the network, as more households and buildings will ready to connect or install in same way to avail water storage during rains. The project is also designed to enhance artificial groundwater recharge, improve the quality and quantity of water in aquifers, reduce contamination from household effluents, and prevent runoff into sensitive ecosystems and avoid water stagnation on streets which can lead or contribute to urban flooding and stagnant water (which can be a breeding ground for disease vectors).
Rainwater harvesting is also an effective and eco-friendly method of reducing water usage in household, which will lead to reduced water bills. Making the switch to an eco-friendly rainwater harvesting system is neither complicated nor time consuming and will result in a wide range of benefits for the community. The system will also be sustainable, economical and beneficial even without changes in the climate. The system will also provide a model for other cities in Pakistan to replicate. The project will work with government at the district, provincial and national levels (in outputs 2.3 and 3.2) to promote the replication of the innovative approach taken by the project.

b) 7 Union Council and 8 Neighbourhood Council community plans developed, community members (especially women and youth) trained and practical guidelines developed to plan, construct, operate, maintain and replicate rainwater harvesting facilities at community level, c) A comprehensive awareness in the target communities to make them sensitized and to promote effective and sustainable solid waste management practices to reduce the amount of waste dumped in water channels.

The proposed activities are required to increase community-level awareness of adaptation to climate change induced flood and drought impacts and build capacity and ownership to develop, operate, maintain and replicate interventions in target communities, which is important for the sustainability of the project, as well as the appropriate response to local needs. The proposed concrete interventions (i.e. rainwater harvesting) are also needed to provide 'prove' for best practice / replication for effective innovative water harvesting techniques at the community and household level, which are almost non-existent in urban areas of Pakistan. Rainwater harvesting systems will be installed at households above flood water levels, allowing vulnerable (i.e. poor, informal, dependent on boreholes) households to access clean water directly. Major cause of water contamination causing health risks during floods in the target areas is waste being dumped in the drainage channels, leading to an increase of flooding and health issues since contaminated flood water enters boreholes and contaminate groundwater (see figure 11). A community-based model for managing and maintaining household-level rainwater harvesting facilities is proposed: women and youth groups will manage and maintain these facilities. Therefore, trainings will focus on these groups.

These activities will be implemented in all seven Union Councils in Rawalpindi and 8 Neighbourhood Councils in Nowshera. The locations of these areas are shown in the maps below. The typical technical designs to be used are presented in Annex 1[55]

Component 2: District / city level activities: In line with AF outcomes 2 and 4 and Pakistan's government priorities (see section D), this component will focus on enhancing district and city-level water harvesting facilities in public buildings and gardens/open spaces, develop district / city-level spatial planning strategies considering climate change risks and impacts, strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens/open spaces and to enhance capacity for developing spatial plans. Moreover, government capacities will be support district/city-led initiatives and activities to adapt to climate change.

This will be done through a Multi-Hazard Vulnerability and Risk Assessment (MHVRA), and a spatial analysis, which will be used to provide city and district officials with the most up-to-date information that will support improved urban and spatial planning in the long-run. In addition, activities under this component will construct 50 public rainwater harvesting facilities in or around public buildings in the two target cities.

[55] Note, all house structures will be reviewed by an engineer prior to works starting. The designs provided are based on field assessments by engineers and community consultations. The exact design of the structures may be different based on the full engineering inspection prior to works commencing

Component 2 consists of the following outputs: :a) 50 district / city-level water harvesting facilities in public buildings and gardens/open spaces constructed; b) Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors. c) 50 government officials, including 20 women[56], at the district/city level trained, guidelines developed to plan, construct, operate, maintain and duplicate flood resilient water harvesting facilities and to enhance capacity developing spatial plans. Proposed activities are required to sustain the interventions at district /city level and to provide 'proof' for best practice / replication for effective innovative water harvesting techniques in public buildings and gardens and spatial planning strategies at the district and city level.

Annex 1 also provides the technical designs to be used in the public buildings[57], a list of the names of the buildings, and a map of their locations. It should be noted that **all** public buildings and spaces have been nominated for the full proposal by provincial or city government agencies, on the understanding that written permission will be needed prior to works commencing. However, the selection of the buildings by government agencies signals their support for the selection of these buildings, and the process of getting official permission to commence works is currently underway, and will be received before any works can begin.

Component 3: National and Provincial level activities : In line with AF outcomes 2 and 7 and Pakistan's government priorities (see section D), this component will focus on strengthening national-level capacity to guide / direct city-level development taking into account climate change and disaster risks and impacts, especially floods and droughts. This will be done by improved policies and regulations that support reducing climate change urban-related flood and drought risks and impacts. This in turn will be done by developing a national urban strategy / policy and national guidelines for spatial planning strategies and building codes that take into account climate change and disaster risks and impacts, especially floods and droughts (but also heat stress and storms). Moreover, recommendations will be made about how to enforce the River Act[58] in terms of reducing people moving into high risk areas. This will be done through the following outputs: a) 100 government officials, including 50 women, , at the national and provincial level trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools. b) One National urban strategy focused on climate change / disaster risk reduction developed; c) One set of National guidelines for spatial planning considering climate change / disaster risks developed.

The proposed activities are required to guide local urban development from the national level and to sustain the project at the national level by anchoring best practices, lessons and approaches to national strategies and programmes. The set of National guidelines for spatial / urban planning will be developed using the approaches and practical lessons learned at the community and city level: at the community level detailed community level spatial analysis of flood and drought risks and impacts to inform and develop community level plans (output 1.2) will be conducted. This entails a detailed study of the flood and droughts impacts on the community and its assets and multiple sectors and how the community could be spatially planned best taking these risks into consideration. This information will also feed into city-level spatial strategies to be developed for the target cities (output 2.2). This will entail a strategy for spatial development for the whole city and beyond its city boundaries. Taking flood and drought risks and impacts on multiple sectors and other relevant risks and development, such as population growth, need for services and infrastructure, etc. into consideration. These guidelines can be used by municipalities and communities to develop these spatial strategies, but also as a decision-making tool to manage floods and droughts and other risks on people, assets, sectors, etc., through spatial planning in and beyond the cities. In both Rawalpindi and Nowshera for instance, the source of floods come from beyond city boundaries, which needs to be included in strategies to reduce flood impacts.

Relevant institutions, especially spatial planning-related, and how the project will build on these

Pakistan's 18th constitutional amendment in 2010 ensures that urban planning and design, land-use, urban development and disaster management are decentralised to the provincial level in Pakistan. As per section 87 of Punjab Local Government Act 2013, Municipal Corporations, Rawalpindi Municipal Corporation was established

[56] Note that 50% parity is not achieved due to the lack of women working in government at the sub-national level

[57] As with the rainwater harvesting facilities at private residences, all buildings will be re-assessed by the project engineer prior to construction starting.

[58] The Khyber Pakhtunkhwa Protection of River (Amendment Act) 2014

and operates with 5 departments; Planning, Regulations, Infrastructure, Finance and Services. The proposed project is particularly linked to the Infrastructure Department, Finance Department and the Services Department.

This project is directly linked to annual work plans of these departments and activities will contribute and will be linked at multiple institutional structures within the municipality. More specifically under this project, formulating city-level spatial planning strategies considering climate change risks and impacts, especially floods and droughts will contribute the planning department, enhancing its decision-making capacity. Building of rainwater harvesting facilities will be coordinated with and incorporated into the work plans of the Infrastructure and Service Departments. The project will ensure adequate representation from these departments in the training activities of government officials to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to apply guidelines on spatial planning strategies in developing spatial plans.

However, as noted in Part III, Section A, Rawalpindi Municipal Corporation has limited capacity to manage the project, and as such it will be a beneficiary, rather than an executing agency under the project.

Rawalpindi Development Authority (RDA), which is mostly responsible to perform planning functions, complementing the Rawalpindi Municipal Corporation and Rawalpindi Water and Sanitation Agency (RWASA), which complements water and sanitation functions in Rawalpindi Municipal Corporation are other key institutional structures, which will benefit from the project actions.

Governance arrangements can appear complex in Pakistan. The Ministry of Climate Change is the national designated authority in Pakistan to the Adaptation Fund and is responsible for policy and planning work regarding climate change, including reporting to the UNFCCC. The National Disaster Management Authority (NDMA) was established through an Act of Parliament as an executing arm of the National Disaster Management Commission, which is headed by the Prime Minister of Pakistan. In each province there is a Provincial Disaster Management Committee (PDMA). Urban management in Rawalpindi is primarily the responsibility of the Rawalpindi Municipal Corporation, while in Nowshera, urban governance and management is split between the Khyber Pakhtunkhwa Urban Policy Unit and Nowshera Municipal Committee.

Technical interventions of component 1 and 2
Household level and district/city level water harvesting techniques

While the practice of rainwater harvesting is limited in Pakistan, UN-Habitat has had a positive experience of it in other areas, for example as a response to the 2005 Kashmir Earthquake (Figure 6, below). Among the keys to success in Habitat's experience is the need to train local people in the operation and maintenance of the systems (whether at household or community level) as a means to increase ownership and keep operating costs down. With water scarcity becoming an increasingly severe issue across Pakistan because of climate change and deeper groundwater, rainwater harvesting systems also have the potential to scale up commercially, if their success can be more widely demonstrated. Moreover, in some locations in Pakistan, rainwater harvesting has been written into local by-laws. In Lahore, for example (not a focus of this project), rainwater harvesting is mandatory per the building code, while in Islamabad, buildings with a greater area than 400 square yards must have provision for RWH facilities.

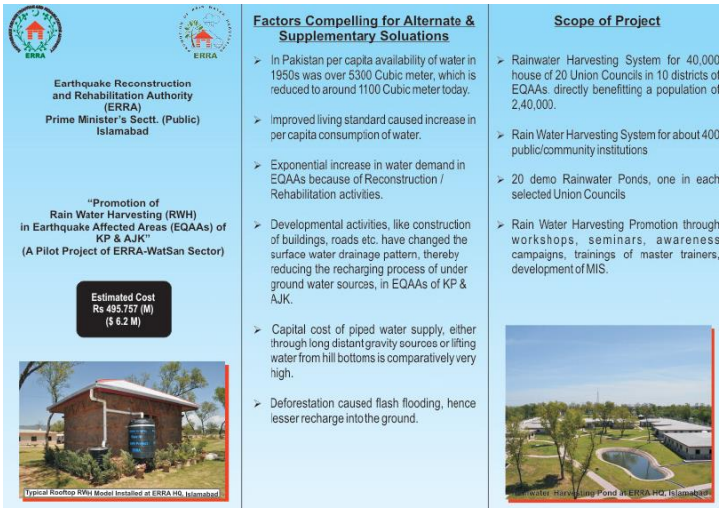


Figure 6 - RWH designs used elsewhere by UN-Habitat in Pakistan

UN-Habitat has conducted a willingness to pay survey and found that there are numerous pricing structures for water currently in Rawalpindi and other parts on Pakistan. Where households use metered connections, tariffs range from 30 to 50 Rupees per 1,000 gallons, while for commercial connections the rate is 50 to 100 rupees per 1,000 gallons[59]. Unmetered connections are informal and therefore hard to measure. Some people pay per connection, while others pay per gallon. During times of flood – when water is not available, or drought, people report that they have paid up to 4,000 Rupees per 1,000 gallons from water from tankers provided by private distributors.

The willingness to pay study focused on low and lower middle-income households from a variety of locations and from a variety of income sources. The survey found that people would be willing to pay a little more than their current tariff, on average, and, in some cases, up to 300 rupees per 1,000 gallons, ***if*** the water they were being provided was guaranteed to be clean, reliable and available in the home[60].

The rainwater harvesting tanks have been designed to be operational during the rainy and dry season, as well as providing filtration. This ensures that the tanks will be used year-round, without idle time. The systems are also designed for ease of maintenance, which makes it simpler for communities to manage the operation and maintenance of the systems. A simple, graphically illustrated maintenance guidance manual will be provided to each household, which will be used as a basis to train people on public buildings and on water storages in public gardens with orientation at the time of installation. Moreover, a community-based model for managing and maintaining household-level rainwater harvesting facilities is proposed that enables women and youth groups to engage in the management and maintenance of the facilities. Design details of the RWH units are provided in Annex 1.

Even at the community level, analysis shows that the housing types and construction is appropriate. Almost 97% of houses in Rawalpindi have reinforced cement concrete roofs[61]. In Nowshera, 60% have reinforced concrete roofs while a further 31% have wood or bamboo roofs, which UN-Habitat's systems are designed to work with[62].

B. Economic, social and environmental benefits

The fundamental benefit of the project is to enhance community, local and national-level urban climate change resilience to water scarcity, caused by floods and droughts through water harvesting measures. Further, the project will produce co-benefits in terms of water-related-livelihood protection and income security, improved quality of human life, community capacity-building, women and youth empowerment, and reduction of environmental degradation, as follows:

[59] UN-Habitat, UNICEF and USAID, Willingness to Pay for Wash, p.8
[60] Ibid, p.25
[61] Pakistan Bureau of Statistics (2016) Pakistan Social and Living Standards Measurement Survey, p.351
[62] Ibid, p.357

Table 9: Expected economic, social and environmental project benefits

Type of benefit	Baseline	With/after project
Economic	Climate change is already leading to economic losses and inefficiency of water collection caused by floods and droughts, which impact households, assets, markets, boreholes, etc.	• Component 1: a) Accessing water for household consumption puts a daily strain on households' productive time in general and that of women and children in particular. With improving this access, households in general and women and children in particular allocate the saved time for more economically productive activities like livelihood and education, thus bringing positive changes in household economies. b) Water-borne diseases increase the health cost burden for poor households on one hand and robbing them of productive time on other. A reduction in the burden arising from poor health due to easier access to clean drinking water, especially the installation of water purification systems within the rainwater harvesting facilities will bring positive economic benefits to poor households. ;c) Impacts of recurrent flooding is exacerbated by clogged channels by solid waste and affect business activities in the target areas as well as the cities' economic force as these business activities are located in the cities' main commercial centers. By properly addressing flood management in community plans, and by conducting awareness campaigns to reduce clogging of channels through waste that causes groundwater contamination and floods these business activities will also be positively impacted thus contributing to community and city scale economies. ;d) Rainwater harvesting is known to be a method for economically efficient use of natural resources.; e) Rainwater harvesting will open new business and employment opportunities; Year-round water supply through project will reduce cost spend for buying water during dry season • Component 2: a) The strategies will contribute in addressing the recurrent localized and large-scale flooding events in the target districts. As highlighted in the concept note, some of the main business centers and activities are concentrated in areas which are vulnerable to flooding. Thus, the district/city scale plans and strategies will positively contribute in climate resilience of these business activities bringing many economic benefits to community and city scale economies.; b) The rainwater harvesting will promote economically efficient use of natural resources at city/district scale. Additionally, it will also support the economic benefits of component 1 as rainwater harvesting facilities in public buildings and gardens are accessible by the public and for public use; c) Training of government officials on guiding development to plan, construct, maintain and replicate flood resilient water harvesting facilities ensures economic sustainability of the project's outcomes beyond the project's timeframe. Further, these in-house trainings reduce the cost for replication of the concrete intervention and ensures sustainability of institutional knowledge by also strengthening capacity in developing spatial plans • Component 3: a) Successive flood induced disaster events in Pakistan have shown, that poorly resourced district, provincial and federal governments have to slice regular development allocations (mostly for education and health sectors) to make available funds for emergency relief, rescue and infrastructure rehabilitation. Effective plans and strategies for disaster risk reduction and management and climate resilience, as proposed in the concept note, will positively contribute in checking these trends and will in turn reduce pressure on meager development allocations. B) The rainwater harvesting and climate resilience as proposed in the concept note will contribute to promote a culture of economically efficient use of natural resources and reaping economic benefits from climate adaptation and resilience at national scale.
Social	Climate change is already leading to negative social impacts, especially caused by floods and droughts, leading to rural – urban	• Component 1: a) Consistent vulnerability to floods exacerbated by clogged channels has caused a general sense of insecurity in the target households and communities. By raising awareness on proper waste disposal and the consequences of clogged channels during reoccurring floods, the community can restore a sense of control over climate change induced impacts and will feel empowered. b) Scarcity of clean drinking water causes greater disease levels and generally reduces wellbeing. The project will increase access to safe water and thus reduce incidence of disease and improve general wellbeing. c) The considerable time spent, especially for poor women and children, in hauling water, compromise their leisure opportunities and is a social burden. By easing this burden, the project will contribute in bringing more leisure time for them; d) Community consultations have shown that water related disputes are common in target areas. These disputes, in some cases, have sparked violence. By addressing the water scarcity, the project will address this issue and thus will contribute in strengthening neighborliness and community cohesion. e) Continuously seeking favors from neighbors and water providers on part of poor

	migration and social tension and incoherent developme nt.	households to access water causes them to compromise on their self-esteem, dignity and manifests unfavorable power-dynamics. The project will bring them this socio-psychological relief; f) The project will also contribute in strengthening the spirit of self and mutual help and sufficiency among the target communities. With them being better mobilized and organized, the target households and communities will be in a much better position to negotiate for their water, development and protection to disaster rights with the authorities and service providers. Component 2: With introduction of participatory, gender and pro-poor sensitive plans and strategies at city and district scale, the component will contribute in amplifying all social benefits anticipated by the project interventions at community level as mentioned above. With the proposed approach, the project will contribute in introducing a new way of planning with wider participation of communities and stakeholders in a gender and pro-poor sensitive manner. This will in turn contribute in making planning a tool for social justice. • Component 3: The project's three-tiered planning approach: community, city/district and provincial/national is designed to amplify community learning at all tiers of governance and to develop an integrated and mutually supportive planning approach. It is anticipated that with the introduction of much needed provincial and national level urban development plans, policies and strategies which are gender, pro-poor, disaster and climate sensitive will contribute to rapid urbanization of Pakistan into a social, economic and environmental opportunities
Environ mental	Climate change is already leading to negative environme ntal impacts, especially differences in temperatur e and precipitatio n, leading to floods and droughts, which in turn leads to erosion, deforestati on, etc.	• Component 1: Currently the target communities are suffering from a complex nexus between climate change, floods, water scarcity and contamination, environmental degradation and human health. The community level activities including mobilization, sensitization, introduction and promotion of water harvesting as well as awareness about impacts of waste on floods and health will bring many environmental benefits to communities including: better sanitation and hygiene conditions, reduced pollution levels, environmentally efficient use of natural resources and improved sensitization towards climate and environment. The project aims to directly contribute in reducing pressure on groundwater which resulted in drastic lowering of water tables. • Component 2: The city/district level plans and strategies will contribute in better management of urban wetlands and their environmentally sustainable integration into larger urban development interventions. District/city scale rainwater harvesting facilities in public buildings and gardens will strengthen the environmental benefits under component 1 with a larger scale number of beneficiaries per intervention having greater impacts on restoring depleting groundwater tables, addressing water scarcity and provide safe drinking water. Further, district/city level spatial planning strategies will contribute in better management of urban wetlands and their environmentally sustainable integration into larger urban development interventions. This will contribute in addressing environmental challenges associated with flooding especially its impact on built and natural environments. • Component 3: The national and provincial level strategies and plans will have environmental sustainability as cross cutting theme besides gender and pro-poor sensitivity. The proposed plans, policies and strategies that the project will facilitate to develop will contribute in turning rapid urbanization of Pakistan from an environmental and climate challenge to a climate adaptation and environmental sustainability opportunity.

Approach to ensure equal distribution of benefits to the most vulnerable: In Annex 4, a gender approach and baseline is included.

C. **Cost effectiveness**

The National Economic & Environmental Development Study (NEEDS) shows that the average cost of adaptation to flood disasters in Pakistan ranges between US$ 2.0 - 3.8 billion per annum, depending on the frequency and intensity.[63] Through promoting spatial planning and protective infrastructure, costs associated with damage and loss, especially caused by floods will be reduced, especially if this spatial model will be replicated in other settlements in Pakistan. UN-Habitat analysed both individual proposed interventions and the total package of proposed interventions from a cost-perspective point of view (besides other activity selection criteria related to sustainability and potential environmental and social risks) to maximize the beneficiaries reached and impacted.

[63] Pakistan's INDC, p14

The reason is that community / household level flood-resilient water harvesting facilities will provide direct benefits to the most vulnerable people in the most vulnerable communities and because it will allow the testing of community / household-level innovative techniques that can be replicated elsewhere.

Cost-effective rationale component 1:

Enhancing community- and household-level flood resilient rainwater harvesting facilities is a cost-effective way of supplying clean water in areas which experience droughts and where drinking water (from boreholes) is contaminated by floods and poor drainage and sewerage systems. As these conditions often occur in urban poor areas, the replication of the intervention through innovative techniques will benefit the most vulnerable. Flood can influence surface water quality because the rainwater picks up surface materials, soils, wastes and other pollutants in runoff from slopes, open grounds, lawns, farms, streets, factories, and other areas into the receiving water bodies. Contamination of large water bodies or groundwater through infiltration of flood water through pumps / wells, is often much higher during and immediately after rainstorms. Rising temperature increase the rate of evaporation of water into the atmosphere, in effect increasing the atmosphere's capacity to "hold" water. Increased evaporation may dry out some areas and fall as excess precipitation in other areas.[64] This is the case in both target communities.

The alternative water supply options are primarily through boreholes and piped water. The risk of water contamination still exists with boreholes as polluted water can seep into them. Regarding piped water, this could be designed in a flood resilient manner (e.g. pipes above flood levels or reinforced pipes), but installation is a challenge in the dense and informal target areas and management would not be done by the direct beneficiaries, which could lead to unforeseen high user costs. Therefore, rainwater harvesting is the remaining cost-effective option to provide clean water (which is a priority in target areas (see Table 6 and 7) to people that have no alternative option than to use contaminated groundwater (through boreholes) or to collect water from other areas of the city (see Figure 11 as example) due to high poverty levels.. Community-level capacity building is proposed to ensure ownership and sustainability of the project and proposed activities, including establishing operation and maintenance arrangements, which in turn will avoid costs when infrastructure is not used and maintained properly.

Cost-effective rationale component 2:

District/city-level flood resilient rainwater harvesting facilities in public buildings and gardens/open spaces is a cost-effective way of supplying clean water for the public as open facilities especially in areas experiencing droughts and contamination of drinking water by climate change-induced floods and poor drainage and damaged sewerage systems. Alternatively, new boreholes, wells and flood-resilient piped water infrastructure could be built, but as seen in the past groundwater of boreholes and wells is contaminated by floods, contaminated water run-off, leaking sewage systems and waste-clogged channels. Moreover, any system that relies on ground water will be ineffective in adapting to climate change because of the rapid depletion of ground water that is being experienced in the target areas.

Building flood-resilient piped water infrastructure in a highly dense urban settlements will be a very cost-intensive intervention with a less favourable cost-beneficiary ratio. Additionally, construction of piped water systems run a greater risk of causing resettlement and eviction in informal and urban poor areas. Land use planning strategies are considered to be one of the most cost-effective ways to understand and respond to climate change risks and vulnerability, especially to avoid future development in risk areas and cost associated with this potential risk, such as destroyed houses and assets.

Alternatively, infrastructure interventions, such as construction of drainage channels, resilient assets and houses in areas at risk of floods could be proposed, but this would be costlier in the dense target areas as such actions lead to land readjustment and resettlement, temporary dislocation of families (during construction) and larger investments for municipalities which could not come from annual revenue. From a sustainability point of view, capacity building of government institutions will improve the long-term impact of the project, including associated avoided costs related to floods and drought impacts. Government-level capacity building is proposed to institutionalise innovative technologies for rainwater harvesting, ease and coordinate replication and sustainability of the project and proposed activities, including establishing operation and maintenance arrangements, which in turn will reduce costs for maintaining and monitoring intervention.

Cost-effective rationale component 3:

[64] Mosley, Luke M. "Drought impacts on the water quality of freshwater systems; review and integration." *Earth-Science Reviews* 140 (2015): 203-214.

Similar to land use planning strategies, at the district/city level, the development of National strategies to reduce flood and drought impacts, especially when considered comprehensively, in urban areas, can be considered to be a cost-effective way to avoid flood and drought-related costs throughout the country – it will allow government institutions to make strategic choices, also from a cost-effective point of view. The proposed AF Project will play a catalytic role in triggering paradigm shift by incorporating climate change concerns into the national and regional urban development strategies and plans. In Pakistan for the time being there is no urban development policy. Most of the urban development is dominated by fragmented projects.

Table 10: Cost-effectiveness analysis of proposed interventions

Interventions / activities		Target Community	Estimated nr of beneficiaries	Estimated cost (US$) and cost-effectiveness of direct beneficiaries
Priority investments	**Detailed activities**			
Component 1 Community level activities:	**Output 1.1:** (concrete): 5,000 of community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	Rawalpindi: especially UC 4,5 and 6, but also 1,2, 12 and 37 – Nowshera – 8NCs - Dagi Khel, Allah Yar Khel, Nawan Kali, Shahmeer Gari, Bara Khel, Behram Khan Khel, Mana Khel, Kabul River	Direct: 38,885, 19,443 women Indirect: around 222,200	USD 51 pp
	Output 1.2: 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained and have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting facilities at community level, and to reduce waste in drainage channels through awareness raising campaigns	Rawalpindi: especially 4,5 and 6, but also 1,2, 12 and 37 Nowshera, 8NCs - Dagi Khel, Allah Yar Khel, Nawan Kali, Shahmeer Gari, Bara Khel, Behram Khan Khel, Mana Khel, Kabul River	200,000	USD 4 pp
	Output 1.3: Awareness campaigns to increase awareness in all target communities to reduce dumping of solid waste in drainage channels			
Component 2 District / city level activities	Output 2.1. (concrete: 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens/open spaces constructed	Rawalpindi especially UC 1,2, 4,5, 6, 12 and 37 whole of Rawalpindi-Nowshera, 8NCs - Dagi Khel, Allah Yar Khel, Nawan Kali, Shahmeer Gari, Bara Khel, Behram Khan Khel, Mana Khel, Kabul River	Direct: 150,000	USD8 pp
	Output 2.2: Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors	Rawalpindi City Nowshera City	1.2 million 200,000	USD 0.00009 pp
	Output 2.3: 50 government officials trained, including 20 women and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity developing spatial plans	Rawalpindi City Nowshera City	Direct: 50 (20 women) Estimation of indirect beneficiaries through 'training of trainers' model and iteration/replication of trainings to be made	USD 400 pp for training only which includes at least 4 reiterative modules of trainings.

Component 3 National level activities:	**Output 3.1:** 100 government officials (with an equal number of men and women) trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.	Concerned federal and provincial government officials	Direct: 100 (50 women) Estimation of indirect beneficiaries through 'training of trainers' model and iteration/replication of trainings to be made	USD 300 pp for training only which includes at least 3 reiterative, high level and subject specific modules of trainings conducted by experts
	Output 3.2: One National urban strategy focused on climate change / disaster risk reduction and with comprehensive gender mainstreaming developed One set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed	Federal and Provincial Governments	Not relevant	Not relevant

Altogether, the project will be cost-effective by: a) Avoiding future costs associated with damage and loss due to climate change impacts (especially floods and drought) and to ensure the interventions are sustainable; b) Efficient project operations because of 'in-house' technical support options and capacity building expertise and because of direct partnering with government departments, civil society, lowest tiered/community level government institutions and universities/academic institutions (thereby building their capacity as well as reducing costs);c) Community involvement through community capacity building and participatory planning, execution and monitoring of the project. D) Selected technical options based on cost-, feasibility and resilience/sustainability criteria

D. **Consistency with national or sub-national strategies**:

With its highly sensitive ecosystems and recent history of frequent natural disasters, Pakistan has placed great emphasis on climate change policy, planning and implementation. Pakistan's response has been closely aligned with its strategies for sustainable development, environmental protection, achieving the sustainable development goals (SDGs) (to which Pakistan's "Vision 2025" is linked) and objectives of the Convention on Climate Change. Adoption of the National Climate Change Policy (2012) and National Disaster Risk Reduction Policy (2013) provided a comprehensive framework for policy goals and actions towards mainstreaming climate change, especially in economically and socially vulnerable sectors of the economy.

A follow-up to these policies was the launch in 2013 with the Framework for Implementation of the Climate Change Policy (2014-2030), which outlines the vulnerabilities of various sectors to climate change and identifies appropriate adaptation and mitigation actions. The Framework document was developed to serve as a catalyst for mainstreaming climate change concerns into decision-making at national and sub-national levels and to create an enabling environment for an integrated climate-compatible development process. Inter alia it aims to address SDG target 6.6 on "protect and restore water-related ecosystems" by 2020. International communication to the UNFCCC followed with the Nationally Determined Contribution in 2016. Most recently, the National Flood Protection Plan (2016) and National Water Policy have been launched (2018), which propose actions for (climate change related) flood management, recognize water scarcity as an emerging (climate change related) priority and propose rainwater harvesting as adaptation measure.

The National Climate change Act was passed in 2017. The act establishes the National Climate Change Council, chaired by the Prime Minister, giving climate change renewed high-priority in the governance and decision-making structure of Pakistan. It also established the Pakistan Climate Change Fund, which may, in the future, provide an important national financing vehicle for climate change. In 2019, as this proposal was being prepared, NDMA published the National Disaster Response Plan 2019. The Plan supersedes the first edition that was published in 2010, and builds on the 2012 National Disaster Management Plan. This project has been designed to align with above national, sub-national and sectoral development policies, strategies and plans on development, climate change and disaster resilience.

To respond to the most current government priorities, this project is especially aligned with the National Flood Protection Plan and National Water Policy. The disaster management plans of these cities do mention climate change. The AF project will address this situation by facilitating concerned institutions to develop climate and DRR sensitive spatial and sectoral plans. It is pertinent to mention that AF project's priorities are aligned with broader national plans and policies **. Table 11:** Summary of the main climate change related policies and national and sectoral policy priorities that align with this project

Table 11 - Policy Alignment

Policy/Document	Year submitted/ ratified	Policy priorities that align with this project

Climate change priorities		
Pakistan NEEDS study[65]	2011	Adaptation assessment: Water resources (flooding and water demand): a) Flood plain management along the flood corridor to ensure minimum damage to human lives and infrastructure during floods. b) Climate proofing of future infrastructure investments to cater the threats of climate induced disasters such as floods.
National Climate Change Policy[66]	2012	The National Climate Change Policy states a number of priority areas: **1) Water resources 2)** Agriculture and livestock,3) **Human healt**h 4) Forestry. 5) Biodiversity 6) **Disaster preparedness 7) Socioeconomic issues (poverty, gender)**
Framework for implementation of the climate change policy (2014-2030)[67]	2013	Relevant sectors, objectives and strategies: **Water sector:** Objective 1: Conserve water - Strategy 1.2. Local rainwater harvesting measures Objective 3: Integrated water resource management, Objective 6: Develop resilient water infrastructure- Strategy 6.1. Water storage capacity, Strategy 6.2. Irrigation infrastructure **Disaster preparedness sector:** Objective 3: Develop integrated hazard mitigation strategies; Objective 4: assess future likely flood levels in Indus river system; Objective 5: natural disaster information and early warning; Objective 6: develop resilient infrastructure **Health sector**: Strategy 1.4. Clean drinking water **Urban planning sector:** Objective 1: Introduce innovative town planning; Strategy 1.4. Hazard mapping and zoning
Nationally Determined Contribution[68]	2016	NDC focuses primarily on mitigation issues, but outlines several relevant adaptation priorities: **Short term**- Strengthen adaptation planning capacity, strengthen disaster risk management capacit**y; Medium term**: Improving irrigation, Water resource management, Climate resilient infrastructure
National development priorities		
National Sustainable Development Strategy: Pakistan's pathway to a sustainable & resilient future.	2012	NSDSS has primary focus on promoting 'green economy' and outlines environment sustainability as a key pillar. Under that it focuses on Preparing for climate change and its accompanying uncertainties through comprehensive adaptation and mitigation planning and concrete implementation measures: Improve environmental governance at all levels and enhance community-level environmental management by strengthening the capacity of union councils, tehsil municipal administration and district governments (local level).Undertake strategic adaptation responses at policy, management / operational and community levels with a focus on facilitating bottoms up adaptation with maximum localized ownership. The inevitable climate adaptation response should be driven by a focused adaptation program and plan.
Pakistan Vision 2025[69]	2014	Blueprint for growth (recognizes global warming and climate change as one of the priority areas): In the physical domain, the major threat is posed by climate change, associated with increased frequency and intensity of floods and hurricanes, prolonged droughts and growing water stress shift of disease vectors, and the frightening possibility of the melting of the Himalayan icecap (page 16).
Sectoral priorities		
National Environmental Policy	2005	It provides an overarching framework for addressing the environmental issues facing- Pakistan, particularly pollution of freshwater bodies and coastal waters, air pollution, lack of proper waste management, deforestation, loss of biodiversity, desertification, natural disasters and climate change
National Disaster Risk Reduction Policy[70]	2013	Relevant Policy objectives: 2.4.1. Creating an integrated national capacity to identify and monitor vulnerability and hazard trends including potential climate change impact 2.4.3. Strengthening an integrated disaster preparedness and response capacity from the local to the national level 2.4.4. Promoting development planning that considers and addresses disaster risks alongside environmental and climate change concerns 2.4.5. Strengthening the structural and non-structural resilience of key infrastructure and lifelines in Pakistan 2.4.6. Strengthening capacity at national and provincial levels to facilitate and provide support to the implementation of DRR policies, plans and programs across sectors and in high-risk areas 2.4.7. Strengthening Local Level Risk Reduction capacity focusing upon communities, and supportive linkages with Union Councils, tehsils and districts 2.4.8. Ensuring DRR is systematically integrated into recovery and reconstruction programming, "building better, safer and stronger" and informing DRR mainstreaming in general
National flood protection plan[71]	2016	Relevant planning strategy: The plan recognised the National Water Policy as an important

[65] https://unfccc.int/files/adaptation/application/pdf/pakistanneeds.pdf

[66] http://www.gcisc.org.pk/National_Climate_Change_Policy_2012.pdf

[67] http://www.gcisc.org.pk/Framework%20for%20Implementation%20of%20CC%20Policy.pdf

[68] http://www4.unfccc.int/ndcregistry/PublishedDocuments/Pakistan%20First/Pak-INDC.pdf

[69] http://fics.seecs.edu.pk/Vision/Vision-2025/Pakistan-Vision-2025.pdf

[70] http://www.ndma.gov.pk/Documents/drrpolicy2013.pdf

		strategy to be implemented in parallel: The planning strategy has thus following relevant element: Reducing susceptibility to damage: Flood Forecasting and Early Warning
National water policy[72]	2018	Most relevant policy objectives: 2.2. Augmentation of the available water resources of the country through judicious and equitable utilization via, conservation and efficient use; 2.3. Improving availability, reliability and quality of freshwater resources to meet critical municipal, agricultural, energy, security and environmental needs; 2.4. Improving urban water management by increasing system efficiency and reducing non-revenue water through adequate investments to address drinking water demand, sewage disposal, handling of wastewater and industrial effluents; 2.7. Providing food security and expanding water availability to help adapt to climate change, population and other large-scale stresses; 2.12. Flood management to mitigate floods and minimize their damages; 2.13. Drought management with emphasis on long term vulnerability reduction; 2.15. Promoting appropriate technologies for rainwater harvesting in rural as well as urban areas; 2.21. Profitable use of flood water towards promotion of local irrigation practices; 2.27. Climate change impact assessment and adaptation for sustainable water resources development and management; Most relevant priorities: 3.3. Leveraging Technology: Adoption of new technologies is urgently needed Relevant water conservation needs: 7.3 It is recognized that the large annual and seasonal variability of fresh-water availability makes it necessary to: 7.4. The Water Conservation Plans shall include: Adoption of rainwater harvesting technology and Adoption of water conservation techniques/technologies at the farm level.
National Sanitation Policy	2006	- The sanitation policy covers solid waste management, to which this project will align
Sub-national priorities		
Rawalpindi and Nowshera Development and Strategic Plan		- The project is in line and will ensure consistency with: Annual plans, Structure plan, Local plans. Sectoral plans
The flood management plan and district disaster risk reduction plan of Rawalpindi	2009	The following areas are identified as being most vulnerable to floods: - Dhoke Najju, Zia ul Haq, Colony New Phagwari Mohallah, Raja Sultan, Dhoke Ratta, Ratta Amral, Gawalmandi, Javed Colony, Chamanzar, Tipu Road. Dhoke Ellahi Bakhash, All these localities are located along Lai Nallah.
Nowshera district disaster risk reduction plan	2014	Priority Areas: a) Established the institutional and legal system for disaster management ; b) Prepare disaster management plans at various levels ; c) Conduct multi-hazard, vulnerability and risk assessment; d) Establish multi-hazard early warning and evacuation systems; e) Promotion of Training, Education and Awareness in relation to DM ; f) Strengthen programs on disaster risk reduction at local level ; g) Infrastructure development for disaster risk reduction; h) Mainstreaming disaster risk reduction into development ; i) Establish District Emergency Response System; j) Capacity Development for Post Disaster Recovery
The Khyber Pakhtunkhwa Protection of River (Amendment Act)	2014	Provision on: Population residing in areas neighbouring River Kabul and flood protection measures for River Kabul; Physical works and developmental work within 200ft from the slope of the rivers or their tributaries - Disposal of solid or hazardous waste or other substances specified and notified by Government (directly or indirectly) into the rivers: Obligation for governmental land-use and zoning plans for catchment area of rivers and their tributaries
Other relevant policies, plans and acts		
The Climate Change Act	2017	Primarily establishes roles and responsibilities in the government, which are noted by this proposal and its management structure (Part III, Section A), and establishes the legal basis for the creation of the Pakistan Climate Change Fund
Pakistan National Disaster Response Plan	2019	Outlines roles and responsibilities among government (especially at the national level) which this proposal also reflects, and highlights the increased importance of a multi-hazard approach to response, which is reflected under component 2 of this project, and the activities around the MHVRA (see Part III, Section E)

[71] http://mowr.gov.pk/wp-content/uploads/2018/05/National-Flood-Protection-Plan-IV-NFPP-IV-1.pdf
http://www.lead.org.pk/lead/Publications/Visual%20Guide%20National%20Flood%20Protection%20Plan-IV.pdf

[72] https://drive.google.com/file/d/17VO_3ysV5s-dEmMeAfKlOxCnV5yBFvlq/view

E. Compliance with relevant national technical standards in compliance with the Environmental and Social Policy of the Adaptation Fund

Environmental and social impacts assessment requirements and procedures Promulgation of an Ordinance in 1983 followed by the Pakistan Environmental Protection Act, 1977, made EIA a legal requirement. For enabling the project proponents in designing EIAs, the Pakistan Environment Protection Agency (Pak-EPA) first developed an elaborate form, and later completed guidelines and regulations. Presently, EIAs are conducted for all large developmental projects. Devolution of environmental matters to the provinces has caused uncertainty about the Environmental Act and the role of Pak-EPA.[73]

Projects Requiring an EIA (Screening) Section 12 of the Federal and Punjab Acts require filing of an EIA for projects that are likely to cause adverse environmental effects. The term "adverse environmental effect" means impairment of, or damage to, the environment and includes: (a) impairment of, or damage to, human health and safety or to biodiversity or property; (b) pollution; and (c) any adverse environmental effect as may be specified in the regulations (§ 2 (i)). Primarily, the statutes require Rules/Regulations to provide for lists of projects requiring an IEE/EIA. As per the requirement of the Statutes, the Regulations 2000 (Regulation 3 and 4, Schedule I and II) list categories of projects requiring either IEE or EIA. For an overview see annex 1 Under this regulation, water supply and treatment systems (See Annex 1 and section G) require an IEE- Regulation 3. Proposed rainwater harvesting facilities are stand-alone, small-scale facilities with purifying technology and do not fulfil the requirements of water supply or treatment systems.

Because this official rules and regulations regarding EIAs are don't explicitly state that this project does not require an EIA, the proposal development team contacted the Pakistan Environmental Protection Agency[74] who confirmed verbally and in an email that this project **does not** require an EIA because this is a development (as opposed to a private investment) project that has been designed with compliance with the Environmental and Social Policy of the Adaptation Fund that does not have any impacts on the natural environment. However, despite this, an ESIA, in compliance with the Environmental and Social Policy has been prepared, and is summarised in Annex 5 (Table 5.9). The above assurances from the government have been provided to demonstrate that no additional or duplication process of ESIA is required to meet Provincial or National laws in Pakistan.

Table 12: Overview of relevant national technical standards and how the project complies to these

Expected concrete output/intervention	Relevant rules, regulations, standards and procedures	Compliance, procedure and authorizing offices
Output 1.1. (concrete) 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	- Minimum drinking water quality standards proposed by WHO - Applicable national and provincial drinking water quality standards - Building byelaws applicable in Rawalpindi and Nowshera - Applicable standards and guidelines by Rawalpindi Water and Sanitation Agency (RWASA) and Tehsil Municipal Administration Nowshera - Guidelines as enshrined in National Drinking Water Policy	The project team will ensure due consultation with MoCC, Provincial Environmental Protection Agencies (EPAs) of Punjab and KPK Rawalpindi Water and Sanitation Agency and Tehsil Municipal Administration of Nowshera besides involving respective communities to select appropriate household level water harvesting technologies. In the due course, input will also be taken from National Disaster Management Authority and respective provincial and district disaster management authorities to incorporate resilience to disasters and climate change elements in this intervention. The community level interventions will be steered by Shehersaaz by taking respective Union Councils and community-based organizations on-board.
Output 1.2. 15 union/neighbourhood council-	- Punjab Local Government Act and Khyber Pakhtunkhwa Local Government Act call for preparation	Integrated union council level plans will be developed with active participation of elected representative of concerned union councils

[73] http://cmsdata.iucn.org/downloads/niap___eia_handbook.pdf

[74] The Pakistan Environmental Protection Agency is the government department responsible for Environmental Impact Assessments under the Pakistan Environmental Protection Act, 1997

level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained and have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through awareness raising campaigns	of Union Council Level development plans. The prescribed requirements for preparation of these plans will be followed. - NDMA's guidelines for working with vulnerable communities and groups. - Planning guidelines from Punjab and Khyber Pakhtunkhwa Planning and Development Departments - Applicable national and provincial laws - Annual Development Plans of Rawalpindi Water and Sanitation Agency, Rawalpindi Municipal Corporation, Nowshera Tehsil Municipal Administration	and their administration; officials and elected representatives of Nowshera and Rawalpindi's municipal corporations; target households and their community-based organizations. This process will be steered by Shehersaaz with input from Project Steering Committee. All efforts will be made to keep these UC level plans aligned with Annual Development Plans of Rawalpindi WASA, Rawalpindi Municipal Corporation, and Nowshera Tehsil Municipal Administration. NDMA's Children and Gender Cells guidelines, where applicable, and Community Based Disaster Risk Management Guidelines will also be followed to ensure the participation of men, women, elderly, children and youth, transgender and members of religious and ethnic minorities.
Output 1.3 Awareness campaigns to increase knowledge in all target communities to reduce dumping of solid waste in drainage channels	- The relevant provisions on community awareness raising as enshrined in National Climate Change Policy; National Water Policy; National Sanitation Policy; National DRR Policy; National Disaster Management Plan	A comprehensive awareness campaign will be designed with input from target communities, experts, local government representatives and officials. Culturally sensitive and appropriate behavioural change communication techniques will be employed targeting all segments of the target communities with the principle—leave no one behind. The campaign will be steered by Shehersaaz with active engagement of community groups, civil society organizations, concerned Union Council elected representatives and officials; WASA Rawalpindi and TMA Nowshera.
Output 2.1. (concrete) 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	National and Provincial Environmental Protection Acts , Applicable national and provincial laws for water supply schemes, Land use / master plans of Rawalpindi, Nowshera and Islamabad , Relevant water sector development plans and strategies of federal government, Punjab, Khyber Pakhtunkhwa, and Rawalpindi and Nowshera Districts.	By taking into account legal and planning requirements; detailed assessments and feasibility studies will be undertaken by hiring the services of water sector development experts through a transparent and competitive bidding process. UN-Habitat will take lead in this regard in due consultation with Project Steering Committee. Technical input will be sought from Federal Flood Commission, Ministry of Water Resources, Islamabad Capital Territory Administration, Capital Development Authority, Rawalpindi Municipal Corporation, Nowshera Tehsil Municipal Administration and Pakistan Council of Research in Water Resources (PCRWR).
Output 2.2. Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors	Urban Planning Guidelines from Punjab Urban Unit and Khyber Pakhtunkhwa Urban Unit. Urban Planning Guidelines and requirements by provincial Planning and Development Departments of Punjab and Khyber Pakhtunkhwa. Local Government Acts of Punjab and Khyber Pakhtunkhwa (both provide for and emphasize on preparation of Master / Land use/Spatial Plans for urban centers National, Provincial and District Disaster Management Plans , Good	UN-Habitat will take the lead and will extend technical and financial support to concerned municipal/local government institutions for preparation of these plans. Broad based consultation and participation from stakeholders including citizens and vulnerable groups will be ensured. All efforts will be made to make these plans incorporate resilience to climate induced risks. This intervention addresses the lack of strategically designed long-term urban development plans for Nowshera and Rawalpindi cities. Further the respective local government acts for Punjab and Khyber

	practices by UNHABITAT and Shehersaaz , Annual Development Plans for Punjab, Khyber Pakhtunkhwa, Rawalpindi and Nowshera Districts. , Incumbent master plans for Nowshera and Rawalpindi at the time of implementation of the project	Pakhtunkhwa provinces provide for preparation of master plans for urban areas.
Output 2.3.- 50 government officials, including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity developing spatial plans	Not relevant	UN-Habitat guide PCRWR to develop training and operational manuals based upon project's interventions and learning for the concerned local government officials of Nowshera and Rawalpindi. The training sessions will be delivered by experienced trainers while inviting the project's staff to share their experiences with the trainees.
Output 3.1.- 100 government official with an equal number of men and women trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools	Not relevant	NDMA will take the lead to ensure that the training is in compliance with Pakistan's laws
Output 3.2. One National urban strategy focused on climate change / disaster risk reduction and with comprehensive gender mainstreaming developed One set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed	- Pakistan Vision 2025 - National Climate Change Policy and Implementation Plan - National Disaster Risk Reduction Policy - National and Provincial Disaster Management Plans - National Water Policy - National Environment Policy - National Sanitation Policy - National Housing Policy - National Building Codes - Work done by Provincial Urban Units - Habitat III -	UN-Habitat with project partners will initiate the formulation of the National Urban Policy (NUP) and strategy as required by the New Urban Agenda to which Pakistan is a signatory. Since, urban development is a provincial subject and MoCC is the focal agency for Habitat III, the project will organize urban dialogues inviting all stakeholders. Consultative meetings will be organized in all provinces and regions. With inputs from these consultative meetings and dialogues; UN-Habitat will work with MoCC to draft a NUP and strategy. that is sensitized to urban resilience. Stakeholders, including citizens, will be invited to give comments on the draft policy before presentation to Federal Cabinet approval.

F. Duplication with other funding sources

The target areas selected for this project were chosen because of their high vulnerability and inability to adapt to climate change, and are aligned with priority areas identified by the Government of Pakistan. However, the target sites are also influenced by climate change related work of development partners (other donor initiatives were discussed during national and local consultations and are summarised in section H).Nevertheless, relevant projects have been identified through the consultation mission and through institutional knowledge of UN-Habitat, thanks to its long history of operations in Pakistan. Table 13 below summarises other relevant projects that are either ongoing, recently completed, or about to start in Pakistan. Historical projects are not included.

UN-Habitat's proposal development team checked for other relevant projects in the target area through; 1) The consultations with national and provincial level organisations and actors (as detailed in Part II, Section H), 2) Consultations with other UN agencies and development partners and 3) Secondary research. During these consultations and research, no other projects in the target area were found, other than those in Table 13, below. During the community consultations, people were asked if they have been the recipient of any support from NGOs

or any other agency. Most had not, though a few mentioned that there had been an attempt by World Vision, the NGO to dig some boreholes in Rawalpindi. No details of this project could be found, it is not in the table below, and it appears that the boreholes are not fully functional. Some people in Nowshera mentioned a previous UNDP project, now completed, on solid waste management, but nothing directly related to water.

All engineering design work, technical information and knowledge generated from the project will be published, shared with national authorities and shared online to make ease of replication, and avoiding duplication in the future much easier.

Table 13: Relevant projects / programmes, lessons learned and complimentary potential.

Table 13 - Other relevant projects

Relevant projects/programme, executing entity and budget	Relevant interventions and lessons learned	Complimentary potential and non-duplication
National		
UNDP Adaptation Fund - Reducing Risks and Vulnerabilities from Glacier Lake Outburst Floods in Northern Pakistan ($3.9m) – 2010 –15 Scaling up of Glacial Lake Outburst Flood risk reduction in Northern Pakistan (US$37m)	Focus on addressing GLOF impacts in the north Lessons: use human centred and livelihood strengthening approach. General approach: 80 percent of flood issues can be addressed through spatial planning and resilient building design / regulations. There is a huge need and scope for water harvesting, also in path of floods	Non-duplication: Project is in a different target area and focuses on GLOFS. As recommended (through consultation) take approach as recommended
UNDP Water Project Pakistan 2011-2012	Improve the water supply in flood-effected areas in twelve districts all over Pakistan. Lessons: Over 200 solar water pumping systems were installed to provide thousands of families and animals with clean and safe drinking water. Intervention is not very cost-effective.	Non-duplication: Project was in other target areas. Complimentary: PV technique will be considered in feasibility studies.
UNDP, 2017-2020, Generating Global Environmental Benefits from improved decision making systems and local planning systems	The project strategically focused in that it seeks to address the root causes of environmental considerations escaping economic planning and development. It is targeting sectors and institutions where capacities and actions are most needed and where success and impacts are more likely. These include entities responsible for economic and environmental planning and management, as well as those that shape public and political opinions that are fundamental to the success of environment development integration[75].	Shares the same approving ministry (Ministry of Climate Change), same target provinces (Punjab and KP). The project does not have direct interventions in either of this proposed project's target cities or in water. It is complementary because it seeks to build government decision-making capacity at the provincial and national level.
Rawalpindi		
UNDP Pakistan Urban Poverty Alleviation Project (UPAP) in Rawalpindi 2007-2008	According to local civil society organizations, the UPAP provided technical and financial support to local organizations for a variety of community-based infrastructure development interventions including installation of tube wells, pavement of streets, construction of culverts, widening of drains etc. UNDP stopped it halfway without providing any details regarding the closure of	UPAP and REIP also covered some of those areas which are being proposed for this Adaptation Project.

[75] See https://www.pk.undp.org/content/dam/pakistan/docs/Project%20Briefs/August2019/Project%20brief%20-%20GEB%20Jan%2019.pdf for further information

	the project **Lessons:** Community engagement needs to be strategically planned and should aim to secure ownership. Shehersaaz undertook a social audit of REIP and recalls that the project suffered from a variety of issues that contributed in under-performance of the project. Two of the key ones included limited engagement of local government institutions and local civil society groups in the planning and implementation of the project. This project will ensure all stakeholders are well consulted and involved.	
Asian Development Bank Technical support and financial assistance for Rawalpindi Environmental Improvement Project	One of these was to improve the quantity and quality of drinking water in Rawalpindi City. Like UPAP, REIP was also closed without accomplishing its planned targets. Lessons:	
Japan International Cooperation Agency under a follow-up cooperation worth Rs. 13 million has extended equipment to the Pakistan Meteorological Department Islamabad for flood forecasting system of Lai Nullah and Improving the early warning system, deepening of Lai Nallah's bed, embankments	Besides these measures, the local municipal institution undertook annual cleaning of the Lai especially prior to the monsoon season. Lessons: These measures do have contributed in lowering the flooding risk as is evident from the testimonies of local residents. However, the local administration has not been able to devise sustainable solution to floods and to stop the inflow of untreated domestic sewage and industrial wastewater into Lai.	Complimentary: Projects in target areas will be well coordinated with JICA and government bodies.
Rawalpindi Water and Sanitation Agency is currently implementing the following relevant projects: Lai Nallah Protection, Dredging/Desilting Work (Phase 1) (PKR 197.13 mn), Extension of Water Facilities in Extended Controlled Area Recently notified by Punjab Government (PKR 250 mn)	UNHABITAT has requested Rawalpindi Water and Sanitation Agency for provision of this project's details. On receiving these details, the same will be highlighted in the detailed proposal	
NUST authorities three small lakes known as NUST Lake for storing rainwater by building a small wall.	These dams collect water from the rain falling within the campus over a small area as catchment area. Lessons: These lakes are being used as fish ponds and as source for charging the groundwater level of the tube well of the campus. This is a very good example of water harvesting.	The stream known as Kacha Lei Nala starts from sector H-12 of Islamabad where campus of the National University of Sciences and Technology has been constructed. This stream passes right through the campus. Overlap with this intervention will be avoided
World Vision Financial support to communities in Rawalpindi for installation of water pumps for extraction of	Installation of water pumps for extraction of groundwater for household consumption **Lessons:** World Vision could not provide a sustainable solution to address drinking water scarcity crisis in the communities.	

groundwater for household consumption.		
World Bank Punjab Cities Program	The project focuses on fiscal transfers (i.e. budgetary support) to cities in the Punjab to improve municipal services. However, the project primarily focuses on Municipal Corporations' ability to finance their operations, rather than, per se, the delivery of services. It is not clear whether this will strengthen the delivery of water supply services in Rawalpindi	As the project is new, further discussion with World Bank and municipal corporations will be required to ensure continued streamlining of operations.
Nowshera		
Ministry of water resources1253 re-modelling of Warsak Canal System in Peshawar & Nowshera Districts USD 11137.58 million	This is an on-going project with following scope of the work: • Construction of new auxiliary tunnel for 700 cusecs discharge capacity • Enhancing the capacity of existing pumping station from 200 cusecs to 290 cusecs with about 60 meter lift. • Enhancing capacity of warsak gravity canal from 350-456 cusecs. • Enhancing capacity of warsak lift canal from 200 -290 cusecs. • Remodelling of main canals/minors. • Rehabilitation/reconstruction of all structures along warsak canal system • Upgradation of existing pump house and related electromechanical works. • Installation of four new pumping units plu motors • Conversion of 60 KV grid station/transmission line into 132 KV grid station/transmission line including 11 KV switch gear and cables etc.	
International		
ADB Technical Assistance Report Promoting Urban Climate Change Resilience in Selected Asian Cities: Pakistan is part of it. 2015	Activities and target cities not clear	Coordinate with ADB and government on developing a national urban strategy focused on climate change related risks and impacts
IDA/World Bank (2015-2019) Water Sector Capacity Building and Advisory Services	The project provides nationwide capacity building and institutional strengthening across the water sector	Minimal focus on rainwater harvesting, or implementation of household scale activities. Mainly focused on extension of traditional water supply infrastructure. No evidence of adaptation to climate change

		considered in the project.

No household or community level rainwater harvesting activities have been identified in Nowshera or Rawalpindi cities. Most of the people meet their water needs through extraction of groundwater though the quality of groundwater is not fit for human consumption.

G. Learning and knowledge management

It is aimed to ensure project compliance with AF and UN-Habitat standards for Knowledge Management (KM) and advocacy. The strategic framework for the KM, Advocacy & Communication Strategy (KMAS) specific to this project is based on aims, objectives and best practices of both organizations regarding knowledge management (KM), advocacy and communications. Throughout this project, a wealth of data, information, and valuable knowledge concerning community vulnerabilities, and especially those of women and youth (in line with the AF gender policy) and resilience to climate change will be generated at the community and city levels. To ensure that useful lessons and experiences gained are successfully captured, retained, utilized, and shared throughout the project, a clear KM, Advocacy & Communication Strategy (KMAS) accompanying actionable work plan will be formulated as a point of reference for all project staff and implementing partners. Adhering to this strategic framework and work plan will facilitate the effective coordination of resources and efforts at all stages of the project implementation, monitoring, and evaluation. Knowledge Management at project level is achieved through the development of appropriate actions (gathering data; analysing processes, results, and personal experiences; generating and disseminating knowledge products and lessons learned, etc.) so that the knowledge captured and generated at the individual and project level is systematized and shared to reach the largest number of beneficiaries as quickly as possible. A strong and actionable work plan allows effective knowledge sharing, advocacy and communications. Once knowledge products and lessons learned have been generated and developed, it is necessary to effectively communicate and share these with specific target groups and audiences as well as the public.

The core benefits of a successful KMAS within this project are outlined as: a) Improves visibility of project activities and results to raise awareness on climate change impacts and adaptation at multiple levels and especially for women and youth; b) Enhances capacity for knowledge retention and reuse (at community, national and international level, including specific focus on women and youth); c) Enhances knowledge sharing and increases collaboration (within and across communities, relevant institutions, and organisations, including specific focus on women and youth); d) Improves learning (organisationally, locally, and globally); e) Strengthens accountability vis-à-vis project delivery and compliance with environmental, social, gender, youth, and human rights standards; f) Increases project impact through learning and access to information, including specific focus on women and youth; g) Avoids duplication; h) Facilitates modification of current and future projects based on lessons learned; i) Strengthens stakeholder/knowledge networks, including specific focus on women and youth J) Contributes to normative work of the Government of Pakistan, provincial governments, and other stakeholders, and of the Adaptation Fund & UN-Habitat.

Implementation of KMAS is within each component and activities of this project to capture and share lessons. The planned activities under Component 1 will provide communities and households, with an equal gender balance (i.e.50% women) with a better understanding / knowledge of how to plan, construct, operate, maintain and replicate flood resilient water harvesting systems, using innovative techniques. A participatory approach (involving communities in planning, implementation and monitoring activities) will lead to increased local knowledge on climate change adaptation, especially related to urban floods and water scarcity issues. Educational and information material will be produced for community awareness and advocacy and will be used from the inception of community engagement. This contributes to better understand the climate related issues and best possible solutions that communities can adapt. The project will also use a participatory monitoring process, which will enable the beneficiary communities to work directly with the project's M&E officer, to highlight issues in delivery and to strengthen adaptation benefits, including in replication and sustaining the project's gains. Knowledge products will be developed for replication purposes in other communities.

The activities under Component 2 will produce the same knowledge for government and city officials. Raising city/ district officials' awareness on issues related to community resilience, community actions and partnership approach etc., can generate greater commitment and support for addressing adaptation issues. Moreover, capacities for developing pro-active spatial plans considering flood and drought risks, will be strengthened.

Engagement in awareness raising will also pave the way to identify other water management interventions in the future through spatial planning and for policy review to ensure the project's sustainability and the development of a conducive policy environment. All relevant information should be fed back to the provincial and national governments when appropriate. As for the planned activities under component 3, this is a strong knowledge production component focused on developing national policy and technical guidelines. This will address the technical capacity gaps in spatial planning and regulatory frameworks related to infrastructure development and urban development considering climate change risks and impacts. Visibility of project activities including lessons will be communicated (As a UN protocol of Pakistan's One UN System) using press releases and media events through UN Information Center (UNIC) of Pakistan and they shall disseminate the same with the other UN agencies, also the human-interest stories will be published in the UNIC run newsletters.

The details of the project shall be projected on the country website and the social media campaigns. At the regional level, the lessons, tools, methodologies and guidelines from the project will be consolidated and added to the regional knowledge database and shared with the Regional Climate Change focal point/team and other country offices through the Knowledge Management focal point within the UN-Habitat Regional office for Asia and the Pacific. Regional knowledge platforms, such as Asia Pacific Expert Group Meeting, Asia City Summit are other openings for dissemination of knowledge products.

At international level, the lessons from the project will be shared with the UN-Habitat best practices unit within HQ through the Knowledge Management focal point for dissemination to all countries; and similarly, through the Regional Climate Change focal point/team with the Climate Change Planning Unit of the Urban Planning and Design Branch for consolidation of knowledge products on Climate Change. Thematic networking sessions and events in global events such as World Urban Forum will be targeted. Specific approach to women and youth includes the following (see outcomes consultations Part II.H): a) Reading material and videos targeting women and youth will be prepared in local languages; b) Ensure that women are being visibly engaged as agents of change at all levels of disaster preparedness, including education, communication, information and networking opportunities; c) Build the capacities of national and local women's groups and provide them with a platform to be heard and lead.

Table 14: Learning objectives and knowledge products per output

Output	Learning objectives (lo) & indicators (i)	Knowledge products
Output 1.1. (concrete)5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	(lo): involving community members and especially women and youth in construction and maintenance of facilities (i) number of community members involved	See below
Output 1.2. - 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained and have requisite knowledge and practical guidelines developed to plan, construct, operate, maintain and replicate water harvesting facilities at community level	(lo): community members have the technical capacity to operate and maintain water harvesting facilities (i) Trainings conducted and people attending them	Fifteen plans developed Technical manuals produced Videos produced
Output 1.3 Awareness campaigns to increase knowledge in all target communities to reduce dumping of solid waste in drainage channels	(lo) Communities are sensitized and vigilant towards keeping the water channels clean and clear for marinating smooth flow of water Number of individuals having received awareness campaign messages	Campaign strategy Campaign material/Behaviour change communication material
Output 2.1. (concrete)50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	(lo): involve district and city officers in planning and design of facilities (i) number of district and city officers involved	See below

Output 2.2. Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, including comprehensive water harvesting plans. These strategies are decision-making tools for cities to manage climate change-related risks and impact in & beyond city boundaries, taking into consideration multiple sectors	(Io): District and city government have capacity to plan, construct, maintain and replicate best practice water harvesting facility (i): Manual published online and shared nationally through workshop	Spatial strategies developed: These strategies are decision-making tools for cities to manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors. Manual to plan, construct, operate, maintain and replicate best practice water harvesting facility as part of spatial planning strategies
Output 2.3. 50 government officials, including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity developing spatial plans		
Output 3.1.100 government officials with an equal number of men and women trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.	(Io): Concerned government officers have capacity to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.(i): Manual published online and shared nationally through workshop	Manual for guiding / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.
Output 3.2. One National urban strategy focused on climate change / disaster risk reduction with comprehensive gender mainstreaming developed - One set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed	(Io): Concerned government officers have capacity to guide / direct urban development considering climate change and disaster risks and impacts (i): National strategies and guidelines developed	National urban strategy focused on climate change / disaster risk reduction developed National guidelines for spatial planning considering climate change / disaster risks developed

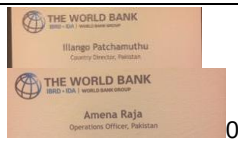
Capturing lessons learned will be throughout the life of the project at multiple levels. Knowledge capturing will be centred on the case studies, beneficiary satisfactory surveys, stakeholder feedback sessions, research and issue papers and policy briefs. Good practices and key lessons learned of the project will be shared locally and nationally for policy dialogues. Knowledge products are shared nationally regionally and internationally at meetings, workshops, conferences and global knowledge networking events such as the World Urban Forum.

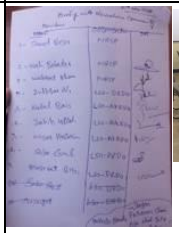
H. Consultative process:

The project has been designed based on the outcomes of consultations at the national-, district-, city- and community level. Consultations with UN agencies, NGO's, etc. took place to understand climate change impacts in Pakistan, to identify potential focus and target areas and to identify potential risks for vulnerable groups and compliance to human rights, labour standards, etc. At the national, district- and city-level, consultations further focused on ensuring that the project aligns with national and sub-national priorities. At the community level, consultations focused on understanding local climate change impacts and effects, barriers to adapt and possible interventions to address negative impacts. Consultations with community representatives and women took place to identify specific impacts and needs and to develop specific group baselines and approaches to ensure equal distribution of benefits (see Annex 6). Below table provides an overview of stakeholders consulted, consultation objectives, outcomes, conclusions and consultation evidence.

Table 15: Initial consultation outcomes and conclusions - Detailed consultations reporting / evidence including Detailed consultation sheets are available and can be shared on request.

Stakeholder, incl. role/function	Objective	Outcome	Conclusion	Evidence Method: interview / discussion
Mr. Khizar Hayat Khan Federal Secretary Ministry of Climate Change	- Align proposed project with national priorities	Very welcoming to a project that addresses water scarcity (new priority) and flooding	- Focus on water scarcity and flood issues	 Date: 04-06-2018
Mr Irfan Tariq DG and AF focal point MOCC	- Align proposed project with national priorities - Agree on way forward	Priority issues: water scarcity (new priority) and flooding Name of ministry will be changed to climate change and human settlements – so more urban focus; Request to develop a NUP; Priority town: Nowshera. Also, water scarcity issue in Islamabad and Rawalpindi – technique needed to conserve / harvest water + urban planning	Focus on water scarcity and flood issues National urban policy and urban planning strategies to reduce climate change impacts (floods, droughts) part of project. Focus on Nowshera if feasible. Consider Islamabad and Rawalpindi if vulnerable area	 04-06-18
Lt. Gen Omar Mahmood Hayat Chairman NDMA **Fiaz Hussain Shah** DG - National Institute of Disaster Mgt	- Align proposed project with national priorities - Understand main disaster / cc issues	- Cities are not planned for floods and water - Land use plans and building codes needed to avoid people moving into risk areas and building codes to construct resilient houses - Suggested to focus more south compared to donor focus on tribal / northern areas	- Include land use planning strategy and resilient building codes components in the project	 Date: 04-06-2018
Ms. Ingrid Christensen Country head ILO **Abid Niaz Khan** National programme coordinator	- Identify main potential risks / issues to comply to ILO standards - Understand main labour-related needs	- Ensure safety and health (155 and 187) are guaranteed during activities, especially for women - Suggest promoting decent work / livelihood options (skills, protection, diversification) and build upon existing skills - Ensure maintenance arrangements are institutionalised – work with provincial / district irrigation departments	- Ensure safety and health (155 and 187) are guaranteed during activities, especially for women - Consider skill development, e.g. for resilient house design, in project - Work with provincial / district irrigation departments	 Date: 04-06-2018
Mr. Shakeel Ahmad Chief Development unit UNDP **Amanullah Khan** Chief Environment	- Understand main disaster / cc issues - Map lessons learned other projects	In process of developing community of practice focused on 'urban' : One relevant rural water harvesting project One relevant flood project focused on livelihood recovery + AF and GCF GLOF projects Lessons: use human center and livelihood strengthening approach General approach: 80 percent of flood issues can be addressed	- Use lessons from projects - Include spatial planning, building design / regulations and water harvesting components in the project	 Date: 04-06-2018

and climate change UNDP		through spatial planning and resilient building design / regulations There is a huge need and scope for water harvesting, also in path of floods		
Mr. Illango Pathchamuthu Country director World Bank **Amena Raja** Operations officer World bank	- Understand main disaster / cc issues - Map lessons learned other projects	Need of land use planning and building codes, especially in Punjab Need to address issue of water scarcity in Karachi (due to saltwater) Use lessons from some 2-3 relevant flood-related projects	- Include land use planning and building codes component in project - Use lessons learned from flood-related project	 05-0618
Mr. Ahmed Kamal Chief Engineering Advisor & Chairman Federal Flood Commission Ministry of Water Resources	- Align proposed project with national priorities - Understand main disaster / cc issues	Most relevant policies / plans: National flood protection plan and National water policy – priorities are water scarcity and floods ADB, JICA and WWF (GCF) interested in flood plan Suggest combining local water harvesting knowledge / techniques with world and regional best practices to improve system and clean water Suggest developing a city water management model and to raise public awareness about water scarcity / conservation needs Co-funding from government is option	- Fully align with National flood protection plan and National water policy - Avoid overlap with ADB and JICA projects - Focus on combining local water harvesting knowledge / techniques with world and regional best practices to improve system and clean water - Consider developing a city water management model – perhaps as part of national urban policy - Explore options of co-funding from government	 Date: 05-06-2018
Ms. Fareeha Ummar Progamme specialist UN Women	- Identify main potential gender related risks - Understand main gender needs in Pakistan	Legal status: consider potential risk of 'violence against women (domestic) and harassment. Religious / cultural status: misinterpretation but often dependent on men (also in decision-making), which can be a problem with e.g. rescue work, especially when women are not registered – key challenges: mobility, social norms and mindsets Women are generally water 'handlers' Suggest working with national commission 'status of women' and gender focal points within NDMA and departments Suggest focussing on skills + capacity development	- Ensure safety and health are guaranteed during activities - Include women in decision-making processes, where possible - Focus on women with water-related activities – also with skills and capacity focus - Work with national commission 'status of women' and gender focal points within NDMA and departments - Consider working with Lahore women university	 Date: 05-06-2018

Mr. Hussain Ullah Head of preparedness unit OCHA	Identify main potential human right risks Understand main issues and needs when it comes to disaster preparedness and response	Main issue: water scarcity – there is no proper water and floods management system and the most vulnerable are hit hardest Punjab has good data Sindh has a governance gap Balochistan has some good water scarcity coping strategies – but question is how to purify water Suggest to carefully study landscape requirements for water harvesting NDMA has good report identifying most hazard impacts vulnerable areas	- Focus on water scarcity issue - Identify areas appropriate for water harvesting (with slope) - Use NDMA data to identify target area with above	 Date: 05-06-2018
Ms. Almas Saleem Executive director SheherSaaz NGO **Abdul Shakoor Sindhu** Chief Technical Advisor Shehersaaz NGO	Identify main urban climate change and disaster issues Identify potential target areas based on assessments Discuss cooperation options	Main issues floods and water scarcity Suggest focussing on Nowshera and Rawalpindi as both (flash) floods and water scarcity are issues Shehersaaz in only NGO in Pakistan that focuses on urban issues in a comprehensive way Agreement on cooperation on consultations	- Assess Nowshera and Rawalpindi as best target areas - Work together on consultations	 06-06-2018
Initial local government and community representatives' consultation Nowshera	Understand main climate change related impacts and specific effects and barriers to adapt Identify main issues and needs. Understand main concerns Identify targets communities Identify possible interventions	Concerns of the poor don't reach the government Impact: 2-meter flood (river -north side - and flash – from mountains 10 km away – south side) leading to death and destruction Most difficult to adapt / recover: business, contaminated water, unhygienic situation Priorities / needs regarding floods: 1) safety, 2) water (contamination) and food, 3) housing, crops, cattle (destroyed) Water source: wells Need to build water reservoir dams and; need of rescue kits during floods and shelter after floods; need of gender approach (health, hygiene); need of training of carpenters, electricians, etc. Most affected communities:	- Consider inputs in project design.	  Date: 06-06-2018

Initial local government and community representatives' consultation Rawalpindi union council 4-5-6	Understand main climate change related impacts and specific effects and barriers to adapt Identify main issues and needs; Understand main concerns Identify targets communities Identify possible interventions	Impact: floods up to 1st floor (4 meters) in very dense area leading to death, destruction, diseases, electricity power cut (also outside flood period), etc. + water scarcity due to drought and contaminated water (year-round) due to floods Most difficult to adapt / recover: contaminated water (using boreholes – there is a lot of waste. Priorities / needs regarding floods: 1) safety (especially children falling and in and elderly, 2) water (contamination) Need to reduce flood water from source (as very dense area; need clean water year-round in communities; Most affected communities: union councils 4-8 + further along the channels (10 km)	- Consider inputs in project design.	 Date: 07-06-2018 
Mr Irfan Tariq DG and AF focal point Ministry of Climate Change With representatives from Shehersaaz	- Agree on main approach, components and target areas - Agree on steps / way forward	Agreement on main approach and components – will review document Agreement on main steps / way forward – will send letters to target municipalities to get their official buy-in Include Islamabad by-law on water harvesting in building design in project design	- See left	 08-06- 18
Rawalpindi community consultations Rawalpindi union council Union Councils 4-5-6	- Understand climate change related issues and needs in target areas	Flooding, diseases and droughts / water scarcity are all getting a lot worse and water scarcity is the most pressing issue **Water scarcity specific issues:** The poor households are most affected, as they cannot afford to bear the cost of installing a borehole and neither can pay for availing the facility from private water vendors: Getting water for poor households make up more than half of the community cost them socially as well as economically. In these households, collection of water largely rests with women and children. Sometimes they have to spend hours in this activity and hence to compromise their time which they can otherwise use for leisure or productive activities--education and employment: Scarcity of water is also a source of feuds among neighbours**.** **Diseases specific issues:** Contaminated water is a source of number of water-borne diseases including diarrhoea, gastro and hepatitis to name a few. **Flood specific issues**: Floods are recurrent phenomenon thanks to the close proximity of Lai Nallah and presence of some natural drains.: Absence of land use planning and control has also contributed in localized flooding. The natural drainage channels as well as Lai Nallah have been encroached leading to narrowing of their traditional right of ways. **Barriers for adaptation:** Dependence on (polluted) groundwater of which the water table has gone down dramatically Absence of water sector planning at various levels and lack of		 Date: 04-07-2018 Method: discussion and survey

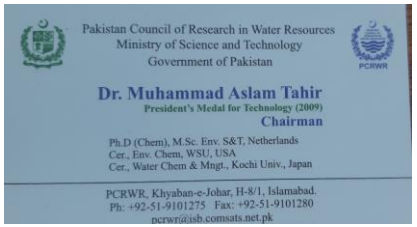
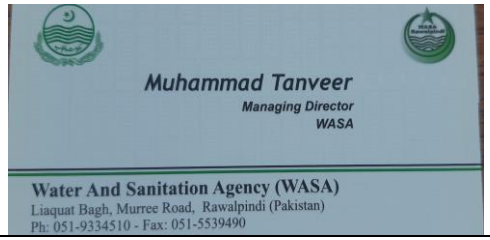
		awareness and technical support: People do not have a control on quality of water supplied through municipal authorities as well as water vendors: Lack of waste management leads to more flood risks and groundwater pollution.		
UN gender working group UNIC UNIDO UNDP UNDSS UN-Habitat Shehersaaz	- Understand main gender specific related issues and needs regarding climate change, also in target areas	Identified Challenges for women to adapt to climate change vulnerabilities - Women are typically absent from the forum where Disaster Risk Reduction (DRR) decisions/ planning is made, so when priorities are established, the interests of women are often poorly represented. - Women are often absent from trainings for disaster management. - Difficulties in finding adequate shelter, food, safe water, and fuel for cooking, as well as problems in maintaining personal hygiene and sanitation, prevent women from performing their usual roles at home in disaster situations. - Women also suffered from water crises due to the scarcity of clean drinking water. The majority of the women faced drinking water problem and communication problem due to damaged roads, culverts, and embankments. - Mobility problems during floods - There exists no mechanism to communicate with women groups	Measures Proposed for strengthening adaptive capacity of women; Make them part of Awareness campaigns ; Prepare reading material and videos for them in local languages; Train women to use technologies for water harvesting; Ensure that women are being visibly engaged as agents of change at all levels of disaster preparedness, including in early warning systems, education, communication, information and networking opportunities.; Improve the knowledge, skills and behaviours of vulnerable women for a good quality warning, evacuation, shelter and rehabilitation mechanism.; Build the capacities of national and local women's groups' and provide them with a platform to be heard and to lead ; Development of a women volunteers' team within each community to address women and girls special needs; Mainstreaming gender into policy processes, programmes and projects can help ensure that such processes equitably benefit women and men while allowing optimal use of the unique knowledge and skills of women and men. By the same token, gender mainstreaming can advance social policy (including gender equality) while ensuring greater returns on adaptation and disaster risk reduction investments. Consider the level of women's access to technology and finances, health care, support services, shelter and security in times of disaster.	  Date: 31-07-2018 Method: discussion
Rawalpindi women consultations Rawalpindi union council Union Councils 4-5-6	- Understand main gender specific related issues and needs regarding climate change in	Flooding, diseases and droughts / water scarcity are all getting a lot worse **Flood specific issues:** Women being responsible for housekeeping put a lot of effort and time in cleaning their houses whenever they are affected by floodwaters: The monsoon season brings fear and especially women have to stay extra conscious spending sleepless nights **Disease specific issues:** The prevalence of water borne disease and epidemics especially affects younger children. Taking care of them primarily comes to women increasing their burden and affecting their productive time. Disability among children is especially high.: Water scarcity specific issues: Women have to travel almost two kilometers		

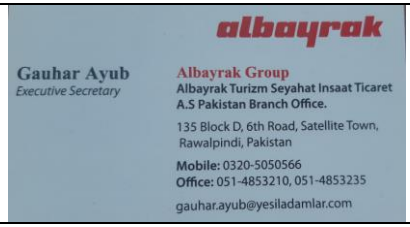
	target communities	to bring drinking water from two nearby water sources--private boreholes **Barriers for adaptation:** Women are not involved in any community-based decision making: Poverty is rampant. Men resort to daily wage labor while women contribute in household incomes by working as domestic servants or undertaking works like sewing/tailoring in their homes : Most of the households are poor and disease burden is high. No social safety nets or subsidized healthcare facilities are available to households: Most of the households are poor. The meager earnings do not afford them the opportunity to invest in water filtration or other effective measures for having clean water for household uses: Generally, HHs do not have knowledge of household level low cost but effective water purification technologies **Concerns:** They fear that flood protection measures involving removal of encroachments from Lai Nallah's banks may lead to their displacement: Locality/neighborhood is densely populated having little space for water collection ponds. They were also of the view that since they were tenants and poor, they would not be able to invest in household level rainwater harvesting technology Women skills, strengths and leaders The sense of togetherness can be transformed into effective women / community organization and can be encouraged to undertake community driven or community led initiatives.	Date: 01-08-2018 Method: discussion and survey
Nowshera community consultations Nowshera Kalan	Understand climate change related issues and needs in target areas	Flooding, diseases and droughts / water scarcity are all getting a lot worse and water scarcity is the most pressing issue: Water scarcity specific issues: The available water from municipal supplies stinks and is highly contaminated; The groundwater up to the depth of 100 ft is not fit for human consumption The poor households not being able to afford water purification / filtration systems are compelled to consume contaminated water. **Flood specific issues:** Over the years, the haphazard and unplanned growth of the city resulted in encroachment of river banks. Whenever river overflows the surrounding localities are inundated. Besides River Kabul a number of natural water channels that drain into River Kabul also pass through the city. During rainy season, these channels also cause flooding inundating neighboring areas. **Disease specific issues:** Contaminated water is a source of number of water borne diseases including diarrhoea, gastro and hepatitis to name a few : Barriers for adaptation: Especially poor and lower middle-income households can't afford to Install boreholes to extract groundwater from safer depths; Households generally are not aware of household level low cost water treatment technologies: The communities are not familiar with community-based flood management measures.: The river and the water channels have been turned into dumping points for city's solid waste.	 Date: 01-08-2018 Method: discussion and survey
Mohammad Shakeel Malik Federal Secretary MOCC	- Get feedback on the proposal before final endorsement	- Include water purification and waste management approach in the proposal	Date: 06-08-2018 Method: discussion

2nd International Consultation Mission

Stakeholder, incl. role/function	Objective	Outcome	Conclusion	Evidence Method: interview / discussion
Mr. Muhammad Idress Mahsud, Member Disaster Risk Reduction National Disaster Management Authority and Entisham Khalid Khan, Project Director NDMA	Alignment with NDMA priorities, Discuss management arrangements, data and information sharing	NDMA advised that its provincial counterparts would be best placed to execute the project, considering the 18th Constitutional Amendment that decentralises authority. NDMA acts as a national coordination and takes a place on the Project Steering Committee. A further meeting with the Chair, NDMA was also arranged (below). NDMA also reconfirmed the findings of the concept note, when presented and agreed that the proposed project is still relevant and in-lien with national priorities. Specifically, NDMA currently has a macro level Multi-Hazard Vulnerability and Risk Assessment (MHVRA) at the national level with support from the World Food Programme. This also looks in detail at 12 districts, with 15 more planned, however, neither of these are Rawalpindi or Nowshera. It was discussed that the MHVRA+spatial component would be an appropriate approach to Outcome 2.2, and this is reflected in the Project results framework. This could also tie-in with the provincial level disaster management support system which is being rolled out across all provinces of Pakistan (see below, PDMA).		  Date, May 20th, 2019
Lt. Gen. Muhammed Afzal, Chair, NDMA	Political agreement to support the project, re-confirmation of management arrangements	Lt. Gen. Afzal welcomed the project and pledged his support, reconfirming the above. NDMA will sit on the Project Steering Committee, as described in Part III, Section A. He highlighted the great need for the project		 Dat: May 25th, 2019

Muhammed Tufail, Aman Development Foundation, Rawalpindi	Discuss issues affecting the community level, local-level management and issues relating to the Environmental and Social Policy	Aman Development Foundation is a CBO that works with many of the target communities in Rawalpindi. The meeting reconfirmed the baseline conditions experienced by the community, and already described in the concept note part of this full proposal. The community regularly floods in the rainy season and the Nullah Lai is the primary source. September is a particularly problematic month for the communities. Solid waste exacerbates the problem as it clogs drains. Floods happen every year and they contaminate the drinking water supply (primarily from boreholes). These boreholes are 250-350 feet deep and used to have ample water but there are now issues during dry periods, too. Many of these boreholes are susceptible to being contaminated with sewage. The communities are all formalised, but with a mix of owner-occupied and private rented housing (an estimated 70/30 split). It was agreed that women's focus groups are necessary and welcome, but that these should take pace after Ramadhan (which finished in early June). The overall picture is one of strong social cohesion in the community and few social problems.	
Principal, Government Girls' School, Dhoke Hassu	To discuss the management of RWH facilities in a public building. Discussing siting, access	The school itself has formalised water supply from the Water Supply Authority (WASA), Rawalpindi. There was no objection raised to using the school as a site for the public RWH facilities, aside from complying with a formal consent procedure before works start, with the Punjab Department of Education. The meeting also reconfirmed the flood problems, even in this area (about 800m-1km away from the Nullah Lai). There are continued and substantial health problems that occur in the rainy season and during flood times, primarily due to water-borne disease	
Mohammed Irfan Tariq, Director General, Ministry of Climate Change	To agree political support, role of the NDA, management arrangements	It was agreed that it would be correct for a project of this nature, in the Pakistan context, MoCC should be the chair of the PSA, as the National Designated Authority for the Adaptation Fund. MoCC recommended other organisations who should be represented on the Project Steering Committee, and these are reflected in the management arrangements in Part III, Section A. MoCC also enthusiastically supported the activities proposed under Output 1.3, as they are launching a new campaign to reduce plastic consumption and plastic waste in Pakistan.	

Muhammed Aslam Tahir, Director Pakistan Council on Water Research	To explore technical approaches already adopted by PCRWR	PCRWR prioritises water re-use and as such RWH is one of their main approaches. Most of their work so far has been in the desert and dry-lands areas in southern and western Pakistan. However, they have demonstrated that RWH has been a successful approach all over the country. To that end, a training module on RWH has been developed for local and national government, and PCRWR is happy for UN-Habitat and its executing partners to benefit from this training module as appropriate and called for the project. PCRWR also highlighted that a combination of population pressure and climate change in Islamabad and Rawalpindi have driven the typical ground water level from approximately 45 feet (13.7m) to 600 feet (182m)	 
Nisar Ahmed Sani, Coordinator, Punjab Provincial Disaster Management Authority	Practical Implementation questions	PDMA has an extensive control room that is linked to data from the census, enabling it to monitor disasters real-time, with household level data in 12 districts in Punjab. However, Rawalpindi has not yet been covered by this system, and it was agreed that the MHVRA exercise would be highly beneficial as a steppingstone to providing real-time disaster monitoring for Rawalpindi city. To that end, PDMA will work under NDMA, which executes under Outputs 2.2 and 3.1.	
Muhammed Tanveer, Managing Director, WASA Rawalpindi	Technical aspects, locations for Public RWH facilities, Environmental and Social Policy compliance questions	WASA's support was reconfirmed during the discussions, and to that end, the technical designs provided in Annex 1 and the list of locations in Annex 3 have all been reconfirmed by WASA. WASA has also agreed to be an executing entity under the project, as described in Part III, Section A and Section E.	 

Gauhar Ayub, Executive Secretary Albayrak	Questions around Solid waste management in Rawalpindi	Albayrak is the private sector provider of solid waste management services in Rawalpindi. It pledged its support to ensure that more households receive SWM services and says that it is working with WASA and the municipality to ensure that no one is missed from its services. Albayrak claimed that it was not contractually obliged to do any awareness raising, promotion or cleaning of dykes/drainage channels as part of its contract with the city.	

Since the 2nd international project design mission took place in May 2019, further consultations have taken place between national representatives of UN-Habitat and the following stakeholders:

Stakeholder, incl. role/function	**Objective**	**Outcome**	**Evidence** **Method: interview / discussion**
Communities	To understand community preferences, priorities. To obtain consent, and brief communities on the draft Environmental, Social and Gender Compliance Plan and Grievance Mechanism	Six large-scale community consultations – three in Rawalpindi and three in Nowshera took place, in the formulation of the proposal. These consultations met representatives of each of the target communities across the two cities, and each consultation consisted of a sex-segregated session with men and women. The consultations all asked questions categorised as follows: water, solid waste management, Flood impacts, Drainage, Livelihoods, Environmental and Social Safeguard Requirements and Suggestions from Communities. To save space in this proposal, greater detail is provided in Annex 6. In short, however, all communities welcomed the project. All have serious problems with access to water and have experienced flooding impacts. People resort to various methods to access water during shortages, including tankers. All community members present at the consultations were asked if they would be willing to give their consent to the project's implementation, and all gave their consent – none refused.	Community Consultations that took place in May and June 2019. 

I. Justification

The proposed project components, outcomes and outputs fully align with 1) national and local government / institutional priorities and gaps identified, with 2) identified community and vulnerable groups needs and 3) with the Adaptation Fund outcomes. This alignment has resulted in the design of a comprehensive approach in which the different components strengthen each other and in which outputs and activities are expected to fill identified gaps of Pakistan and target cities' current climate change response and corresponding institutional capacities. In fact, the selected interventions / activities are directly confirmed and / or proposed by the national, state and municipal governments and inhabitants of target communities through consultations, as reported in Part II.H above.

The project aims to maximizing the funding amount for concrete adaptation interventions: see outputs 1.1. and 2.1; funding allocation to the other outputs is required to support the execution of these concrete interventions in a sustainable way as well as to respond to government priorities / requests. The table below provides a justification for funding requested, focusing on the full cost of adaptation reasoning, by showing the impact of AF funding compared to no funding (baseline) related to expected project outcomes. While Pakistan stands among the list of those countries which are most vulnerable to impacts of climate change, the national level efforts are not at par with the adaptation requirements of the country. In 2012-13 the National Climate Change Policy was introduced followed by a Climate Change Act 2016-17. However, the mainstream or integration of climate change adaptation and mitigation in planning and development has still to go a very long way. The AF Funds are required to catalyse this process.

The project funds will be used not only to address the urban climate change vulnerability by offering practical technologies and solutions at community and city scale, but also to catalyse the spatial planning practices and urban development policies and strategies in a climate sensitive manner. The project outcomes will provide an opportunity for the Ministry of Climate Change to demonstrate practical, sustainable solutions which can be replicate through incorporating such proposals to the ministerial fund-raising tool from Planning Commission (PC1). This has been discussed during the consultation held by UN Habitat recently. Target communities / households have little support from municipalities to address flood and drought / water scarcity issues, mainly due to the informal status of the communities (i.e. no basic services), high poverty incidences and lack of resources and capacities. Boreholes have been dug by community members themselves, but these are now a lost investment because of groundwater depletion and contamination. Therefore, to address drought / water scarcity issues affecting the vulnerable target community / households, funding of innovative rainwater harvesting systems is needed. Household level rainwater harvesting systems provide adaptive solution to poor access to clean water due to flooding. Rainwater harvesting can be tapped both at household level and in public building and gardens for public use such as schools, hospitals and parks. These will be planned through spatial strategies that look beyond city boundaries and basic sectors.

Table 16: Overview of impact of AF funding compared to no funding (baseline) related to expected project outcomes

Expected concrete output/intervention	Baseline (without AF)	Additional (with AF)	Comment and alternative adaptation scenario's
Output 1.1: (concrete): 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques **Output 1.2:** 15 union council-level community plans developed (7 in Rawalpindi, 8 in Nowshera), community members (especially women and youth) trained and have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate rainwater harvesting facilities at community level, **Output 1.3**: Awareness campaigns to increase knowledge in all target communities to reduce dumping of solid waste in drainage channels	Communities in target cities don't have the capacity to plan, operate, maintain and replicate community and household-level water harvesting facilities, which are urgently needed to respond to clean water needs. Solid waste is being dumped in water channels and neighbouring communities and concerned municipal institutions are doing nothing substantial to	The proposed activities / interventions under component 1 will allow communities, and especially women and youth in target cities to plan, operate, maintain and replicate community and household-level water harvesting facilities, which are urgently needed to respond to drought / clean water needs. By reducing the unchecked dumping of solid waste; the existing levels of contamination	Alternative adaptation scenarios are the enhancement of boreholes or piped water. However, water from boreholes could get contaminated by flood water and piped water could also be at risk because of high flood levels. In the past concerned government institutions have tried many approaches to reduce or stop the dumping of solid waste in water channels. These mainly include removal of solid waste

	address this issue.	and flooding risks can be considerably reduced.	from water channels especially prior to monsoon season. However, this approach requires large amount of funds and prove to be only a short term solution.
Output 2.1. (concrete): 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed **Output 2.2.:** Two district city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors. **Output 2.3;** 50 government officials, including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and houses and to enhance capacity developing spatial plans	District and city government officials in target cities don't have the capacity to plan, operate, maintain and replicate water harvesting facilities, taking into account flood and drought risks through spatial planning strategies, which is urgently needed to respond to climate change flood and drought risks	The proposed activities / interventions under component 2 will allow city government officials to plan, operate, maintain and replicate water harvesting facilities, taking into account flood and drought risks through spatial planning strategies / decision-making	Alternative adaptation scenarios are resettlement or the construction of larger drainage channels, which are not feasible from a cost perspective and environmental and social risk point of view and will also not have the benefit of water supply. Due to the severe historical flood impacts, community-level flood reduction interventions won't reduce flood impacts enough.
Output 3.1: 100 government officials with an equal number of women and men trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools. **Output 3.2:** One National urban strategy focused on climate change / disaster risk, with comprehensive gender mainstreamingreduction developed One set of National guidelines for spatial planning considering climate change / disaster risks, with comprehensive gender mainstreaming developed	There is no national strategy for urban areas, focusing climate change risks and impacts. Although spatial planning strategies are an effective tool to avoid people moving into high flood risk areas, national strategies focused on this are lacking.	The proposed activities / interventions under component 3 will allow the national government to guide / direct urban development considering climate change and disaster risks and impacts through different strategies	Alternative adaptation scenarios are a focus on the development of sub-national strategies, but this will reduce the complete government buy-in, including budgets.

J Sustainability

The project aims to sustain adaptation benefits achieved and replicate best practices after the end of the project through a combination of anchoring activities into existing government programmes, strategies and community plans, including for infrastructure operation and maintenance by sharing lessons and best practices (see part II.G).

Institutional sustainability; The project will pave the way for the national government and local authorities to sustain and up-scale the project to other districts and cities by developing relevant national strategies, which have been requested by the government and which will be anchored into existing ministry and municipal programmes. As per LOA/MOA, the beneficiary community or Govt. Department will be responsible for the Operation and Maintenance of Infrastructure and Technology. Moreover, trainings will be conducted to strengthen relevant government capacities and best practices and lessons learned from all component outputs and outcomes will be shared at the national and sub-national level.

Social sustainability: By organizing and fully engaging community members and vulnerable groups in project activities, including assessments during project preparation and the development of plans/ strategies and monitoring, the project aims to achieve long-lasting awareness and capacities of community members. Moreover, communities will develop plans and community members will be trained to operate and maintain assets developed. By bringing in positive behaviour changes, the risk of flooding and existing levels of contamination of water channels will be reduced.

Economic sustainability: Investing in increasing the resilience of vulnerable assets is a sustainable economic approach. It will reduce future costs related to drought and flood impacts. The national strategies, as well as

community plans will consider economic opportunities. The project will ensure that material used for community and district/city level rainwater harvesting facilities are bought from local markets to strengthen the local economy. Further, end-user and in-house capacity building to plan, construct, operate, maintain and replicate rainwater facilities will reduce cost and extend live of the concrete intervention. Annex 2 proposes a way forward to transform development of rainwater harvesting facilities into a viable business model and mainstream urban adaptation into policies. Inter alia, Annex 2 also gives estimates for costs, amount of harvested water and pay-back time for rainwater harvesting facilities. For example, a study titled Rainwater Harvesting Potential—A contribution to sustainable water management strategy (2013) makes calculations for Lahore—the capital city of Punjab Province in these words, "Consider that 2/3rd (327 litres per capita x 2/3=218 litres per capita per day) of the daily water consumption is used for gardening, car washing, flushing, house cleaning, and laundry etc. then the harvested rainwater can be made available for the population (1,023, 510) of Lahore city under Lahore Development Authority is approximated as 96 days (appx.3.2 months)". For the sake of convenience, if similar estimation is generalized for Rawalpindi and Nowshera, the harvested water can suffice for three months' water consumption of a household. If PKR 3000 is taken as the cost of water a household have to pay for getting water, a household can save PKR 9,000 per annum. If PKR 50,000 is taken as the cost of rainwater harvesting system, the investment will return in about 5 ½ years.

Environmental Sustainability: The national strategies, as well as community plans will also consider environmental impacts.

The project's proposed interventions are designed to work with nature, and are, as a consequence, environmentally sustainable. This is because they make use of rainwater as a means to supply water to the people, and decrease the dependence on groundwater, which is becoming increasingly unsustainable due to over extraction, manifested in boreholes that in some cases are over 30-40 metres long. Moving to rainwater is therefore inherently more sustainable. Meanwhile, the planning activities under Outputs 1.2 and 2.2 will emphasise environmental sustainability, thus helping to engage communities and local governments in working with environmental aims in mind.

Management measures, aside from the small fee structure (described below) will also be put in place to prevent wastage of water, or a "tragedy of the commons" situation. Awareness raising under Component 2 will re-emphasize that water is a precious commodity (something residents already appear cognizant of, according to community consultations). The public water is for consumption purposes only. Residents will be made aware that it is not intended to be used for watering gardens, washing floors, bathing or other domestic, non-consumption uses, even where they have paid a fee for it. Building managers will also be made aware of effective uses of water. Where the public buildings are mosques, water will not be used for ablution purposes. Public buildings will also be adorned with signage to encourage people not to waste water. In short, the project will use a mix of awareness raising, training, and guidance to ensure that water is not wasted or misused.

Financial sustainability:

Financial sustainability is essential to the continued operation of the RWH facilities in particular. Both the willingness to pay survey and the community consultations outlined above and in Annex 6 revealed that people can and do regularly pay 300 Rupees or more for 1,000 gallons of water. In this regard, a small-scale, community level water user group or groups will be established in each UC (Rawalpindi) and NC (Nowshera). This small-scale organisation will ensure that a small fee is collected at the community scale to ensure that funds are available for operation and maintenance. The local governments WASA (in Rawalpindi) and WSSP in Nowshera have committed public buildings that are suitable for the construction of the public RWH facilities[76] and will support the financial sustainability by suppling the water to the target communities at the lowest available tariff.

In terms of maintenance costs for the household/community RWH facilities under Component 1, the anticipated total maintenance cost is 20,000 Pakistan Rupees per year (around US$128). If we work on the assumption that each HH level system benefits 8 people, this means the contribution for use would be approximately 200 Rupees

[76] In the previous version of the proposal, this sentence said "which can be accessed without a fee". This meant 'the project can access the public buildings to install the RWH hardware/systems without the owners/managers of the buildings charging a fee, and without any access fees for people when using them'. This has been removed, and this note added, for clarity.

per month, per person (about US$1.30). People have indicated so far in consultations that they are willing to pay such an amount for the system, and is within the willingness to pay estimations provided in Annex 2.

As explained in Part I, poverty and lack of access to water are the main selection criteria for beneficiary households under Component 1. Though the willingness to pay work shows that people ***would*** be willing and able to pay the maintenance costs (about US$1.30 per month). However, UN-Habitat recognises the potential for dissonance – people may say that they are willing and able to pay, but actually be unable to do so when the services have been provided. In this case, people would not be deprived of water services. Because the project will train people to perform maintenance tasks, if they are unable to pay in cash they will instead contribute their labour to ensure the continued functionality of the system. Moreover, consultations undertaken in the formulation of the project, and discussions with Shehersaaz, the executing partner NGO, which is deeply connected with the communities, indicates that the communities are, in the main, close-knit, with a culture of cooperation.

The agreements of cooperation signed with WASA and TMN (in Rawalpindi and Nowshera, respectively) will commit them to providing for the minimal cost of ongoing maintenance of the systems after the project has closed. WASA/TMN will work with the public building managers (and their respective departments) to ensure that this management takes place.
Note that the Constitution of Pakistan delegates the responsibility for water supply (*inter alia)* to the provincial level. As such, with only a few rare exceptions, the national government doesn't provide funding for water. For this reason, no activity has been included in the project proposal on mainstreaming/integrating the project's activities into national budget lines. Indeed, RWH has begun to find its way into some national policy documents, but thus far there has been minimal uptake on the ground. This project is part of the effort to address this. The project will, however, use its planning activities under Component 2 and Component 3 to advocate for and promote the integration of RWH approaches into regular government budgets (at the district and provincial level) and use the national level to encourage nation-wide replication.

As mentioned above, UN-Habitat will enter into Agreements of Cooperation with the executing entities of the project, including Shehersaaz, WASA and TMN for the household/community and public rainwater harvesting systems. In addition to this, UN-Habitat will simultaneously sign a Memorandum of Understanding that enters the executing agencies into an agreement to provide maintenance for the facilities.

Technical sustainability: The water harvesting facilities will be designed and constructed using resilience and building back better principles. This will enhance the durability/sustainability significantly. Besides that, formal partnerships with target municipalities will be established for the maintenance of facilities. A Settlement WASH Committee (SWC) will be formulated. This is an inclusive group of elected community members from the rainwater harvesting households to a) monitor the usage of rainwater facilities in their settlements, b) discuss WASH development issues faced by the entire community c) seek support from city authorities. SWCs, as they are elected directly by the people are answerable and accountable to the people who elected them. Through tools like mass meeting and social audit business plans for maintenance and replacements of systems, representatives keep communities informed about the implementation of their decisions and status of resource utilization. SWCs will be registered with city authorities to create institutional linkages, make rainwater harvesting as a part of city water supply programme. It encourages women participation in SWCs. Community training will be provided to SWCs and operations manual for SWC will be developed and orientation will be provided. Moreover, a community-based model for managing and maintaining household-level rainwater harvesting facilities is proposed: women and youth groups will management and maintain these facilities. Therefore, trainings will focus on these groups. Below table provides an overview of project outputs and arrangements to sustain / maintain these.

Table 17: Overview of outputs and arrangements to sustain / maintain these

Expected concrete output/intervention	Arrangements to sustain / maintain activities / interventions
Output 1.1. (concrete) 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	Development of community plans for operation and maintenance and agreement established between communities and municipal government about maintenance arrangement and built community-based skills on operation and maintenance. Guidelines/operational manual on the use and maintained of Rainwater Harvesting Systems will be developed in local languages
Output 1.2. 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community	

members (especially women and youth) trained and have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting facilities at community level, and to reduce waste in drainage channels through awareness raising campaigns	
Output 1.3. Awareness campaigns to increase knowledge in all target communities to reduce dumping of solid waste in drainage channels	Community awareness raising is included in all the relevant policies. By capitalizing upon these policy provisions, by building partnerships with and inclusion of community groups, local civil society organizations and local government institutions and service providers, it is expected that the project will provide necessary kick starter and these groups for having direct stakes and benefits in reducing the risks of flooding and contamination levels, will continue the awareness initiatives among sustainably be reduced.
Output 2.1. (concrete) 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	As per LOA/MOA, the Beneficiary Community or Govt. Department will be responsible for the operation and maintenance of infrastructure and technology.
Output 2.2. Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors	Formally approve the plans as part of district / city development plans. During the preparation greater involvement of planning bodies (units) expected and promoted to enhance sense of ownership
Output 2.3. - 50 government officials, including 20 women trained including 20 women and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity developing spatial plans	Guide developed and widely used tools localized/updated to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity developing spatial plans
Output 3.1.- 100 government officials, including 50 women trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.	
Output 3.2. - One National urban strategy focused on climate change / disaster risk reduction, with comprehensive gender mainstreaming developed One National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed	Guidelines for spatial / urban planning considering climate change / disaster risks developed using internationally accepted tools and guidelines such as International Guidelines on Urban and Territorial Planning.

K Environmental and social impacts and risks

The proposed project seeks to fully align with the Adaptation Fund's Environmental and Social Policy (ESP) and the Gender Policy (GP). Further to part II.E above on project compliance with national technical standards, outlined below is a summary of the findings of the screening of all components and activities / interventions against the 15 AF principles to identify potential environmental and social risks and impacts. With this information, the entire project risk has been categorized. Because of the nature of the proposed interventions (water harvesting facilities under output 1.1 and 2.1), the entire project is currently categorized as a medium risk (Category B) project. The proposed water harvesting facilities are concrete interventions that carry the risk of potential adverse environmental and social impacts. Specific concerns are related to equal access to water, informal use of construction sites and negative impact on natural habitats, biodiversity and land and soil. As for the activities under the other outputs, potential risks concerns are related to equal access to benefits and avoidance of adverse impacts on marginalized and vulnerable groups and women, but these risks will be mitigated. The below table provides an overview of the 15 AF principles and a checklist for further assessment, presented in Annex 5. In the ESP compliance Annex 5, screening outcomes of all project activities / interventions against the 15 AF principles are discussed in detail.

Table 18: Checklist of the 15 AF principles:

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance

Compliance with the Law	X	
Access and Equity		X
Marginalized and Vulnerable Groups		X
Human Rights	x	
Gender Equity and Women's Empowerment		X
Core Labour Rights		X
Indigenous Peoples	x	
Involuntary Resettlement		X
Protection of Natural Habitats	x	
Conservation of Biological Diversity	x	
Climate Change		X
Pollution Prevention and Resource Efficiency		X
Public Health		X
Physical and Cultural Heritage		X
Lands and Soil Conservation	X	

Table 19 – Environmental and Social Policy Risks and Proposed Mitigation Measures

This table has been prepared to provide an at-a-glance overview of the risk screening, potential impact and management and mitigation measures that are being proposed to ensure compliance with the Environmental and Social Policy of the Adaptation Fund. The full assessment is provided in Annex 5.

Please note that monitoring of results takes places at baseline, mid-term and end, as shown in Table 23, in Part III, Section E. Table 19, below, shows the additional measures that will be put in place, over and above periodic monitoring, to ensure compliance with the Environmental and Social Policy of the Adaptation Fund. It also shows the responsible party. It should also be noted that any complaint or grievance received (per the process outlined in Annex 5) will trigger a response or investigation by UN-Habitat. This is outlined there – the table below only refers to regular/periodic monitoring. Please also see Table 5.12 in Annex 5 for more details on monitoring

Adaptation Fund Environmental and Social Principle	Possible Risks AND Impact	Preventive, mitigation and management measures proposed	Monitoring frequency and responsible party
Compliance with the Law	The project has assessed compliance with the law in Part II, Section E and found that the project **does not** carry any realistic risk of failing to comply with the law. All facilities will be constructed/installed with the consent of the land overner or government agency responsible for the buildings (with the consent process currently ongoing – examples provided in Annex 6)	No risks have been identified and compliance with the law has been checked and described in Part II, Section E. Consultations with numerous government agencies did not reveal any forthcoming laws that would affect the project, and the role of numerous government agencies on the Project Steering Committee will ensure that an forthcoming changes in the law can be anticipated by the project.	The PSC (which takes place annually and can be convened for special meeting upon the Chair's request to address urgent issues) will inform UN-Habitat and the executing entities of any new/forthcoming laws or regulatory changes that will affect the project implementation. The executing entities will be contractually obliged, through the Agreements of Cooperation, to ensure that their activities remain within the boundaries of the law
Access and Equity	***Risk:*** There is a potential risk that, without risk avoidance or reduction measures, for the target beneficiaries to benefit inequitably, or for some groups to be excluded altogether. ***Impact:*** Women would be impacted to a greater degree than men, as evidenced by experiences elsewhere in	Communities are to be trained to operate and manage the RWH units under Output 1.1 as a means to reduce the potential for inequitable access. Women are being given an equal role in the management. Community planning has been included in the project design as a means to enhance ownerships and reinforce principles of equitable	Risks under access and equity and marginalised and vulnerable groups will be monitored quarterly, or on each major field visit (to conduct training, construction, etc), whichever comes first, to ensure compliance. Under Output 1.1,

	Pakistan (See impact assessment, Annex 5)	access	Shehersaaz will have the primary responsibility for monitoring. Under Output 2.1, WASA (Rawalpindi) and TMN (Nowshera) will have the primary responsibility. UN-Habitat will check these monitoring reports and feedback, and request further information, where appropriate. Monitoring will be conducted through a mix of informal interviews, focus group discussions and surveys with a representative sample of the community, as well as an open feedback session for communities (in workshops and training events) Access and equity and marginalised vulnerable groups will be monitored together for efficiency, and because of the similar and overlapping issues involved. Additionally, the establishment of gender equal water user groups is a key indicator.
Marginalised and Vulnerable Groups	***Risk:*** That women do benefit equally from the project ***Impact:*** Women would suffer maladaptation – they would still suffer a lack of access to water during water shortage periods, and the project would be exacerbating a situation where women are unequal and face more barriers ***Risk:*** That there is discrimination against Afghan migrant populations (who do not appear on official population figures in the target areas), but whose presence was evident during the community consultations ***Impact:*** Migrants may be discriminated against and not receive services, or non-migrants may receive preferential access. This would be a mal-adaptive situation for migrants and would exacerbate structural inequalities faced by Afghan migrants in society.	Women have been fully integrated into the community management, decision-making and maintenance structures designed by the project. Community plans will also be implemented to ensure the fair distribution of water. Project 'champions' in the community will be on hand to help illiterate community members (more likely to be women) to play a more active role. At no point will identification documents be checked, or records kept or passed on by the project, meaning that any Afghan migrant populations in the target area will be protected by the project while also being fully able to benefit from the services provided.	
Human Rights	The project has assessed that there are no realistic risks to human rights, or of violations of human rights, arising from the project. Pakistan is a signatory of key human rights treaties and declarations, and the project does not involve any structural alterations that could be a breach of rights.	Some general measures are to be put in place, however. The project will not hire workers under the age of 18, it will not make any structural alterations to buildings, and most importantly a full informed consent process is underway, where no construction/provision of RWH facilities will take place until consent has been obtained from the household (and government department, in the case of public buildings under Output 2.1)	As mentioned elsewhere, no construction will begin without full prior consent, the gathering of which will be completed by project inception (i.e. during baseline monitoring). Shehersaaz will gather all consent forms and will present them to UN-Habitat upon completion Annual reporting will consider any potential human rights violations. Communities have the right to withdraw their consent at any time. This will be reported to the PSC
Gender Equality and Women's Empowerment	***Risk:*** As described above, the potential for women to benefit inequitably, or face discrimination exists (as evidenced by secondary information)	As mentioned above, women will play an active and decisive role in the community management of the project, enhancing their participation, and greatly reducing the risk that they will be excluded. The	The participation of women will be recorded in every event sponsored by the project. Every meeting, training or workshop will have an attendance register that enables the project to

	Impact: As above, this would be a mal-adaptive situation for women	PSC also contains representatives of the Provincial Women's Departments, and these officials will specifically overview the project to ensure that women are being included.	determine how many men, and women (and youth) participate. This information will be gathered by the executing entity for the respective activities, and collated and reported by UN-Habitat. Reporting by Habitat (to PSC and AF) will be annual
Core Labour Rights	***Risk:*** The project will use labour from the communities for some unskilled tasks. There is a risk, without mitigation measures, that they may be underpaid, given insecure work, or face occupational health and safety risks. There is also a substantial gender pay gap in Pakistan. ***Impact:*** People may end up working excessive/unreasonable hours, without contracts, and/or for unfairly low salaries, below the minimum wage. This would exacerbate a situation in Pakistan where many people work in the informal sector for less than $2 per day. Unequal pay for men and women would exacerbate the gender pay gap that exists in Pakistan. Any of the above would exacerbate pre-existing problems that exist in Pakistan, including in the target area.	All labourers employed to work during the construction of the RWH facilities will be formalized, working under legally binding contracts, in compliance with Pakistan's labour laws and, where these are insufficient, ILO standards and guidelines. All executing entities will be contractually obliged to uphold these standards, report them to UN-Habitat and be open to periodic monitoring. Salaries paid to workers will be fair and will be well above the minimum wage. Women will be given the opportunity to work on the project and where they do, proper facilities such as sanitation will be provided for them.	All workers have appropriate, formal contracts, in compliance with the law, paid above the minimum wage, and no one under the age of 18 is employed. The executing entities are responsible for ensuring this happens, and it will be stipulated in the agreement of cooperation. UN-Habitat will provide oversight and will report annually, though there will be informal interviews with workers more regularly.
Involuntary Resettlement	***Risk:*** Risks are present without mitigation measures because under Output 1.1, because the RWH units will installed in and around people's homes. While there is no risk of resettlement arising from this, there is a risk that there may be damage to homes or disruption of access, and as such management and mitigation actions are required. ***Impact:*** People would be temporarily inconvenienced by construction activities. Damage is highly unlikely, but potentially possible, though it would be very minor in nature.	Communities will also be fully briefed on the exact nature of the construction works before they begin, including the expected duration, the disruption expected and the grievance mechanism. Consent gathering is currently ongoing (Examples provided in Annex 6). The project will guarantee continued access to homes at all times, even during construction works.	Unhindered access to homes will be maintained throughout the whole construction phase. The executing entities will be responsible for ensuring this happens, while UN-Habitat will report annually. The executing entities will provide construction plans and photographic evidence to demonstrate continued access. The project M&E officer will conduct periodic informal discussions with households to ensure that they have had unhindered access to their homes and no damage or other issues have occurred.
Indigenous People	There are no indigenous people living in the target area (as confirmed by official data and reinforced by community	No mitigation or management actions required	No specific monitoring measures included as no risks identified. Migrant populations are included

	consultations). The Afghan migrant population is covered under marginalised and vulnerable groups		under marginalised and vulnerable groups
Protection of Natural Habitats	No realistic risks to natural habitats were found. Both target areas are densely populated urban areas, with virtually no greenspace, aquatic life or other forms of biodiversity. Locations of protected areas and national parks were checked and there are none within at least a 30km radius of either project site, and there are no obvious linkages to ecosystems services from these protected areas	No mitigation or management actions required beyond those highlighted elsewhere, especially under pollution prevention and resource efficiency	No specific monitoring measures included as no risks identified.
Conservation of Biological Diversity	No realistic risks to biological diversity. See above	No mitigation or management actions required beyond those highlighted elsewhere, especially under pollution prevention and resource efficiency	No specific monitoring measures included as no risks identified.
Climate Change	***Risk:*** There could be a risk of some nominal but unnecessary emissions rising from the project. Moreover, if the project is ineffective, it will not bring adaptation benefits. ***Impact:*** A slight increase in GHG emissions	Local materials will be used throughout the construction. All hardware required by the project (i.e. tanks, pipes and pumps) are available locally in both cities, meaning that emissions relating to transportation will not be necessary. To that end, all procurement documents will emphasise the need to use locally sourced materials and avoid imports. Aside from this, no additional emissions are expected from the activities.	The agreements of cooperation will stipulate the need to use local materials. UN-Habitat will review procurement documents for compliance as and when they are issued/materials procured. Executing entities will be contractually obliged to report to UN-Habitat.
Pollution Prevention and Resource Efficiency	***Risk:*** Because the project involves construction activities with plastic tanks and pipes, and basic building materials, there is a risk that, without effective management and mitigation measures, there could be unnecessary and harmful disposal and dumping of waste and surplus construction materials. ***Impact:*** An unnecessary contribution, however small, to GHG emissions, would preventative measures.	UN-Habitat will ensure that waste materials are disposed of being the official waste management services provider. All construction workers will be trained on proper procedures to dispose of waste materials generated during the construction, to ensure that there is no risk of improper disposal. Agreements of Cooperation will stipulate that executing entities are responsible for proper disposal of waste materials and they will be subject to periodic monitoring	AoCs will ensure that all waste materials relating to construction are properly and effectively disposed of. Executing entities will report to UN-Habitat on the procedures followed during construction and this will be reviewed and if necessary inspected by the project M&E officer. Annual reporting will highlight steps taken to avoid pollution risks arising from the project.
Public Health Note – Greater detail is provided in Annex 5, recognising the complexity of the issue	***Risk:*** There are two main public health risks that could arise if management and mitigation measures are no put in place. Firstly, because water is being provided, there is a risk of contamination and improper management that could lead to the spread of water-borne	Occupation health and safety training will be provided for all construction works, and necessary safety equipment, such as boots and hard hats will be provided. This will be the responsibility of the executing entity, working under Agreement of Cooperation from	There will a report completed on occupational health and safety training given (including attendance, training materials and photographs, etc). Similarly, there will be a

	disease, and second there is a risk of occupational health and safety issues arising while construction is ongoing – especially where construction is taking place in and around people's homes ***Impact:*** Water-borne diseases are unpleasant and debilitating for people in the target area, and particularly affect those already vulnerable. A lack of occupational health and safety standards and procedures could result in injuries to workers or community members	UN-Habitat. These provisions should be seen in conjunction with those under core labour rights, and are designed to keep the construction workers safe, first and foremost. All construction sites will be demarcated, with fencing, barriers and cones, as appropriate to ensure that community members not involved in the construction are safe, and don't inadvertently walk into areas where construction is ongoing.	report on trainings given to communities in water treatment and hygiene. Executing entities will prepare these reports. UN-Habitat will collate them and report them annually.
Physical and Cultural Heritage	***Risk:*** There are no UNESCO or other listed heritage buildings in the area, but there are some historic buildings, mosques and other sites of importance to the community. There is no direct risk to these buildings, but nevertheless, management measures are required to ensure these buildings are unaffected. ***Impact:*** Though construction does not directly affect heritage buildings or areas, there could be some temporary disruption of access or appreciation of heritage buildings without management and mitigation measures.	As mentioned above, all construction sites will be demarcated effectively. Before works commence, as part of the full and informed prior consent process, the anticipated disruption to public buildings during construction will be discussed with building managers and building users/surrounding communities (i.e. parents in the case of schools). Construction workers will be trained to ensure there is minimal reduction to public building users, especially where the public buildings in question are schools, and as far as possible, construction will take place outside of school hours. In the case of mosques, no construction will take place on Fridays or at prayer times.	No specific monitoring measures included as no risks identified.
Lands and Soil Conservation	There are no discernible risks to land and soil conservation arising from the project's activities	No management activities proposed, beyond the general measures proposed in Annex 5.	No specific monitoring measures included as no risks identified.

PART III: Implementation Arrangements

A. Arrangements for project management

The following mechanisms for project execution, coordination, oversight and transfer of funds have been agreed in close coordination with the Ministry of Climate Change, as the national designated authority to the Adaptation Fund, as well as other key stakeholders at the national level, including the National Disaster Management Authority (NDMA), and the Federal Flood Commission. Stakeholders at the sub-national level have also been consulted, and these consultations are outlined in Part II, Section H.

Because of the varying relative strengths and capacities of the partner organisations, there will be numerous executing agencies in the project, and these are outlined in Table 20, below.

Table 20 - Executing entities

Output	Description	Executing Entity
1.1	5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	Shehersaaz
1.2	15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through awareness raising campaigns	Shehersaaz
1.3	Awareness campaigns in all target communities to reduce dumping of solid waste in drainage channels	Shehersaaz
2.1	50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	WASA (Rawalpindi), TMN (Nowshera)
2.2	Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to assess climate change related floods, droughts and water scarcity to plan for and manage climate change-related risks and impact in and beyond city boundaries, taking into consideration multiple sectors	NDMA
2.3	50 government officials, including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans	PCRWR
3.1	100 government officials, including 50 women trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.	NDMA
3.2	One National urban strategy focused on climate change / disaster risk reduction developed One set of National guidelines for spatial planning considering climate change / disaster risks developed	MoCC

In addition to the above, MoCC will also have the responsibility for coordination across the government system, as the designated authority for the Adaptation Fund as well as coordination with the UNFCCC. MoCC will also chair the steering committee, as outlined below.

In the early 2000's, Pakistan embarked upon an ambitious programme of decentralisation. Under this system, districts have gained greater responsibility for the delivery of public services[77]. With this in mind, the project gives responsibility to executing partners at the sub-national level to deliver the project, which will empower them and build their capacity, as well as delivering in-line with Pakistan's decentralisation reforms.

UN-Habitat is the multilateral implementing entity of the project and will provide project management support, oversight, management of fund flow and executing partners' delivery, and secretariat of the Project Steering Committee. UN-Habitat will enter into an Agreement of Cooperation with each agency mentioned in Table 20, above, to execute the respective activities that will lead to the described outputs. AoCs are a formal legal mechanism that create accountability, manage fund-flow and are the instrument that ensures executing entities deliver their activities in accordance with the project budget, workplan and in compliance with the Project's Environmental and Social and Gender Management and Compliance Plan, as outlined in Annex 5.

Legal and Financial Arrangements

UN-Habitat and the Ministry of Climate Change will sign a joint Memorandum of Understanding as a legal commitment to implement the project.

UN-Habitat will work with six different executing entities, signing one Agreement of Cooperation (AoC) to execute the respective components of the project with each of them. There will be one AoC with Shehersaaz to execute all activities under Component 1, with a total value of US$2.8million. One AoC with WASA Rawalpindi to execute the Rawalpindi-based activities under Output 2.1 and one with Tehsil Municipal Nowshera, which covers Nowshera, to execute the Nowshera based activities. Output 2.2 and Output 3.1 will be executed through and AoC with NDMA for a total of US$600,000, while PCRWR will be execute Output 2.3 through an AoC for US$100,000. There will be an AoC with Ministry of Climate Change for US$383,014 to execute Output 3.2. These Agreements of Cooperation will provide the contractual basis to ensure timely delivery, compliance with the technical designs outlined in this project document and compliance with the Environmental and Social and Gender Policy Compliance Plan, outlined in Annex 5.

The Director General, Ministry of Climate Change will chair the Programme Steering Committee (see below). Another senior official from Ministry of Climate Change will be designated the focal point for the Agreement of Cooperation to execute activities under Output 3.2 and will also sit on the PSC. The Chair, NDMA, Director, WASA, Director, TMN, Director of Shehersaaz and the Director of PCRWR will be the responsible persons for authorising payments under their respective AoCs and also for reporting to UN-Habitat.

Project Governance

At the national level, the project will report to, and be guided by, a Project Steering Committee, consisting of senior representatives from MoCC (which will be responsible as the chair), NDMA, the Federal Flood Commission, WASA, Rawalpindi and Nowshera Municipalities, the Women's Department of Punjab and Khyber Pakhtunkhwa Provinces and UN-Habitat ROAP. This membership structure ensures that there is diverse representation from the two main cities that the project will implement in, across different levels of government, and official representation by women of women's interests.

The Project Steering Committee's primary responsibilities will be to oversee and guide project implementation progress, progress against the workplan and to oversee compliance with the Environmental and Social and Gender Policy Compliance Plan. The governance structure of the project is shown below in Figure 7 To that end, the PSC will (1) approve annual work plans and review key project periodical reports; (2) will review and approve the contractual agreements, including workplans,

[77] See http://web.worldbank.org/archive/website01061/WEB/0__CO-14.HTM

with a particular emphasis on environmental and social safeguards, budgets and payment schedules; (3) review any deviations and consider amendments to workplans and contractual arrangements.

The PSC will meet on inception and then at least once per year throughout the project implementation and whenever needed to fulfil the above functions. The PSC will have the power to convene ad hoc meetings in the event that serious risks or potential for risks to Environmental and Social and/or Gender policy compliance occurs.

Project Oversight

Project oversight lies with the PSC in-country and ultimately with UN-Habitat as the multilateral implementing entity. This function is led by the responsible officer from UN-Habitat's Regional Office for Asia and the Pacific, supported by Project Management Officers (for financial management matters) and UN-Habitat's headquarters Monitoring and Evaluation Unit, Programme Division, the Climate Change Planning Unit and the External Relations Division (regarding advocacy, outreach and communication). This will ensure that project management complies with UN-Habitat standards and requirements, particularly regarding financial management, timely delivery and the Environmental and Social and Gender Policy Compliance Plan.

Project Execution

The national level project execution team will be comprised of a project manager, who will be recruited in compliance with UN rules and regulations and approved by the PSC. The project team will be responsible for managing project activities and ensuring compliance with all commitments contained in the project document, particularly the Environmental and Social and Gender Policy Compliance Plan (which ensures compliance with the 15 principles of the Adaptation Fund Environmental and Social Policy and the Gender Policy of the Adaptation Fund). The project team will also take the lead in monitoring the activities implemented through regular visits to the field sites in Rawalpindi and Nowshera. The Project Team will develop a Monitoring and Evaluation Plan during the project's inception phase, which will be distributed to target stakeholders and reported to the PSC.

There will then be a Municipal Execution Unit which will support day-to-day execution activities at the field sites. This unit will also be the main coordination point with the Union Councils, the local government bodies in Rawalpindi and Nowshera. It will also work together with Union Councils to guide the community level works, especially in Outputs 1.1 and 2.1.

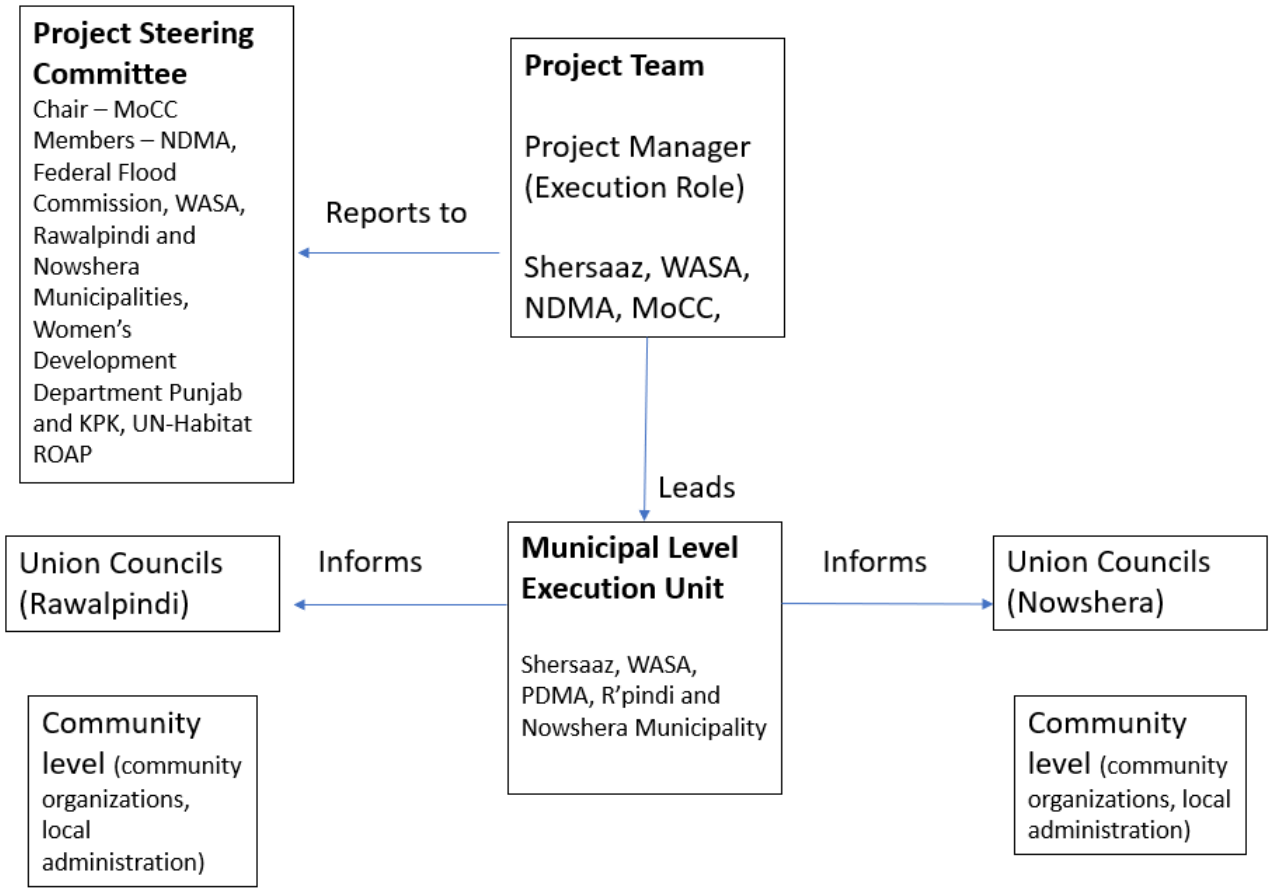


Figure 7 - Management structure

Community Management

At the community level, the executing entities will train community members (through the activities described under Output 1.2) to maintain the community/household scale RWH systems throughout the remainder of the project, and after it is complete. A water-user committee will be formed in each community, comprised of an equal number of men and women. This committee will take ownership of the system, and be responsible for its maintenance. In particular, this committee will transparently manage the small user fees charged for the system (not more than 200 Pakistan Rupees per person per month) and take the lead in initiating and overseeing the periodic maintenance. This is particularly important in the period just before the rainy season. As outlined in Annex 1, annual cleaning of pipes and filters, among other tasks, needs to take place immediately prior to the onset of the monsoon season.

In the public RWH systems under Component 2 of the project, in most cases the buildings in question have a maintenance committee. In such cases, it will become the responsibility of the maintenance committee to undertake the basic maintenance of the system. Where no maintenance committee exists, a new one will be formed. In these cases, however, the building management will not be responsible for the collection of fees (which is instead the role of TMN/WASA in Nowshera/Rawalpindi, but they will just manage the maintenance.

B. Measures for financial and project risk management

The status of financial and project risks, including those measures required to avoid, minimise, or mitigate these risks, will be monitored throughout the project. They are also discussed further in Part III, Section D on Arrangements for Monitoring, Reporting and Evaluation, and in Annex 5, the Environmental and Social and Gender Policy Compliance Plan.

Table 21 - Risk management measures

	Category and Risk	Rating: Impact/ Probability 1: Low 5: High	Management/Mitigation Measure
1	Environmental/social: Current climate and seasonal variability and/or hazard events result in infrastructure construction delays or undermine confidence in adaptation measures by local communities	Impact 3, Probability 1	Current and projected future climate change, variability and extremes have been thoroughly considered in the design of the project's activities. The detailed concept designs for the household and community RWH units provided in Annex 1 demonstrate or describe how they will be functional in climate conditions more extreme than those presently faced in the target areas. Both community and public-building RWH units have been consulted extensively with communities and government agencies. These consultations are described extensively in Part II, Section H. Moreover, the project will be executed by national entities who employ national planners and engineers, who are familiar with the climate in Rawalpindi and Nowshera. In Pakistan, the rainy season is short, running for only 3-4 months per year, and construction works will primarily take place during the dry season.
2	Institutional: Loss of government support (at all levels) for the project (activities and outputs) may result in lack of prioritization of AF project activities.	Impact 3, Probability 2	The Establishment of a Project Steering Committee, chaired by the Director General, Ministry of Climate Change, and the overall design of the project, which engages a number of different government agencies at different levels (i.e. national and sub-national) ensures that there is broad engagement of the government throughout the project's implementation, without concentrating too much in the hands of one government agency or another. UN-Habitat will enter into a legally binding MoU with MoCC, as well as Agreements of Cooperation with NDMA, WASA and Shehersaaz, an NGO. These AoCs are the legal basis for UN-Habitat to transfer funds to the executing entities and ensure that the activities described in this proposal are executed in a timely manner in compliance with, *inter alia*, the environmental and social and gender policies of the Adaptation Fund. There are Union Council elections scheduled in November, so there is potential risk of a change in circumstances at UC level. However, the UC doesn't have a mandate for water supply, and at present there is no evidence that there are any outcome of the UC elections will prevent the implementation of the project. Nevertheless, the UC will be given a role at the community level, to ensure their buy-in, as the most locally elected body in Pakistan.
3	Institutional: Capacity constraints of local institutions may	Impact 2,	The project has strong capacity building, training and awareness raising

	limit the effective implementation of interventions	Probability 1	components. The project's outputs 1.2, 1.3, 2.3, and 3.1 all relate to training government officials at various levels, or raising community level awareness directly. These activities have been designed into the project specifically to address capacity problems and mitigate the risk that they might have on the successful implementation of the project.
4	Institutional/social Communities that have given their consent to the project may revoke their consent (which they have the right to do) or may become unhappy that the project doesn't match their expectations	Impact 4, Probability 1	The communities targeted by this proposal have been consulted extensively in the formulation of both the concept note and the full proposal to gauge and gain their buy-in to the proposed project. As a result of this process, those consulted have given their consent, and no works will begin without full informed prior consent of **all** community members. There will be continued engagement with communities throughout the project to ensure that the project matches their expectations and they are satisfied with its delivery. Moreover, the execution of the project will use elements of the People's Process, where communities use their labour to perform unskilled and semi-skilled tasks, which repeated projects have shown to increase the buy-in of target communities.
5	Institutional/social: Disagreement amongst stakeholders with regards to adaptation measures (infrastructure) and site selection.	Impact 2, Probability 2	There has been unanimous agreement among the stakeholders consulted in the development of the concept note and full proposal that water scarcity and quality are critical adaptation challenges for communities in Rawalpindi and Nowshera. All stakeholders have been supportive of introducing RWH, which is not presently used in either location, but has been used successfully both in other areas of Pakistan and other countries.
6	Institutional: Communities may not adopt activities during or after the AF project, particularly infrastructure maintenance	Impact 1, Probability 2	The RWH interventions will be institutionalised through WASA, which has the mandate to provide water in both target areas (from its respective Punjab and KPK branches). The project seeks to operationalise and expand a proposal that WASA developed autonomously, so it is in line with one of their proposed adaptation approaches anyway. The communities will be organised to ensure small-scale maintenance and day-to-day operation takes place autonomously without the need for government budget or resources. The communities themselves will also have a decision-making role at the local level, and WASA will be represented on the project's steering committee.
7	Financial: Complexity of financial management and procurement. Certain administrative processes could delay the project execution or could lack integrity	Impact 2, Probability 2	The financial management arrangements have been defined during the full proposal development. The detailed budget is provided in Part III, Section G. The payment schedule is provided in Part III, Section H. UN-Habitat's control framework, under the financial rules and regulations of secretariat agencies of the United Nations (such as UN-Habitat) ensure documentation of clearly defined roles and responsibilities for management, internal auditors, the governing body, other personnel and demonstrates prove of payment / disbursement. These

			rules will be annexed to agreements of cooperation, and can be provided to the Adaptation Fund upon request. Procurement will by done by the executing entities as agreed in the Agreements of Cooperation in accordance with UN Procurement Procedures. All expenditures, costs and payments will be recorded in US Dollars. It should be noted that there have recently been substantial fluctuations in the exchange rate of Pakistan Rupees and US Dollars. All accounting will be done according to the exchange rate at the time the payment tranche has been made from the AF to UN-Habitat.
8	Institutional: Delays in project implementation, and particularly in the development of infrastructure interventions	Impact 2, Probability 3	While delays are always possible, the involvement of multiple government agencies under several agreements of cooperation will reduce the risk of delay. Moreover, the project does not have a high precedence relationship, meaning if activities under one output get delayed, they do not prevent activities under another output from getting underway – for example, if there were minor delays to the community/household level rainwater harvesting units, these delays would not prevent the district level rainwater harvesting activities from being executed. Moreover, the project seeks to learn from other projects that have been implemented in Pakistan, as described in Part II, Section F
9	Institutional: A lack of coordination between and within national government Ministries and Departments.	Impact 2, Probability 3	The project's structure, and especially the Project Steering Committee have been designed to ensure that different government agencies are mandated and incentivised to work collaboratively
10	Legal Delays or barriers in gaining approval for infrastructure and housing due to delays in the development process or due to land tenure issues.	Impact 3, Probability 1	No legal issues are foreseen. The concerned agencies have demonstrated their support in writing (See Part IV). The legal context is laid out in Part II, Section E. The PSC will provide guidance to the project to ensure there is no risk of failing to comply with the law.
11	Security The security situation reduces access to the target sites, and/or makes it unsafe to visit	Impact 4, Probability 1	The security situation has been improving in Pakistan in recent years, and at present there are no limitations on visiting either target sites (except that international UN staff must travel by armoured vehicle to Nowshera), according to the UN Department of Safety and Security. International and national staff of UN-Habitat made numerous visits to both target sites during the preparation of the proposal, and security concerns were raised at all levels in the consultations. Unanimous feedback was received that there has been a substantial improvement in recent years and that there are no security problems foreseen. While the future security situation in the country is hard to predict and beyond the control of the project, there is no evidence that it will deteriorate in the future. UN-habitat complies with the rules and procedures laid down by UNDSS, but these

			procedures don't apply to government agencies. Both WASA and Shehersaaz have local presence in both target cities, so even if there are limitations on travel, for example, the project's execution will not be affected.

C. Measures for the management of environmental and social risks and compliance with the Gender Policy of the Adaptation Fund

Part II, Section E and Section K outline the screening and assessment process that has been done based on analysis of the law and consultations to identify the project's potential for risks. Part II, Section H describes the consultation process that has been undertaken to ensure inter alia inclusion of potentially marginalised groups, including women and migrant communities. These consultations and analysis are reflected throughout the project design.

Based on a screening against the principles environmental and social policy of the Adaptation Fund, the project has been categorised as a "B" category project in terms of the environmental and social risks it poses. Further information on the risk screening is provided in Part II, Section K, and in Annex 5.

An Environmental and Social and Gender Policies Compliance Plan has been developed and is presented in Annex 5. This plan outlines how the project, once underway, will continuously monitor risks to compliance with the environmental and social and gender policies, which the Annex that precedes it identifies and analyses the risks that have been identified in the formulation of the project. The plan also describes the amount budget to ensure compliance and roles and responsibilities for monitoring and management arrangements to ensure the project is in compliance with the Environmental and Social and Gender Policies of the Adaptation Fund throughout its implementation.

D. Arrangements for monitoring, reporting and evaluation and compliance with the Environmental and Social, and Gender Policies of the Adaptation Fund

The proposed project will comply with formal guidelines, protocols and tools used and adopted by the Adaptation Fun and UN-Habitat and all laws and policies of the Government of Pakistan. A monitoring and evaluation framework, based on the targets and indicators outline in the Project Results Framework (presented below in Part II, Section E).

In addition, all risks identified in the project's Environmental and Social and Gender Policy Compliance Plans, including all measures that will be taken to avoid, manage or minimise environmental and social risks, will be monitored throughout the project (at the activity level and through annual project performance, mid-term and terminal reports). The same applies to financial and project management risks and their respective mitigation measures.

Monitoring and Evaluation Framework

UN-Habitat will ensure the timeliness and quality of project implementation. The oversight and general guidance of the project will be provided by the Project Steering Committee. UN-Habitat will ensure that the project team and the key national executing partners are fully briefed on the M&E requirements.

The monitoring and evaluation framework prepared by the project will be a key tool to ensure that the project is being implemented in compliance with its Environmental and Social and Gender Policy Compliance Plan (see Annex 5). The project's monitoring framework will also ensure that sex disaggregated data is collected throughout the implementation, and that indigenous people have been included in project's execution.

The audit of the project's financial management will follow UN finance regulations and rules and applicable audit policy and practice.

The M&E plan is outlined in Table 22, below.

Table 22 - M&E Plan

Type of M&E activities	Responsible parties	Timeframe	Reporting	Budget
Inception Workshop and Report, and measurement of baseline data	Project Manager Project Steering Committee UN-Habitat ROAP	Workshop: within first two months of start Report: within first quarter	Inception Report	$3,000 ($1,000 from ESP and GP compliance, $1,000 from travel related to execution and $1,000 from ROAP project support cost)
Periodic status/ progress reports	Project Manager	Annual, mid term	Annual report, Mid-term review/report	$10,000 (consisting of $6,000 from travel relating to execution and $4,000 from project supervision missions, per the detailed budget)
Compliance with ESP and GP	Project Manager	Annual, as well as upon receipt of complaints, grievances or queries	Mid-term, final, terminal	$32,000 (as per detailed budget and detailed separately in Annex 5)
Final Evaluation	Project Manager UN-Habitat ROAP Project Steering Committee External Consultants	Final: At least three months before the end of project implementation	Final Evaluation Report	$25,000 (as per detailed budget)
Project Terminal Report	Project Manager UN-Habitat HQ Local consultant	At least three months before the end of the project	Terminal Report	$2,800 ($1,800 from Evaluation support (HQ) and $1,000 from travel relating to execution
Community consultations / workshops / training	Project Manager	Within one week after each event	Documentation	No additional cost (beyond the cost of the consultations/workshops/training, as listed in the detailed budget)
Visits to field sites	UN-Habitat ROAP Project Steering Committee Government representatives	At least every six months	Field Report	$7,500 (from project support cost (ROAP), as per the budget) **Total - $80,300**

For the M&E budget and a breakdown of how implementing entity fees will be utilized in supervision of M&E tasks, see the detailed budget in Part III, Section G. For related data, targets and indicators, please see the project proposal results framework in Part III, Section E.

Participatory monitoring mechanisms will be established for the collection and recording of any data necessary to support the M&E indicators. All data gathered during the formulation of the project, including the infrastructure designs, will be made available to the Project Steering Committee for its reference at the inception and throughout the project.

There will be periodic data gathering throughout the project, and this will involve communities as much as possible, ensuring that the M&E system of the project is as participatory as possible. Project site visits will be conducted by both UN-Habitat and the executing entities, with the full participation of communities, to build a shared understand of the on-ground reality.

The Project Manager will review the M&E Plan during the project's inception phase and make refinements if necessary. The reviewed and finalised plan will be distributed and presented to all stakeholders during the initial workshop. The emphasis of the updated M&E plan will be on (participatory) outcome/result monitoring, project risks (financial & project management risks and environmental social safeguard risks), learning and sustainability of the project, and informing stakeholders of the need to always gather sex-disaggregated data.

Periodic monitoring will be conducted through visits to the intervention sites, in addition to the formal reporting schedule outlined above. The Project Manager will visit the field sites at least every 3 months and staff from the project may make additional visits. The only possible exception to this is ***if*** the security situation deteriorates to a point where internationals are prevented from travelling by UNDSS, in which case a national representative of UN-Habitat will travel instead.

UN-Habitat will ensure that all executing partners are fully briefed on the M&E requirements to ensure that baseline and progress data is fully collected and that a connection between the Knowledge Management component and M&E is established. The Agreements of Cooperation will reflect these, as well as requirements under the Environmental and Social and Gender Compliance Pan, as outlined in Annex 5.

An Annual Project Performance Review (PPR) will be prepared to monitor progress made since the project's start and in particular for the previous reporting period. The PPR includes, but is not limited to, reporting on the following:

- Progress on the project's objective and outcomes – each with indicators, baseline data and end of project targets (cumulative);
- Project outputs delivered per project outcome (annual);
- Lessons learned/good practice;
- Annual Work Plan and expenditure;
- Annual management;
- Environmental and social risks (i.e. status of implementation of Environmental and Social and Gender Compliance Plan, including those measures required to avoid, minimize, or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary);
- The engagement of women and migrants
- Project financial and management risks (same as per above).

A **Terminal Evaluation** will take place as the last activity before the operational closure of the project in accordance with Adaptation Fund guidance and following UN-Habitat practices based on the OECD DAC framework. The terminal evaluation will focus on the delivery of the project's results, as initially planned and then reflected in the M&E framework, including the implementation environmental and social mitigation measures The terminal evaluation will assess the impact and sustainability of results, including their contribution to capacity development and the achievement of adaptation benefits.

The **reports** that will be prepared specifically in the context of the M&E plan are:

(i) the M&E plan,
(ii) the project inception report,
(iii) the Annual, and terminal project performance reports and
(iv) the technical reports.

E. Project results framework

Table 23 - Results Framework

Expected Result	Indicators	Baseline data	Targets	Risks & assumptions	Data collection method	Frequency	Responsibility
Project objective: <u>The main objective</u> of the proposed project is to "enhance community, local and national-level urban climate change resilience to water scarcity, caused by floods and droughts in Rawalpindi and Nowshera cities."							
Project component 1: Community level activities: Enhance community- and household-level flood resilient water harvesting facilities (using innovative techniques) and to strengthen capacities to plan, construct, operate, maintain and replicate these.							
Outcome 1.1 Increased adaptive capacity within the water sector at community level – 38,885 people – at least50% (19,443) of whom women - benefitting directly from rainwater harvesting facilities (7 people per household) and around 200,000 indirectly In line with AF outcome 4	Community adaptive capacity level increased through continuous water availability during flood periods	People have minimal capacity to adapt autonomously or through external support to water quality issues during flood periods	All target communities have continuous water availability throughout regular and mega flood periods	R – Beneficiary households move A – Communities will continue to take responsibility for upkeep and maintenance	Visits to communities, formal and informal discussions, photographs	Baseline, annual, mid-term and end	Shehersaaz, UN-Habitat
Output 1.1.1 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	No. of HHs with new RWH facilities experiencing reduced impacts from poor water qualities resulting from floods	No HHs have RWH facilities and all experience poor quality water during regular and mega floods	5,000 households (38,885 people, 19,443 women) have RWH facilities	R – Beneficiary households move A – Continued community support. Government does not make major investment in improved water supply	Visits to communities, formal and informal discussions, photographs	Baseline, annual, mid-term and end	Shehersaaz, UN-Habitat
Outcome 1.2 Strengthened awareness of flood and water risks and impacts and how to address these at community level and ownership of rainwater facilities built. In line with AF outcome 3	Government and community capacity improved through plans, guidelines and training	Awareness of solutions to address flood risks and poor water quality is low	38,885 people (19,443 women) have the requisite knowledge to adapt to the impacts of flooding, especially in water quality	R – Migration means that community capacity is not retained A – People will be active agents for retaining and passing on knowledge	Ownership documentation, training reports, photos	Baseline, annual, mid-term and end	Shehersaaz, UN-Habitat
Output 1.2 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained, have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through	15 plans developed, 300 community members, including 150 women, trained, and 1 set of guidelines developed (knowledge product)	There are no plans in place, no guidelines to support local government or communities and individual knowledge/capacity is low	15 Community plans developed and adopted, 300 community members, including 150 women, have the required capacity and guidelines are well understood. The guidelines developed are owned by the government and are ready for replication	R – Personnel or institutional changes result in guidelines not being adopted A – That guidelines and knowledge will translate into autonomous actions at the community level	Finalised and published guidelines in English and Urdu, training reports, photographs	Baseline, annual, mid-term and end	Shehersaaz, UN-Habitat

awareness raising campaigns			in other areas				
Output 1.3 Awareness campaigns to increase knowledge in all target communities to reduce dumping of solid waste in drainage channels	Campaign materials produced	There are no regular or recent awareness campaigns	All target communities have benefitted from regular and consistent awareness campaigns through demonstrating greater levels of knowledge of effective solid waste management	R – New people move to the area, who has not benefitted from awareness raising. Lack of other alternatives mean people continue old practices A – Awareness raising and campaigns can be sustained beyond the project's implementation period	Awareness materials produced	Annual	Shehersaaz

Activities

Activities under Output 1.1

1.1.1 Procurement of necessary tanks, pipes and other necessary equipment

1.1.2 Engineer's survey to confirm that conditions are the same as during the proposal, to review structures and to revise/update detailed drawings

1.1.3 Site visits to reconfirm initial engineer's survey and to ensure that there have been no substantial changes since full proposal development

1.1.4 Discussions with communities as part of the consent process to ensure that construction can begin with full informed prior consent

1.1.5 Installation of tanks, pipes and other physical equipment

Activities under Output 1.2

1.2.1 Training for community members on use of RWH equipment and organising community water use groups, where necessary

1.2.2 Launching improved solid waste management collection in target communities

1.2.3 Community scale guidelines developed and 'champions' identified to support community members who may not be literate

1.2.4 Develop community-scale plans including consultations, site visits, drafting plans and consultations to finalise

1.2.5 Develop guidelines (knowledge capturing/sharing activity)

1.2.6 Finalise, share, and promote replication of guidelines (knowledge capturing/sharing activity)

Activities under Output 1.3

Milestones

Activities under Output 1.1 begin by Month 12 complete by Month 42

Activities under Output 1.2 begin by Month 12 complete by Month 42

Activities under Output 1.3 begin by Month 6 complete by Month 42

1.3.1 Develop a campaign strategy 1.3.2 Develop appropriate awareness raising materials 1.3.3 Develop an agreed strategy to continue awareness raising, using local resources, beyond the timeframe of the project 1.3.4 Distribute the awareness raising materials/campaign							
Project Component 2: District / city level activities – Enhance city and district-level water harvesting facilities in public buildings and on water storages in public gardens, develop district / city level spatial strategies as tool to assess climate change related floods, droughts and water scarcity to plan for and manage climate change risks and to strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens.							
Outcome 2.1 Increased adaptive capacity within the water sector at district / city level by identifying water management structures recommended on other critical interlinked structures through spatial planning In line with AF outcome 4	Capacity increased at the district/municipal level	Capacity at the district/municipal level is severely limited and water management during flood periods is a critical challenge	Adaptive capacity through public RWH facilities is in place	R – Population growth exceeds projections A – Continued access to and cooperation from public buildings	Site visits, training reports, engineer's reports	Baseline, annual, mid-term and end	WASA, UN-Habitat
Output 2.1. 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	No. of public RWH facilities constructed	There are currently no planned or formal RWH systems in public buildings, and RWH is not commonly practiced in the target areas.	50 District/city level RWH facilities constructed and functional, benefitting xx,xxx people (of whom, xx,xxx women)	R – Building use changes, or future changes in management of the public buildings results in reduced or minimised access A – Guarantees given by management of public buildings at the time of full proposal preparation continue after the project.	Site visits, photographs and engineer's reports	Annual (once construction begins), final	WASA, UN-Habitat
Outcome 2.2 Strengthened urban level government capacity to reduce climate change related flood and drought risks, also beyond city boundaries In line with AF outcome 2	Increased government decision-making capacity at the district/municipal level	There is very little capacity for informed decision-making relating to climate change and its impacts on urban areas	District/municipal capacity for planning and decision making increased through strategies and guidelines	R – Political or personnel change means that plans are not fully implemented A – Continued political support and cooperation	Training reports, completed guidelines and plans	Annual, mid-term and final	NDMA, UN-Habitat
Output 2.2 Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive	No of decision makers/government staff with increased knowledge through the two strategies	There is no formalised spatial planning approach and what planning there is does not consider climate change.	Spatial strategies that comprehensively increase knowledge and consider the future impacts of climate change have been developed and adopted,	R – Political or personnel change means that plans are not fully implemented	Published document, media release	Annual (once complete), final	NDMA, UN-Habitat

water harvesting plans.			and provide guidance for climate-resilient investments in the future				
Output 2.3 50 government officials including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans	No. of officials trained, disaggregated by gender, guidelines developed and adopted	Training has not been provided and government officials' knowledge of RWH is low	50 officials, including 20 women, trained on planning construction and maintenance, as well as developing spatial plans. Training manual/guidelines in place that can be used in other areas.	R – Personnel changes mean training/resultant capacity is not retained. A – Women, once trained, will have sufficient decision-making authority	Training documents and materials, photos	Baseline, annual and final	WASA, UN-Habitat
Activities **Activities under Output 2.1** 2.1.1. Procurement of necessary tanks, pipes and other physical equipment 2.1.2 Site visits to reconfirm engineer's survey 2.1.3 Installation of tanks, pipes and other physical equipment 2.1.4 Training for managers of public buildings 2.1.5 Develop standard operating procedures with an emphasis on equitable access, inclusion of potentially marginalised groups – especially women, and health and hygiene standards. 2.1.6 Workshop to publish standard operating procedures for use of public RWH facilities **Activities under Output 2.2** 2.2.1 Conduct data gathering for MHVRA 2.2.2. Data analysis of MHVRA 2.2.3 Publish initial findings and hold workshops to confirm and raise awareness 2.2.4 Conduct spatial analysis, using data gathered 2.2.5 Publish initial results, develop a list of priority actions for support by other national/international sources of finance 2.2.6 Confirmatory/validation workshops **Activities under Output 2.3** 2.3.1 Rapid capacity analysis and training needs assessment of district/municipal level staff 2.3.2 Agree list of trainees, especially considering the inclusion of women 2.3.3 Develop, agree and finalise training materials 2.3.4 Develop guidelines/manual to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans, emphasising equitable access, inclusion of potentially marginalised groups, including women, and prevention of public health problems 2.3.4 Provide trainings 2.3.5 Develop and agree workplans/post-training implementation plans with trainees to maximise use of the trainings				**Milestones** Activities under Output 2.1 will begin by Month 6 and complete by Month 42 Activities under Output 2.2 will begin by Month 12 and complete by Month 36 Activities under Output 2.3 will begin in month 6 and complete by Month 42			

Project component 3: National level activities - Strengthen national-level capacity to guide / direct city-level development considering climate change and disaster risks and impacts, especially water scarcity caused by floods and droughts.							
Outcome 3 Strengthened national level government capacity to reduce climate change related risks and impacts in urban areas In line with AF outcome 2	Increased government decision-making capacity at the national and provincial level	There is very limited capacity, even at national level, on the linkages between climate change and urban development	National level capacity for planning and decision making increased through training and national strategies	R – Political or personnel change means that plans are not fully implemented A – Continued political support and cooperation	Training reports, strategies	Baseline, mid-term and final	NDMA, UN-Habitat
Output 3.1. 100 government officials (with an equal number of men and women) trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.	No. of officials trained, disaggregated by gender	No government officials in the target ministries and agencies have received specific training on the linkages between climate change and urban development	100 officials, including 50 women trained and have sufficient knowledge to plan considering climate change adaptation needs and disaster risks	R – Personnel changes mean training/resultant capacity is not retained. A – Women, once trained, will have sufficient decision-making authority	Training documents and materials, photos	Baseline, annual and final	NDMA, UN-Habitat
Output 3.2 One National urban strategy focused on climate change / disaster risk reduction and with comprehensive gender mainstreaming developed One set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed	One strategy and one set of guidelines	There is currently no cohesive urban strategy on climate change and DRR. The current guidelines only relate to multi-hazard vulnerability and risk assessment	The national strategy and guidelines have been developed and approved, increasing knowledge at the national level and facilitating national-level replication	R – Political changes mean the strategy is not prioritised A – The strategy, once adopted, will then attract national and international finance	Finalised documents	Annual, final	MoCC, UN-Habitat
Activities **Activities under Output 3.1** 3.1.1 Rapid capacity analysis and training needs assessment of national level staff 3.1.2 Agree list of trainees, considering the inclusion of women 3.1.3 Develop, agree and finalise training materials 3.1.4 Provide the trainings 3.1.5. Agree workplans and follow-up with trainees to ensure that training is operationalised **Activities under Output 3.2** 3.2.1. Consultations on scope of national urban strategy				**Milestones** Activities under Output 3.1 will begin in Month 24 and Complete by Month 45 Activities under Output 3.2 will begin in Month 24 and Complete by Month 45			

3.2.2 Field missions to consult sub-national actors 3.2.3 GIS and other scientific analysis 3.2.4. Publish draft strategy and hold consultations 3.2.5 Meetings to discuss scope of guidelines 3.2.6 Draft guidelines 3.2.7. Consultations of draft guidelines, finalise and publish	

Table 24 - Timeline

Output	Year 1				Year 2				Year 3				Year 4			
Output 1.1. 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques				X	X	X	X	X	X	X	X	X	X	X		
Output 1.2. 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained and have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through awareness raising campaigns				X	X	X	X	X	X	X	X	X	X	X		
Output 1.3. Awareness campaigns to increase knowledge in all target communities to reduce dumping of solid waste in drainage channels			X	X	X	X	X	X	X	X	X	X	X	X		
Output 2.1. 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed			X	X	X	X	X	X	X	X	X	X	X	X		
Output 2.2 Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans.			X	X	X	X	X	X	X	X	X	X				
Output 2.3 50 government, including 20 women officials trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans			X	X	X	X	X	X	X	X	X	X	X	X		
Output 3.1 100 government officials (equal number of women and men) trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.										X	X	X	X	X	X	

Output 3.2 One National urban strategy focused on climate change / disaster risk reduction with comprehensive gender mainstreaming developed One set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed										X	X	X	X	X	X	

F. Project alignment with the Adaptation Fund Results Framework

Table 25 - Alignment with AF Results Framework

Project Outcome	Project Outcome Indicator	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
1.1 Increased adaptive capacity within the water sector at community level – 38,885 people – at least half of whom women - benefitting directly from rainwater harvesting facilities (7 people per household) and around 200,000 indirectly	Community adaptive capacity level increased through continuous water availability during flood periods	Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	Physical infrastructure improved to withstand climate change and variability-induced stress	**$2,000,000**
1.2. Strengthened awareness of flood and water risks and impacts and how to address these at community level and ownership of rainwater facilities built.	Government and community capacity improved through plans, guidelines and training	Outcome 3 Targeted population groups participating in adaptation and risk reduction awareness activities	No. and type of risk reduction actions or strategies introduced at local level	**$700,000**
1.3 Awareness campaigns in all target communities to reduce dumping of solid waste in drainage channels	Government and community capacity improved through plans, guidelines and training	Outcome 3 Targeted population groups participating in adaptation and risk reduction awareness activities	Modification in behaviour of the targeted population	**$100,000**
2.1 Increased adaptive capacity within the water sector at district / city level by identifying water management structures recommended on other critical interlinked structures through spatial planning	Capacity increased at the district/municipal level	Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	Development sectors' services responsive to evolving needs from changing and variable climate	**$1,200,000**
2.2 Strengthened urban level government capacity to reduce climate change related flood and drought risks, also beyond city boundaries	Increased government decision-making capacity at the district/municipal level	Outcome 2 Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks	**$500,000**
3.1 Strengthened national level government capacity to reduce climate change related risks and impacts in urban areas	Increased government decision-making capacity at the national and provincial level	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced	No. and type of targeted institutions with increased capacity to minimize exposure to climate variability	**$100,000**

		socioeconomic and environmental losses	risks	
3.2. Policies and plans improved to respond to urban climate change risks and impacts	Increased government decision-making capacity at the national and provincial level	Outcome 7 Improved policies and regulations that promote and enforce resilience measures	Climate change priorities are integrated into national development strategy	**$383,014**

Table 25a – Alignment with Adaptation Fund Core Indicators

Adaptation Fund Core Indicators	Indicative Targets	Comments
1 Number of Beneficiaries	38,885 (Direct, Output 1.1). Of which, 50% women. Up to 200,000 beneficiaries from output 2.1 (also 50% women)	This only counts the direct beneficiaries of the infrastructure in the two target areas. It doesn't count indirect beneficiaries and government officials who will benefit from training exercises. Beneficiaries for Output 2.1 are estimated, considering the density of the target areas, the latest estimates of population and the capacity of systems to be installed
2.1 No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks	4 institutions	The four agencies through which UN-Habitat will execute the project will have improved capacity; NDMA, WASA, TMN, and PCRWR. The project will also establish community level management that will be strengthened, discussed below
3.2 Modification in behaviour of the targeted population	38,885 people (19,443 women) change their behaviour through 200 water user groups (Output 1.1)	The community level management, and newly established ownership over water sources will modify people's behavior. They will have the capacity to manage their own water supply and sources, and will no longer need to source unsafe or expensive water during flood periods
3.1.1 No. and type of risk reduction actions or strategies introduced at local level	15 plans (under output 1.2) and 2 district level strategies	The 15 community plans will also involve training 300 people (150 of whom women) and will focus on the community level RWH units but will also include other pertinent risk/adaptation issues, such as improper disposal of solid waste (which blocks drainage channels) The district-level spatial plans will support local authorities to plan for the impacts of droughts and floods in the target areas
4.1 Development sectors' services responsive to evolving needs from changing and variable climate	2 Sectors	The water supply sector and the solid waste management sectors will be more able to respond to the adaptation needs to the people in the two target cities as a result of the project, particularly activities under Outputs 2.2 and 2.3
4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	5,000 + 50 infrastructures (under Outputs 1.1 and 2.1)	The RWH units (considered infrastructure) will be new, rather than existing, but their primary purpose is to augment existing infrastructure to provide continued access to clean water during flood periods

7. Climate change priorities are integrated into national development strategy	1 national strategy and 1 set of guidelines developed	The national strategy will unite climate change and DRR agendas while the guidelines will enhance the capacity of staff at the national level.

G. Detailed Budget

Brief Description	Cost	Year 1	Year 2	Year 3	Year 4	Annual Total
5,000 community/HH RWH Units installed	2,000,000	125,000	910,000	855,000	110,000	2,000,000
8 union council-level community plans developed inc training and guidelines	700,000	85,000	265,000	250,000	100,000	700,000
Awareness campaigns in all target communities	100,000	10,000	50,000	20,000	20,000	100,000
Outcome Total	2,800,000	220,000	1,225,000	1,125,000	230,000	2,800,000
50 district-level RWH facilities	1,200,000	90,000	605,000	445,000	60,000	1,200,000
Two district / city-level spatial planning strategies developed	500,000	0	200,000	215,000	85,000	500,000
50 govt officials trained and guidelines developed	100,000	5,000	45,000	40,000	10,000	100,000
Outcome Total	1,800,000	95,000	850,000	700,000	155,000	1,800,000
100 govt officials trained on spatial planning	100,000	0	0	70,000	30,000	100,000
National urban strategy developed	383,014	0	0	260,000	123,014	383,014
Outcome Total	483,014	-	-	330,000	153,014	483,014
Sub-total	5,083,014	315,000	2,075,000	2,155,000	538,014	5,083,014
Project Manager	288,000	48,000	96,000	96,000	48,000	288,000
Office staff/technical support	75,000	12,500	25,000	25,000	12,500	75,000
Office cost	75,000	12,500	25,000	25,000	12,500	75,000
Travel Related to execution	38,576	6,000	13,500	13,000	6,076	38,576
Final Evaluation	25,000				25,000	25,000
ESP and GP Compliance	32,000	4,000	10,000	12,000	6,000	32,000
Execution Cost (9.5% of C)	533,576	83,000	169,500	171,000	110,076	533,576
Total Project Cost	5,616,590	398,000	2,244,500	2,326,000	648,090	5,616,590
PSC 7%	393,161	27,860	157,115	162,820	45,366	393,161
Evaluation support (HQ)	10,000	1,500	2,800	3,900	1,800	10,000
Project Support Cost (ROAP)	7,500	2,000	2,000	2,000	1,500	7,500
IE Staff salary	50,000	7,500	17,500	17,500	7,500	50,000
Project supervision missions	16,749	3,000	5,000	5,000	3,749	16,749
Overheads (8.5% of C)	477,410	41,860	184,415	191,220	59,915	477,410
Total Requested	6,094,000	439,860	2,428,915	2,517,220	708,005	6,094,000

D. Project/Programme Cycle Management Fee	Project Support Costs (global) Minimum for UN-Habiat 7% (mandated by and in accordance with General Assembly Resolution[1])	**393,161**	27,860	157,115	162,820	45,366
	Evaluation support costs (headquarters) 0.25%[2]	**10,000**	1,500	2,800	3,900	1,800
	Project Support Costs (ROAP) 1.25%					
	- PAG Meetings, reproting HQ	**7,500**	2,000	2,000	2,000	1,500
	- IE staff salary / supervision of reports etc	**50,000**	7,500	17,500	17,500	7,500
	- Project supervision missions	**16,749**	3,000	5,000	5,000	3,749
	Total	**477,410**	**41,860**	**184,415**	**191,220**	**59,915**

[1] General Assembly Resolution 35/217 of 17 December 1980, the Memo of the UN Assistant Secretary-General, Controller of 8 June 2012, Cost recovery: Programme Support Costs and UN-Habitat's Cost Allocation and Recovery Policy 2012. Programme Support Costs cover Variable indirect costs which are defined as all costs incurred by the organization as a function and in support of its activities, projects and programmes that cannot be traced unequivocally to specific activities, projects or programmes. These costs typically include services and administrative units, as well as their related system and operating costs. These costs include but are not limited to: (i) the central administration of human, financial, physical and ICT resources; (ii) staffing, facilities, equipment, activities and legal liabilities… UN-Habitat's policy stipulates: 10%: standard rate for country projects which are predominantly operational 7%: rate for projects under the umbrella of the United Nations Delivering as One, other United, Nations Joint Programmes as well as multi-donor trust funds and EC funded projects.

[2] UN-Habitat's Evaluation Policy of 17 February 2016 stipulates that in addition to the actual evaluation costs, each project above USD 1,000,000 is levied with an evaluation fee of USD 10,000 which provides for specific evaluation support from UN-Habitat's Evaluation Unit before, during and after the evaluation.

The above table clarifies the overheads budget lines from the detailed budget, above.

Output	Activity/Item description	Cost	Year 1	Year 2	Year 3	Year 4	Annual Ttl	Indicative Calculation Details
	Outcome 1 total (from Budget Overview)	2,800,000	220,000	1,225,000	1,125,000	230,000	2,800,000	
1.1	Procurement of tanks, pipes and other equipment	1,200,000	50,000	650,000	400,000	100,000	1,200,000	Procurement Costs (Hardware) - $1,200,000
	Engineering assessent	50,000	10,000	25,000	15,000		50,000	Engineer (consultant) - $47,000, Travel $3,000
	Site visits to reconfirm	50,000	5,000	20,000	20,000	5,000	50,000	Engineer (Consultant) - $40,000, Meetings and consultations, $5,000, travel $5,000
	Final discussions with communities	50,000	10,000	15,000	20,000	5,000	50,000	Venue $25,000, Travel, $10,000, Per diems, catering and incidentals $20,000
	Installation of tanks, pipes and other equipment	650,000	50,000	200,000	400,000		650,000	Machinery/Plant $450,000, Labour $200,000
	Sub-total	2,000,000	125,000	910,000	855,000	110,000	2,000,000	
1.2	Training for communities on use of RWH equipment	50,000		10,000	20,000	20,000	50,000	Venue(s) $30,000, Travel $10,000, Incidentals/per diem $10,000
	Removal of solid waste in drainage channels	450,000	75,000	175,000	150,000	50,000	450,000	Service delivery $350,000, Labour $80,000, other allied costs $20,000
	Guidelines developed and champions identified	100,000	5,000	40,000	40,000	15,000	100,000	Consultant $50,000, Community visits and training $30,000, Travel $20,000
	Develop community-scale plans including consultations, site visits, drafting plans and consultations	100,000	5,000	40,000	40,000	15,000	100,000	Consultant $50,000, Consultations costs $25,000, Travel $25,000
	Sub-total	700,000	85,000	265,000	250,000	100,000	700,000	
1.3	Develop appropriate awareness raising materials	30,000	5,000	25,000			30,000	Consultant $25,000, Meetings/Consultations $5,000
	Develop strategy for continued awareness raising	20,000	5,000	15,000			20,000	Consultant $20,000
	Distribute the awareness raising materials	50,000		10,000	20,000	20,000	50,000	Printing $40,000, Travel $10,000
	Sub-total	100,000	10,000	50,000	20,000	20,000	100,000	
	Outcome Total	2,800,000	220,000	1,225,000	1,125,000	230,000	2,800,000	

	Outcome 2 total (from Budget Overview)	**1,800,000**	**95,000**	**850,000**	**700,000**	**155,000**	**1,800,000**	
2.1	Procurement of tanks, pipes and other equipment	600,000	50,000	350,000	200,000		600,000	Procurement (hardware) - $600,000
	Engineering assessent	50,000	10,000	30,000	10,000		50,000	Engineer (consultant) - $47,000, Travel $3,000
	Site visits to reconfirm	20,000	5,000	10,000	5,000		20,000	Engineer (Consultant) - $15,000, Meetings and consultations, $2,500, travel $2,500
	Installation of tanks, pipes and other physical equipmer	475,000	25,000	200,000	200,000	50,000	475,000	Machinery/plant $325,000, Labour $150,000
	Develop SoPs for distribution and equitable access	30,000		15,000	15,000		30,000	Consultant $20,000, Consultations $5,000, Travel $5,000
	Workshop to publish/raise awareness on SoPs	25,000			15,000	10,000	25,000	Venue/catering $15,000, Travel $10,000
	Sub-total	1,200,000	90,000	605,000	445,000	60,000	1,200,000	
2.2	Conduct MHVRA (data gathering and analysis)	300,000		200,000	100,000		300,000	Consultants, $150,000, Field mssions/data gathering $100,000, meetings $50,000
	Publish findings and workshops to raise awareness	25,000			25,000		25,000	Venue/catering $15,000, Travel $10,000
	Conduct spatial analysis, using MHVRA data	100,000			75,000	25,000	100,000	Consultants $50,000, Travel, $20,000, Meetings/consultations, $20,000, Travel 10,000
	Publish results and develop priority actions for other fir	25,000			5,000	20,000	25,000	Publication costs $20,000, Meetings/Consultations $5,000
	Confirmatory/validation workshops	50,000			10,000	40,000	50,000	Venue/catering $30,000, Travel $20,000
	Sub-total	500,000	-	200,000	215,000	85,000	500,000	
2.3	Rapid capacity analysis and training needs assessment of district/municipal level staff	20,000	5,000	15,000			20,000	Consultant, $10,000, Travel, $5,000, Meetings/Venue/Incidentals $5,000
	Develop, agree and finalise training materials	20,000		20,000			20,000	Consultant $20,000
	Develop guidelines	20,000		10,000	10,000		20,000	Consultant $20,000
	Provide trainings	30,000			20,000	10,000	30,000	Venues/catering $20,000, Travel and associated costs $10,000
	Develop post-training implementation plan	10,000			10,000		10,000	Consultant $10,000
	Sub-total	100,000	5,000	45,000	40,000	10,000	100,000	
	Outcome total	1,800,000	95,000	850,000	700,000	155,000	1,800,000	

	Outcome 3 Total (from budget overview)	483,014	-	-	330,000	153,014	483,014	
3.1	Rapid capacity analysis	30,000			20,000	10,000	30,000	Consultant $20,000, Travel $10,000
	Develop and finalise training materials	20,000			10,000	10,000	20,000	Consultant $20,000
	Implement the training	40,000			40,000		40,000	Venue/catering $15,000, Trainer $15,000, Travel $10,000
	Develop and implement post-training implementation p	10,000				10,000	10,000	
	Sub-total	100,000	-	-	70,000	30,000	100,000	
3.2	Consultations on the scope of the national strategy	80,000			60,000	20,000	80,000	Meetings $30,000, Travel, $20,000, Consultant $30,000
	Field missions for sub-national consultations	80,000			60,000	20,000	80,000	Travel $80,000
	Publish strategy and hold consultations	63,014			40,000	23,014	63,014	Publication/Printing $40,000, Venue, travel and incidentals $23,014
	Meetings and consultations to decide scope of Spatial I	50,000			40,000	10,000	50,000	Meeting costs $25,000, Consultant $25,000
	Draft the guidelines	20,000			15,000	5,000	20,000	Consultant $20,000
	Consultations of the draft guidelines	50,000			35,000	15,000	50,000	Meeting costs, $25,000, Travel $25,000
	Finalise and publish the guidelines	40,000			10,000	30,000	40,000	Publication/printing $15,000 Editing and translation $15,000, Workshop costs $10,000
							-	
	Sub-total	383,014	-	-	260,000	123,014	383,014	
	Outcome Total	483,014	-	-	330,000	153,014	483,014	
	Outcome Totals	5,083,014	315,000	2,075,000	2,155,000	538,014	5,083,014	
	Execution Cost	533,576	83,000	169,500	171,000	110,076	533,576	
	Total Project Cost	5,616,590	398,000	2,244,500	2,326,000	648,090	5,616,590	
	Overheads	477,410	41,860	184,415	191,220	59,915	477,410	
	Total Requested	6,094,000	439,860	2,428,915	2,517,220	708,005	6,094,000	

H. Disbursement Schedule

Table 26 - Disbursement schedule

	Year 1	Year 2	Year 3	Year 4	Total
	1st disbursement – upon agreement signature	2nd disbursement – One Year after project start ▪ Upon First Annual Report ▪ Upon financial report indicating disbursement of at least 70% of funds	3rd disbursement - Two years after project start ▪ Upon Second Annual Report ▪ Upon financial report indicating disbursement of at least 70% of funds	4th disbursement – Third Year after Project Start ▪ Upon Third Annual Report ▪ Upon financial report indicating disbursement of at least 70% of funds	
Milestone	Milestones (by end of year) - Inception workshop report - Initial awareness raising materials developed (Output 1.3 - Engineer's survey work completed in draft (Outputs 1.1 and 2.1) - Designs re-confirmed by engineer and procurement begun - Rapid capacity assessment completed (Output 2.3 and 3.1) - Advocacy materials (project brochure, social media) developed	Milestones (by end of year) - All procurement complete under Output 1.1 - All site visits completed, engineer's survey approved and finalised with government and communities, and construction has commenced (Outputs 1.1 and 2.1) - Solid waste management launched (Output 1.2) - Advocacy materials developed and distributed - Awareness raising materials in circulation (Output 1.3) - Communities Trained (Output 1.2) - Data gathering complete for MHVRA (Output 2.2) - Capacity analysis compete and trainings given (Output 3.1 - PMC meeting -	Milestones (by end of year) - All activities under Output 1.1 complete - All training complete under Output 1.2 - Awareness raising campaign has generated results (Output 1.3) - All activities, except final training/handover, complete under Output 2.1 - All activities under Output 2.2 complete - All activities under Output 2.3 complete except - Draft Guidelines for spatial planning published under Output 3.2 -	Milestones (by end of year) - All community scale plans are fully operational, and communities are autonomously operating their RWH facilities (Outputs 1.1 and 1.2) - All awareness raising materials distributed (Output 1.3) - All public RWH infrastructure operational with SoPs - All activities under Output 2.3 complete - The final spatial planning guidelines published under Output 3.2	

Schedule date	March 2020 Or Upon Signing	March 2021	March 2022	March 2023	TOTAL
A. Project Funds (US$)	$315,000	$2,075,000	$2,155,000	$538,014	**$5,083,014**
B. Programme Execution	$83,000	$169,500	$171,000	$110,076	**$533,576**
C. Programme Cycle Mgt	$41,860	$184,415	$191,220	$59,915	**$477,410**
TOTAL	**$439,860**	**$2,321,895**	**$2,410,220**	**$922,005**	**$6,094,000**

A. Record of endorsement on behalf of the government[78]

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

Tel: +92-51-9245528
Fax: +92-51-9245533

GOVERNMENT OF PAKISTAN
MINISTRY OF CLIMATE CHANGE
(LG&RD COMPLEX, G-5/2), Islamabad
****

Islamabad 5th August 2019

Subject: LETTER OF ENDORSEMENT FOR ADAPTATION FUND ON "ENHANCE COMMUNITY AND LOCAL AND NATIONAL-LEVEL GOVERNMENT CAPACITIES TO ADDRESS CLIMATE CHANGE INTERRELATED URBAN FLOOD AND DROUGHT RISKS AND IMPACTS"

I am pleased to endorse UN Habitat Project Programme proposal on "Enhance community and local and national-level government capacities to address climate change interrelated urban flood and drought risks and impacts" for adaptation fund, in my capacity as National Focal Point for Pakistan Adaptation Fund.

(Muhammad Irfan Tariq)
Director General (Env & CC)

The Adaptation Fund Board Secretariat
1818 H Street NW
MSN P4-400
Washington,DC-20433
USA

6. Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

Environmental Protection Agency
Forestry, Environment & Wildlife Department
Govt. of Khyber Pakhtunkhwa

No. EPA/EIA/UN-HABITAT/Islamabad/19/ 749

Dated 02 / 09 /2019

To

Mr. Javed Ali Khan
Habitat Programme Manager,
United nation Human Settlements Programme,
GPO Box 1980, Islamabad, Pakistan
Contact No. 051-8357363

Subject: **ISSUANCE OF ENDORSEMENT LETTER ON ADAPTATION FUND PROJECT -PAKISTAN**

Kindly refer to your letter No. Nil dated 28/08/2019 on the subject cited above and to state that as per Schedule-I & II of the IEE/EIA Regulations, 2000, the mentioned project activities i.e. "**Installation of 5000 Rain Water Harvesting Units at Household Level and 50 in Public Buildings**" does not require EIA/IEE Report submission. However, you are requested to approach Provincial Govt./P&D Department/District Govt. etc. for endorsement letter regarding site/area selection, please.

Director General

D:\EIA Section 2019\General Letters

3rd Floor, Old Courts Building, Khyber Road, Peshawar Cantt.
Tel: 92(91) 9210263-9210148, Fax: 92 (91) 9210280

No.DD(EIA)/EPA/F-MICS/2019/ 4057,
GOVERNMENT OF THE PUNJAB
ENVIRONMENTAL PROTECTION AGENCY
QADDAFI STADIUM, LAHORE
Dated: 3-9, 2019

To

Mr Jawad Ali Khan,
Habitat Programme Manager,
UN Human Settlements Programme,
GPO Box 1980, Islamabad

SUBJECT: **ISSUANCE OF ENDORSEMENT LETTER ON ADAPTATION FUND PROJECT-PAKISTAN.**

Kindly refer to your letter No. Nil dated 28.08.2019.

2. I am directed to convey that Punjab EPA appreciates and endorse execution of activity of "Installation of 5000 Rain water harvesting units at Household level and 50 in Public buildings" by UN Human Settlement Programme, being environment friendly initiative especially with respect to current water scarcity and reducing load on ground water extraction.

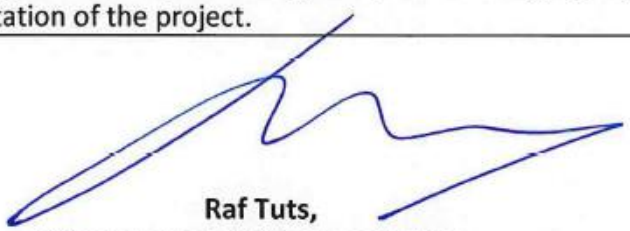
3. This activity does not require EIA/IEE Reports submission as per schedule I (projects requiring IEE) or Schedule-II (projects requiring EIA) of "Review of IEE/EIA Regulations 2000". However, this letter does not absolve to comply with other relevant laws and rules enforced please.

ASSISTANT DIRECTOR (EIA)
EPA PUNJAB

CC:

PA to Director General, EPA Punjab, Lahore.

B. **Implementing Entity certification**

I certify that this proposal has been prepared in accordance with the guidelines provided by the Adaptation Fund Board and prevailing national development and adaptation plans, including Pakistan's Vision 2025, the National Climate Change Policy and its Nationally Determined Contribution to the Paris Agreement, and subject to the approval of the Adaptation Fund Board, commit to implementing the project in compliance with the Environmental and Social Policy of the Adaptation Fund and on the understanding that the implementing entity will be fully (legally and financially) responsible for the implementation of the project.	
 **Raf Tuts,** Director, Global Solutions Division, UN-Habitat	
Date: 17th January 2020	Tel.: +254-20-762-3736; E-Mail: raf.tuts@un.org
Project Contact Person: Laxman Perera, Human Settlements Officer, Regional Office for Asia and the Pacific	
Tel +81-92-724-7121	
Email: laxman.perera@un.org	

Annexes

Annex 1 – Technical Designs

Technical designs used by UN-Habitat are displayed below. These designs are variations of those that have been used successfully across Pakistan in other projects. The exact final system specifications that will be used in the project may differ slightly from these, accounting for the local context, the building design, the roof structure and the space available, but nevertheless, these should be seen as indicative of those to be used throughout the project in Outputs 1.1 and 2.1. The exact details, leading to exact technical specifications, bills of quantity, etc will be determined by a detailed engineer's survey prior to installation. This survey will also have an environmental and social safeguard function by ensuring that the work to install the tanks does not damage the houses, neighbouring houses or any nearby infrastructure.

Please note that design types 1&2 are designed for private houses/residential buildings, and as such will be used in the activities under Output 1.1. Design type 3 is for use in larger buildings like the public buildings targeted by this project.

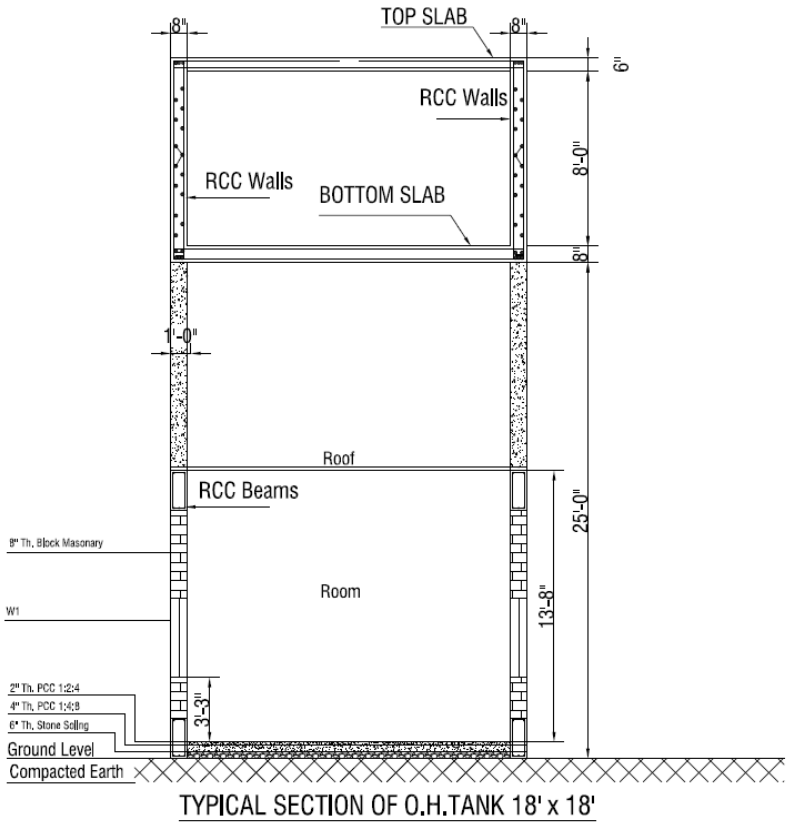


Figure A1.1 – Design type 1

This type us used when the tank can be stored on the roof of the house. This type is used in well constructed, flat-roof type buildings where the roof can withstand the weight of the tank. However, in domestic settings in urban poor areas, this is often not possible, so Design type 2 may be used:

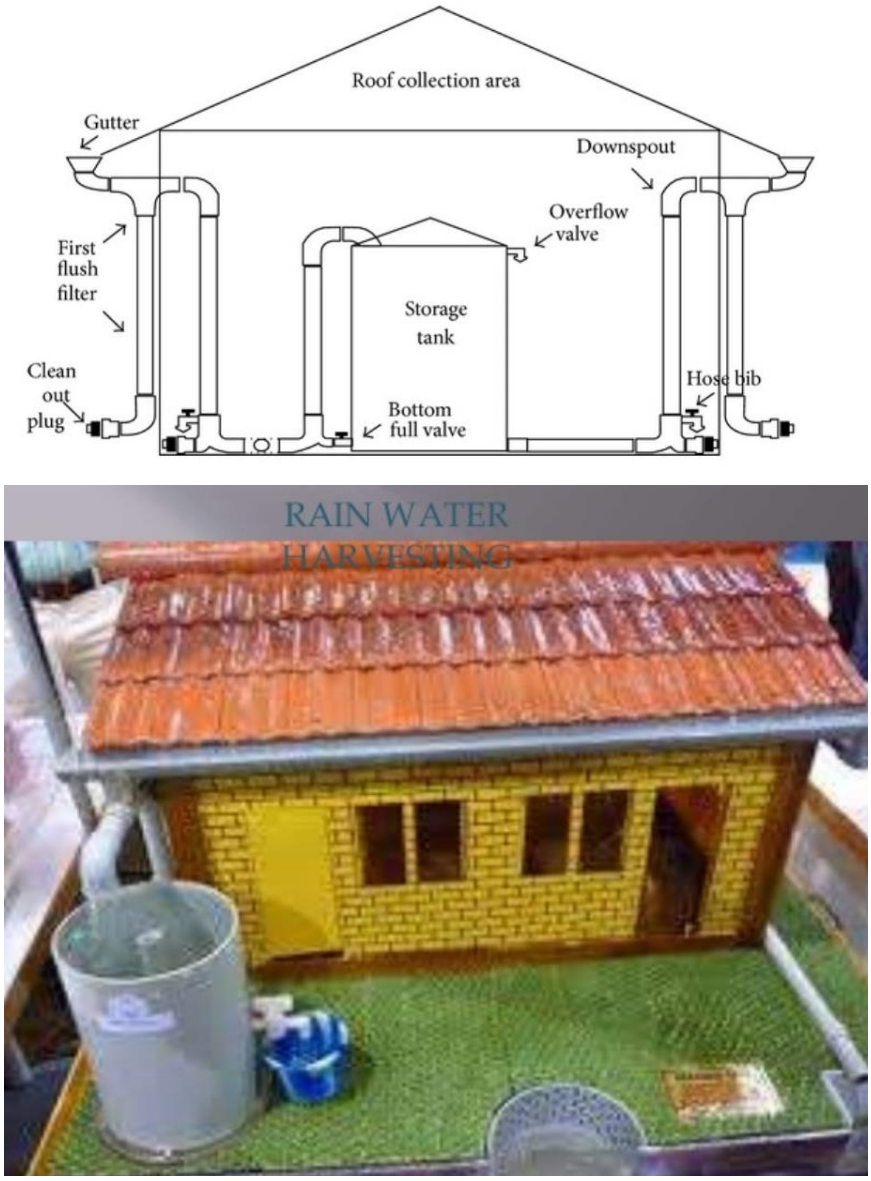


Figure A1.2 - Design Type 2

The third type of design uses underground tanks (or a combination of rooftop and underground tanks) to store the water. This type is more commonly used when space is limited around the building, meaning that storage tanks can't be fully utilised above-ground, and when the roof is unsuitable for a large tank. This type can also be used for sharing between multiple houses, and is useful in densely populated areas where space is at a premium. Note in the diagram, the underground tank can be new or existing, depending on the circumstances.

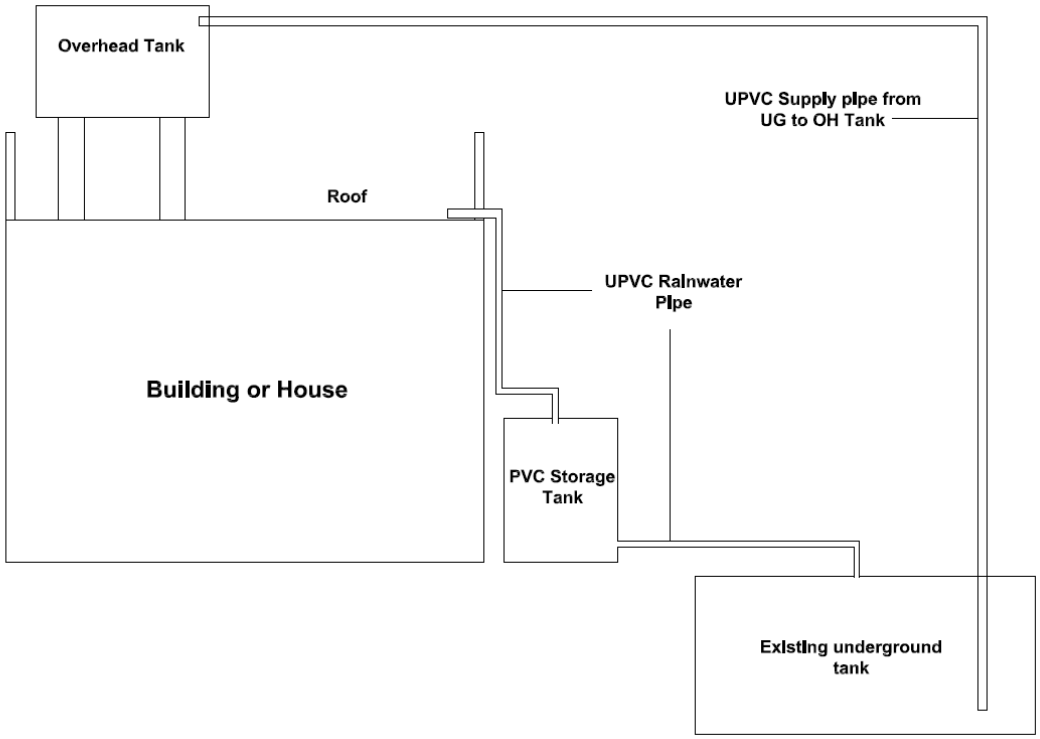
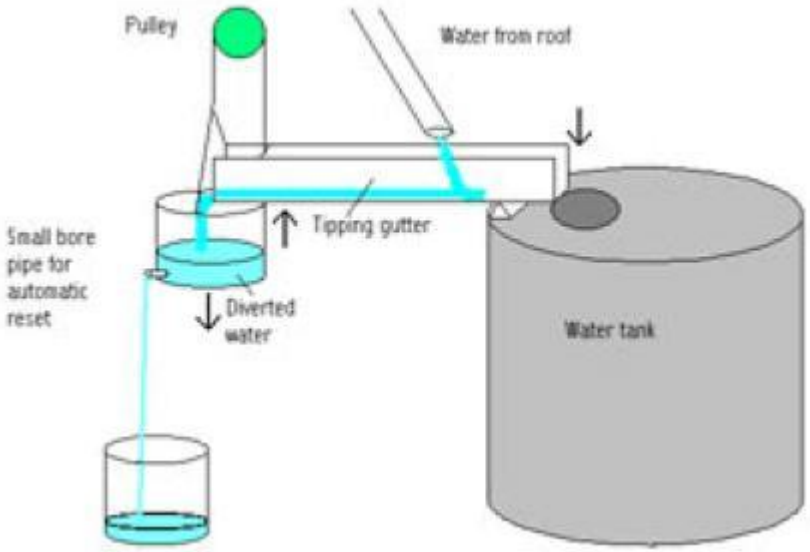


Figure A1.3 - Design type 3 – Underground storage

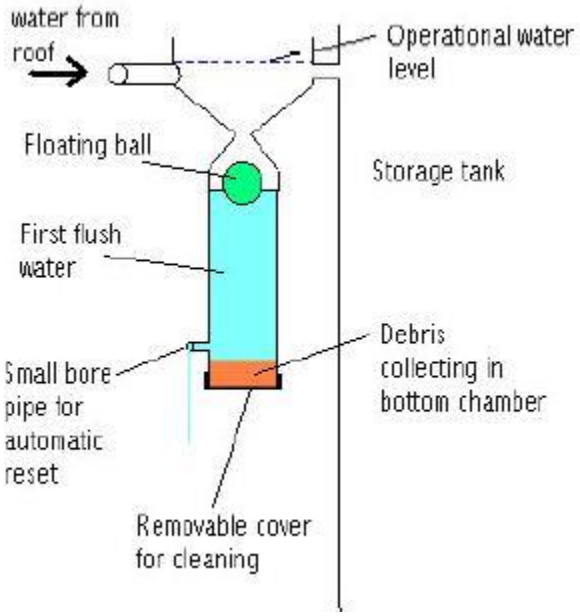
Please note that this design type of primarily designed for use on larger buildings (i.e. not houses), and as such will be used on the public buildings being targeted by this project. In all designs, simple systems are used to provide basic filtration. These designs don't necessarily make water drinkable (that depends on contaminants on the roof. However, they do keep leaves, gravel and other detritus from the roof out of the system, helping to prevent blockages and major contamination.

There are two basic designs to do this, which can be installed in any of the above overall concept designs:



The **tipping gutter first flush system** (pictured above) is very simple to build, operate, and maintain. Water from the roof lands on a piece of guttering which is tipped down away from the water tank. Therefore, the first rains and their debris pour away from the tank and into a storage vessel. The end of the guttering is attached via a pulley to

the diverted water tank, and so as the diverted water tank gets fuller (and therefore heavier) it lifts up the end of the tipping gutter. Now the (hopefully) clean water from the roof is directed into the water tank.



The **floating ball first flush** system (pictured above) is a little more complicated than the tipping gutter system discussed above although they have some similarities. When the rain starts to fall it accumulates together with any debris in a chamber with a conical top. As the chamber fills a ball floats on the collected water's surface. Eventually the ball becomes stuck in the conical chamber entrance blocking the bottom chamber and therefore redirecting subsequent collected rainwater into the main clean water storage tank.

The Pakistan Council of Research in Water Resources has produced Guidelines and a Training Module for the Development and Implementation of Rainwater Harvesting Systems. This establishes a clear set of baseline guidelines for the filtration of harvested rainwater that could potentially eliminate the risks and thus impacts to public health from water contamination highlighted in Annex 5. Below is a direct quote from the guidelines[79]:

Protecting Rainwater Quality

Like in most rural water supply systems, treatment of water is both impractical and unrealistically expensive, so the emphasis here is to provide improved water sources. The protection of rainwater quality starts with good design and requires the proper operation and maintenance of the whole system.

In a rainwater harvesting system, the path that a microbiological or a chemical contaminant follows is the atmosphere, the catchment area, the conveyance system and the water reservoir. Contamination may start at any point in the path and continue to the point of consumption to be a health risk.

a) The catchment area

Rainwater, as it falls down through the atmosphere, collects bacteria and other types of parasitic organisms and chemical contaminants from the dry dust or smoke in the air. Since initial rains wash away most of this dust and smoke from the air, they are likely highly contaminated. The main source of contamination is the catchment itself be it the roof top or the ground surface. The first rains/runoff particularly collect debris and contaminants accumulated on the catchment area; after this runoff has passed, the water is considerably safer. Therefore, a bypass may be constructed/installed to dispose off the contaminated water for the first few minutes.

b) Gutters and downpipes

[79] Hasan, F, Ashraf, M and Farooque, M (2015) Guidelines and Training Module for the Development and Implementation of Rainwater Harvesting Systems, pp.25-28

Gutters and downpipes are important places where debris accumulates; the vast majority of contaminants are stuck in debris. Removing debris means reducing both the contaminants and the nutrients they need for survival. It is therefore, essential that gutters and downpipes are cleaned from time to time. In addition to cleaning, it is very useful to place an inlet screen/filter to prevent debris from entering the tank.

c) ***The storage tank***

The storage tank, unlike the other RWH components, is the place where water is stored for a long time. For this reason, small runoff particles sediment live out there over time, reducing turbidity and thus improving physical water quality. Further, pond openings should also be covered with screens to prevent small animals from entering.

Treatment of stored rainwater

The primary aim of treatment is to make water safe (from harmful substances/chemicals and organisms); to make it good in appearance and attractive for human consumption. There are various methods and stages of water treatment which include screening, sedimentation, filtration (with fine granular materials such as sand and gravel), disinfection, and miscellaneous other treatments. For treatment of rainwater, the physical qualities have improved through screening and sedimentation in the pond, and that there is no as such any chemical quality to improve. Therefore, what remains (if needed) is bacteriological treatment which involves essentially the disinfection and/or filtration of stored water. The water should also be disinfected through boiling when used for consumption. The following treatment methods are suggested:

a) *Chlorination*

Chlorination is done either in the tank or after the water is collected and taken home. Chlorine is very effective in killing micro-organisms, but requires care because it can affect the taste of water and over application may cause certain problems. It is available in different forms and names, and the procedure for its application requires some guide. The users of rainwater themselves can carry out the chlorination of their tanks/water; however, it would be important to obtain advice from local health offices/personnel on its proper use. The residual Chlorine in the water must be 0.5 mg/l.

b) *Use of filters*

Sand filters are simple to use and cheap to acquire. They can be used at home, but require proper operation and maintenance. They filter fine suspended material and also much of the bacteria, and improve physical qualities such as color, taste and odor. A sand filter is capable of providing enough water for the drinking and cooking needs of a household. What is needed to make a sand filter is a 200 liter oil drum or cement jar, a tap and a short length of polythene hose, along with clean river sand, gravel and sometimes charcoal. These have a dramatic effect on water quality, and can be used for rain water both from roof and ground catchments.

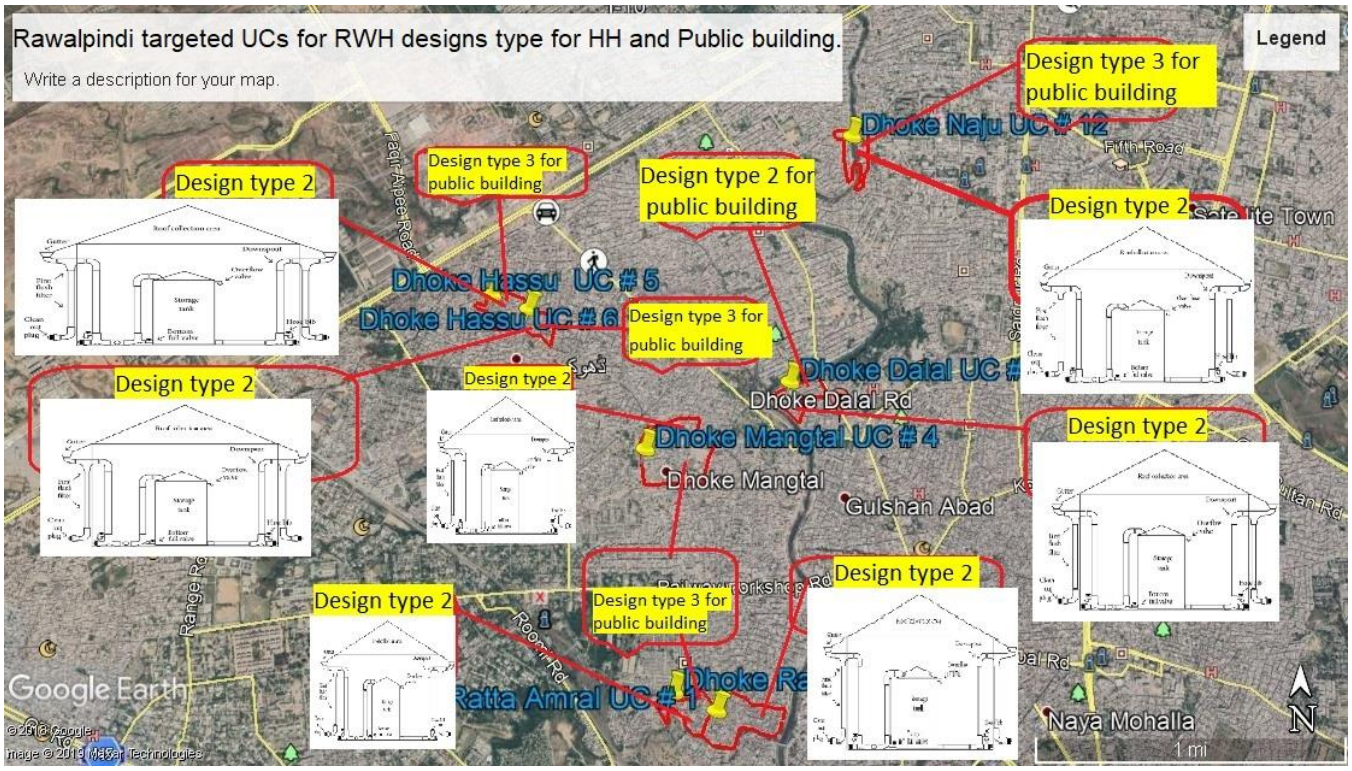
c) *Boiling*

Boiling for two to three minutes makes water free from any harmful bacteria. It is a method which every household knows best and can easily make use of without a need for training.

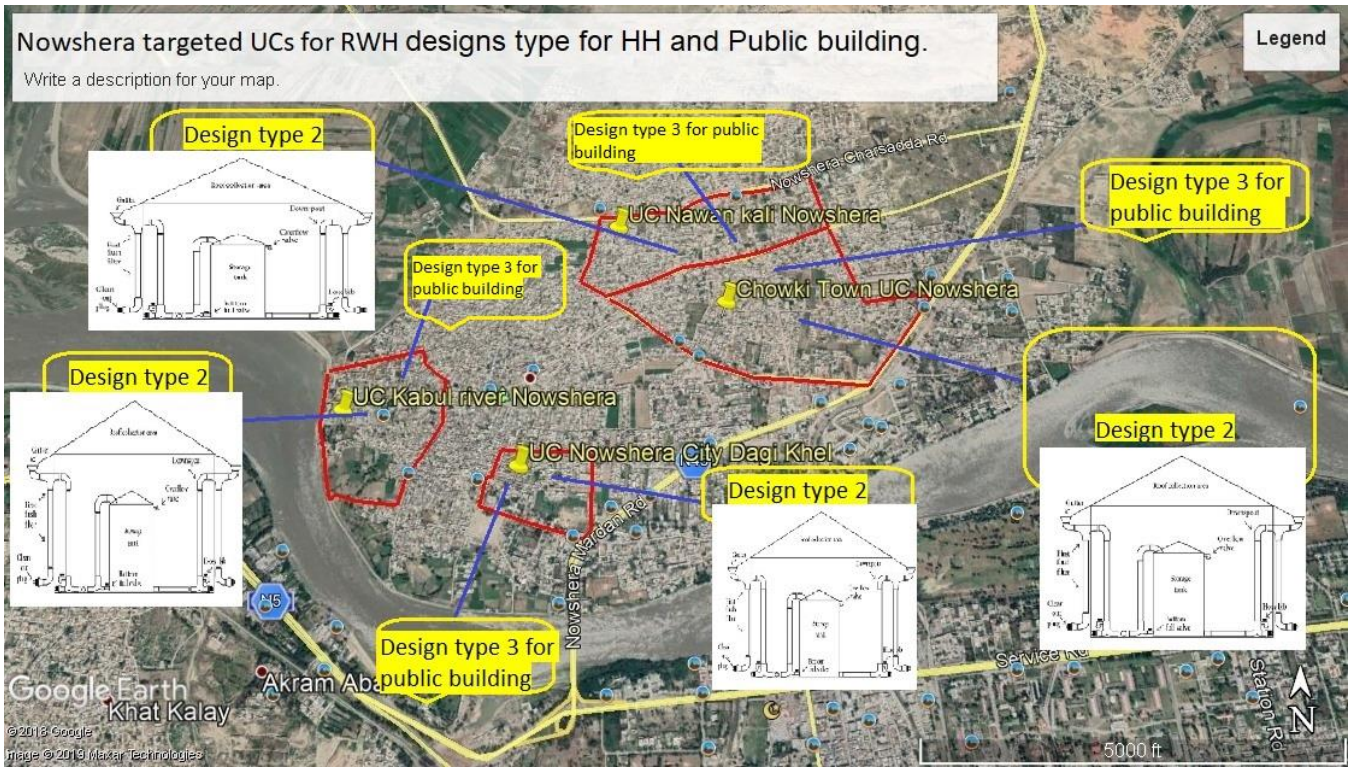
d) *Sunlight*

Putting water in clear glass or plastic bottles, and placing it in direct sunlight for several hours kills both bacteria and other microorganisms.

The below map shows the locations of where the design types will used throughout the project area:



Map showing which designs will be used in which locations in Rawalpindi



Map showing which designs will be used in which locations in Nowshera

The project's results framework calls for training for community members to manage, operate and maintain the community-scale RWH infrastructure. This material will be developed under the project. However, listed below are some general procedures to ensure that the RWH infrastructure maintains its full functionality.

- Keep the tank and its surroundings clean, clear of obstacles and hygeinic
- Remove algae from the roof and surrounding area, and make sure there is no asbestos or loose masonry
- Drain the tank completely and clean it inside before the onset of the monsoon season
- Similarly, clean the gutters and pipes thoroughly before the onset of the rainy season and keep free from detritus such as leaves.
- Avoid the first rainfall using a 'first flush' arrangement
- Change the filter every year, ahead of rainy season
- Cover all pipes during the dry season with nylon mesh or cloth to allow rain in but prevent worms and insects from penetrating the pipes.
- Limit extraction to 5 litres per person per day, for consumption purposes
- Any leakage resulting from damage should immediately be attended to and repaired
- No heavy loads should be placed on the tank lid or pipes. People should not sit or stand on the pipes or the lid
- Water should not be allowed to stagnate
- People should be vigilant that the lock system is not tampered with, to prevent theft/improper use
- Filters must be washed regularly – at least once per year – and before the dry season

Annex 2 – Cost effectiveness – Willingness to Pay for Water

Below is a further excerpt from the willingness to pay survey conducted in Pakistan by UN-Habitat.

Water Tariff Rates

For a piped water connection the tariff rates have been computed by creating a model that includes the living cost18 of water combined for drinking and domestic and income level of the household.

Table 48: Average amount willing to pay by communities

Income groups	Willing to pay			Already paying		
	Mean	SD	N	Mean	SD	N
1-13000	326.70	293.61	103	407.28	283.14	103
13001-22000	408.57	394.93	140	446.96	382.81	140
22001-30000	476.88	456.25	80	505.63	364.92	80
30001 and above	936.67	861.37	90	663.89	598.69	90
Total	516.46	570.95	413	495.70	425.69	413

Average amount people are willing to pay is approximately ~515 rupees. However, for different income groups (based on quartiles) average willing to pay amount ranges varies from as low as 326 rupees and as high as rupees 936.

General quadratic equation (See Annexure A for details) shows positive relation between monthly income and willingness to pay suggesting that a percentage increase in the monthly income will increase the willingness to pay by .1.5% and a percentage change in already paying household will increase the willing to pay by 57.1%.

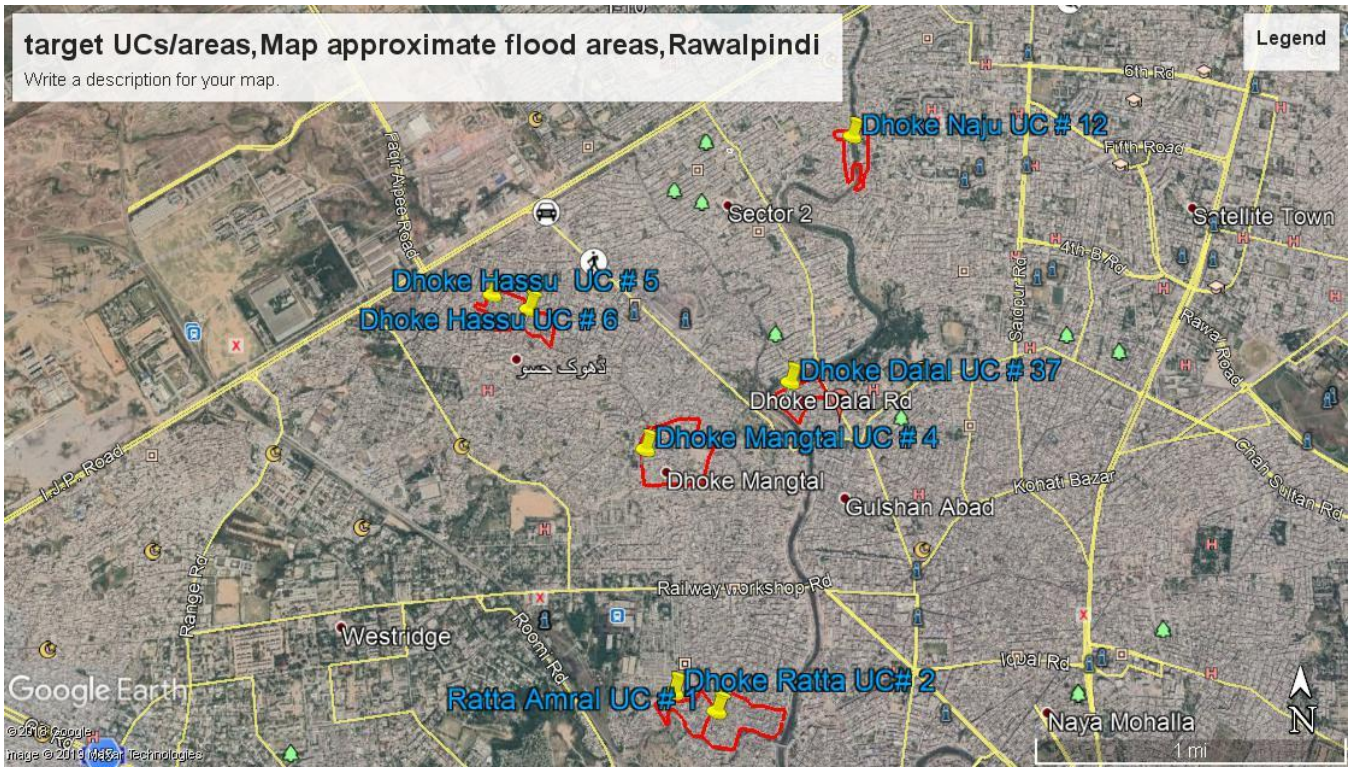
WTP=-43.81+0.0151m_inc+0.571ALPAY-7.19m_inc2-0.000055ALPAY2

Moreover, the analysis of elasticity suggests that monthly income has .35 and already paying has .32 elasticity. The elasticity is low as the income of most of the household is below 25000 which confirms our analysis of low elasticity.

Further, the model of piped water connection on the basis of pipe size, as practiced in Sukkur would be the starting point in Jacobabad city. Having said this, NSUSC also adopts the strategy of phase wise adoption of metering system, started with the metering at pumping site and at distribution node level. Later, on the basis of studying area wise volumetric pattern, consumer level metering would be initiated. The provision of connection on the basis of plot size would not work in the city, since majority of the city belongs to low- or middle-income strata with more or less same house size and structure.

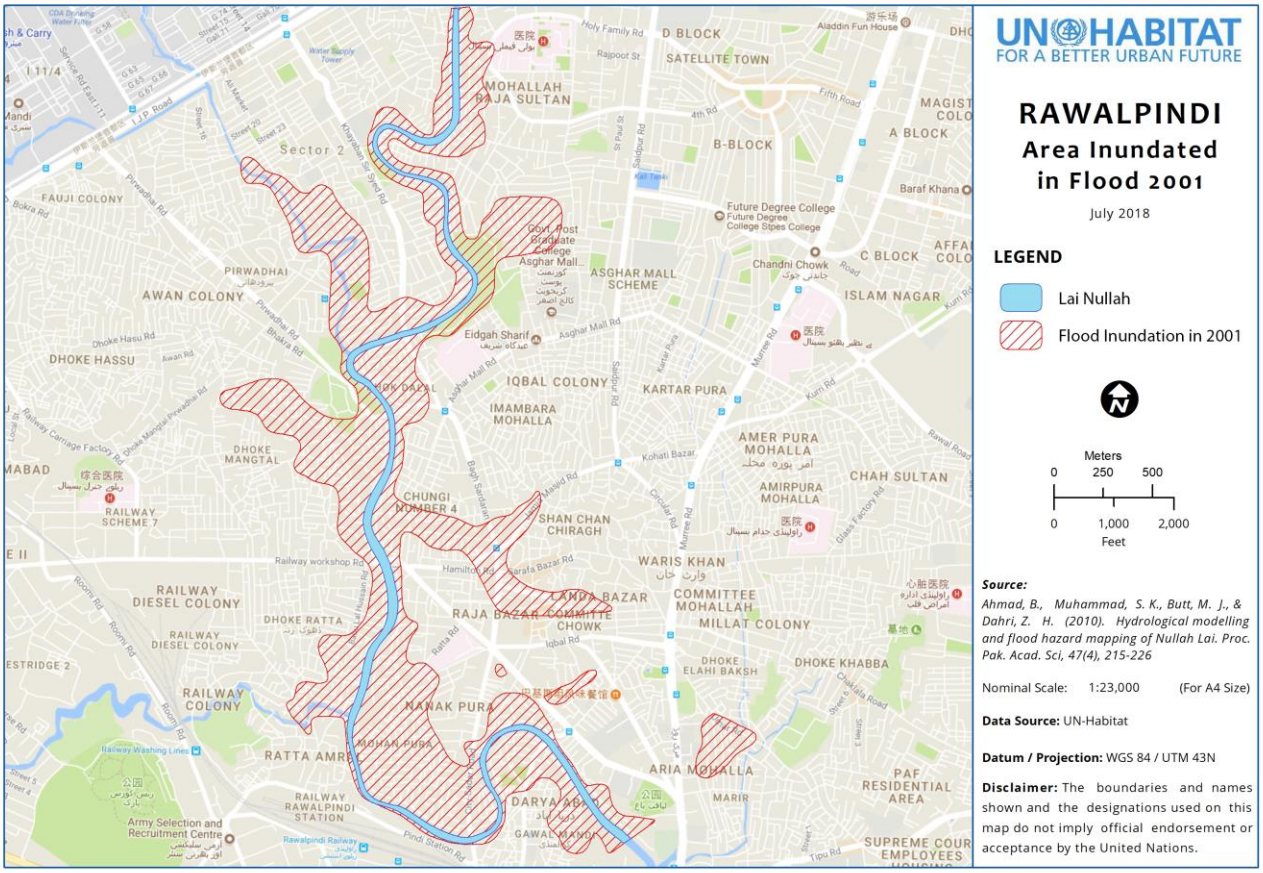
Annex 3 – Maps and locations

Further to the overview maps provided in Part I of this proposal, this section contains detailed contextual maps for the Union Councils and Neighbourhood Councils targeted by the project. The maps are included here for reasons of space.

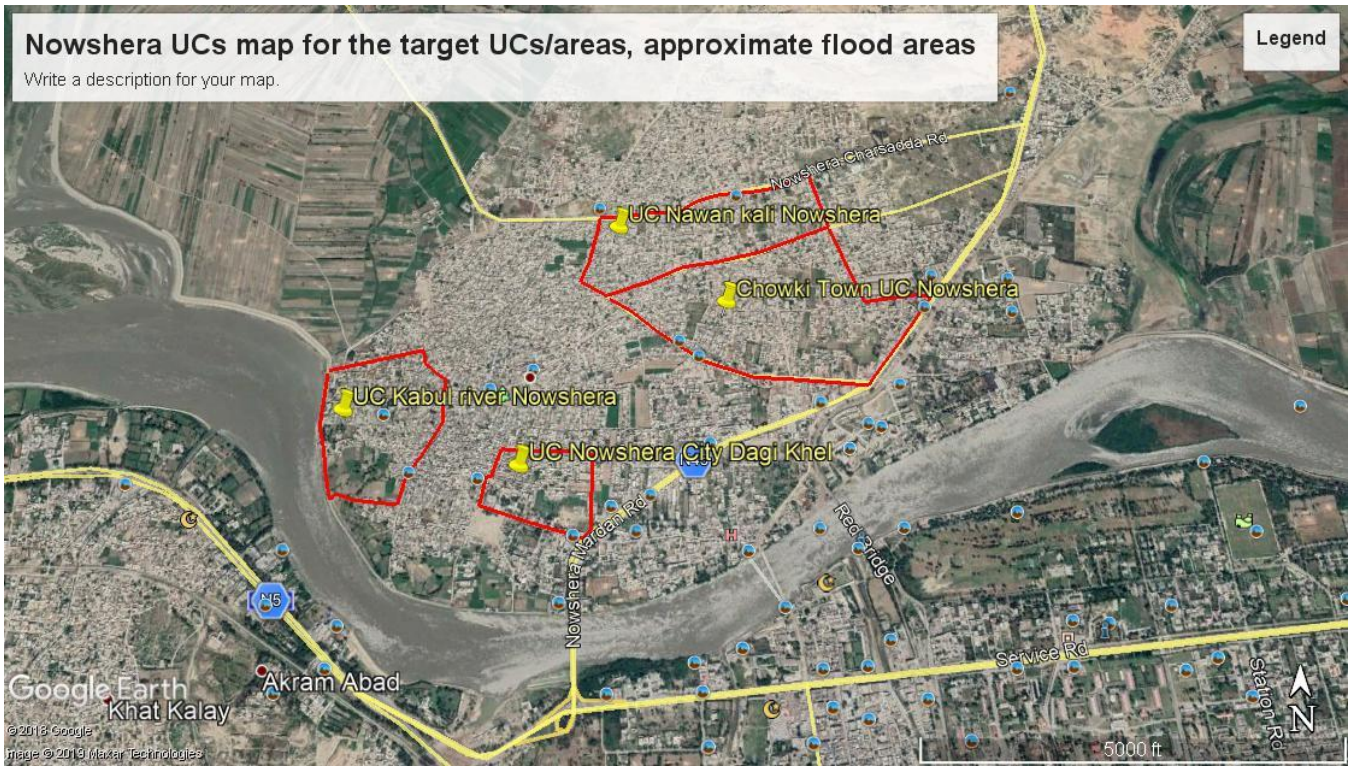


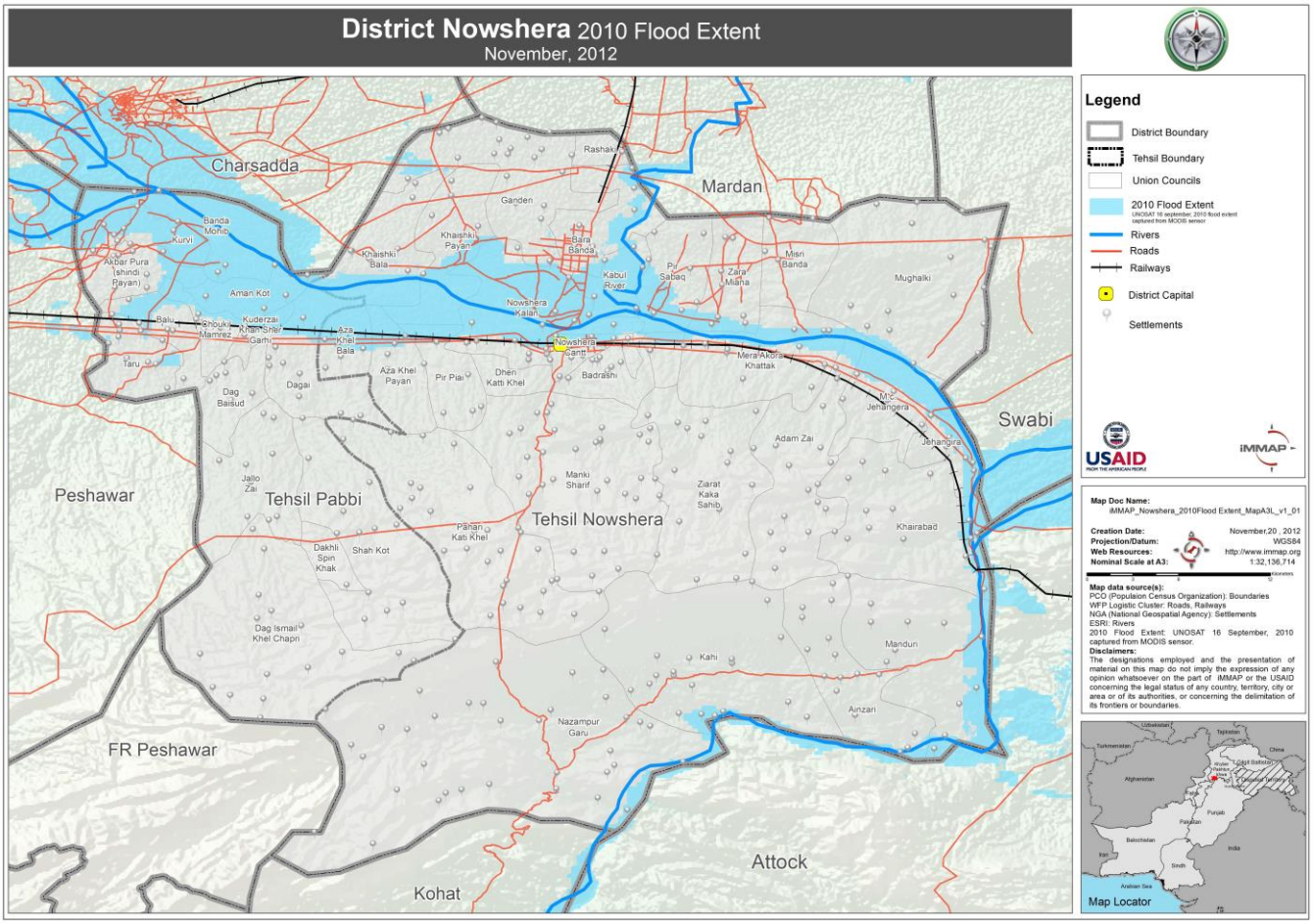
Above are the areas targeted by the project in Rawalpindi. Five of the seven UCs are either directly on, or within the flooding zone of the Nullah Lai (centre of the picture), while the other two are on a tributary stream of the Nullah Lai (UC5, Dhoke Hassu, is pictured below). The pictures show that the banks and drainage channels of the Nullah Lai Tributary are backed up with solid waste, which reduces their capacity to target flooding in the area.

The maps below shows the flooding area during the 2001 event. As the proposal highlights, the 2001 flood was a particularly serious event in Rawalpindi. However, the area flooded is typical of the area flooded every year, and this map can be seen as indicative of the typical flood-prone area in any given year.



The target areas in Nowshera can be seen in the map below. The boundaries shown in the map show the four Union Council areas that used to make up the administrative boundaries. The 8 neighbourhood councils fall within these four areas.


Nowshera UCs map for the target UCs/areas, approximate flood areas
Write a description for your map.
Legend
UC Nawan kali Nowshera
Chowki Town UC Nowshera
UC Kabul river Nowshera
UC Nowshera City Dagi Khel
Nowshera Mardan Rd
Service Rd
Station Rd
Akram Abad
Khat Kalay
Google Earth
© 2013 Google
Image © 2013 Maxar Technologies
5000 ft
N


District Nowshera 2010 Flood Extent
November, 2012
Charsadda
Mardan
Swabi
Peshawar
Tehsil Pabbi
Tehsil Nowshera
FR Peshawar
Kohat
Attock
Legend
District Boundary
Tehsil Boundary
Union Councils
2010 Flood Extent
Rivers
Roads
Railways
District Capital
Settlements
USAID
iMMAP
Map Locator

The map above shows the extent of the 2012 floods in Nowshera. While the 2012 flood was particularly severe, this is the typical of the annual floods that Nowshera receives and therefore the flood map shows the likely flood area. Two of the UCs (i.e. 4 NCs) are on or adjacent to areas that are on the main Kabul river, and are highly prone to flooding, and the other two are close to the Kabul River tributary and are prone to flooding and poor quality groundwater as a result of flooding.

For a map of which design type will be implemented in which location, please see Annex 1, above.

List of Public Buildings Targeted by the Project

The following is the list of public buildings to be targeted by Output 2.1 of the project. This has been discussed and agreed with all stakeholders mentioned in Part II, Section H of the proposal:

Public Buildings in Rawalpindi

The Table below provides the names and locations of the public buildings. The table provides the latitude and longitude of the buildings. Maps are not provided in this proposal for reasons of space, but can be provided on request, if required.

S#	Site/Building Name	UC #	Latitude	Longitude
1	Shahbaz Sharif Degree College, Khayaban-e-Sir Syed	12	33.63819	73.04584
2	Degree College for Girls, Khayaban-e-Sir Syed	12	33.63736	73.04711
3	Govt. Girls High for Girls, Khayaban-e-Sir Syed	12	33.64002	73.04811
4	Noorani Masjid	12	33.63898	73.05043
5	Allaied School	12	33.63785	73.0484
6	District Health Authority, Office	11	33.63313	73.04921
7	Masjid, Gulzar-e-Madina	37	33.62525	73.05148
8	Madrissa Dar-Uloom Ahsan Al Madaris	37	33.63413	73.05212
9	Govt Community Model Girls High School	37	33.62256	73.04778
10	Wapda Office	37	33.62256	73.04778
11	Zacha Bacaha Hospital (T.B Hospital)	37	33.62507	73.05392
12	Govt Degree College for Women, Dhoke Mangtaal	4	33.62426	73.04994
13	Railway General Hospital	4	33.62426	73.04994
14	Over Head Reservoir	4	**	**
15	Govt. Girls High School, Dhoke Hassu	6	33.62547	73.02792
	Govt Degree College For Women Dhoke Hassu	6		
16	Islamic Model Secondary School/ College	6	33.6271	73.02672
17	Railway Officers Colony	6	33.6271	73.02672
18	Over Head Reservoir + Attock Petrol Pump	6	33.62959	73.02426

19	Jamia Masjid-e-Kuba	6	33.6263	73.02891
20	Masjid Dar-ul-Islam	5	33.62683	73.03452
21	Bashir Marriage Hall	5	33.62683	73.03452
22	Govt. MC Girls Secondary School	5	33.62597	73.03686
23	Imam Bargah UC 5	5	33.62589	73.03586
24	Govt High School # 3, Westridge	2	33.61675	73.03759
25	Railway Central Locomotive Workshop	2	33.61674	73.03909
26	Degree College for Women, Dhoke Ratta	2	33.61189	73.04304
27	Govt. Pak Girls School (Millad Nagar)	1	33.61147	73.04099
28	Govt MC Girls High School + Over Head Reservoir	2	33.62545	73.041
29	Govt MC Boys High School	2	33.62545	73.041
30	TW # 77 + Dispensary	2	33.62423	73.04281
31	Police Choki # 4	1	33.59822	73.04598
32	Govt. Community Model School Railway Road, Ratta Amral	1	33.59529	73.03922
33	Public Library + Over Head Reservoir	1	33.5941	73.0405

Public Buildings in Nowshera

Sr.#	Union Councils (Ex)	Neighbourhood Councils (NCs)	Name of Public Buildings
1	Nowshera City	Dagi Khel	DHQ Hospital, Veterinary Hospital Govt. Primary School No 1 Dagi Khel, Govt. Girls Primary Shareef Colony Govt. High School Dagi Khel Govt. Girls High School Dagi Khel Govt. High Secondary School Dagi Khel
		Allah Yar Khel	Govt. Girls Primary School Qadir Abad Govt. Girls Primary School Hoti Khel Govt. Boys Primary School No 5 Hoti Khel
2	Nawan Kali	Nawan Kali	Govt. Primary School Zaidi Colony Nawan Kali Govt. Girls Middle School Nawan Kali Govt. High School Nawan Kali
		Shahmeer Gari	Govt. Primary School Samandar Gari Govt. Girls Primary School Aba Khel Govt. High School Samandar Gari 2
3	Chowki Town	Bara Khel	Nil
		Behram Khan Khel	Nil
		Mana Khel	Govt. Primary School Mana Khel

			Govt. Primary School Shala Khel Govt. Girls Primary School Khato Khel
4	Kabul River	Kabul River	Qazi Medical Complex Govt. Primary School Kabul River Govt. Girls Primary School Kabul River

Annex 4 – Baseline analysis and assessment of the situation of women in the target areas and Gender Action Plan

This annex is split into two parts. The first part provides background analysis and information on the situation of women in Pakistan, based on the consultations and secondary research. The second half of the annex is the Gender Action Plan, which demonstrates how gender is being mainstreamed throughout the project, particularly in the project's results framework.

The analysis presented in this Annex provides the baseline situation of women in Pakistan, and in doing so, helps bring the project into compliance with the Gender Policy of the Adaptation Fund. This annex provides analysis, while Annex 5 describes the project's plan to comply with the Environmental and Social and Gender Policies of the Adaptation Fund.

International and National Circumstances

The table below details the international agreements and conventions that Pakistan has ratified

Year Agreed (ratified)	Convention/International Agreement
1948	Universal Declaration of Human Rights
1966 (2008)	International Covenant on Economics, Social and Cultural Rights[80]
1966 (2010)	International Covenant on Civil and Political Rights[81]
1981 (1996)	Convention of the Elimination of all forms of Discrimination Against Women[82]
1985	Nairobi Forward Looking Strategies for the Advancement of Women
1990	Convention on the rights of the Child[83]
1993	Vienna Declaration and Programme of action (Pakistan recognized that "women's rights are human rights"[84]
1994	International Conference on Population and Development
2016	Sustainable Development Goals[85]

Pakistan has been awarded GSP+ status by the European Union in its Generalised Scheme of Preferences[86]. GSP+ is a scheme of special (i.e. reduced) tariffs levied by countries of the European Union on countries that meet certain criteria. Among these is a requirement that the country must have signed 27 conventions relating to human and labour rights, good governance and environmental protection. The conventions can be found here.

There are four main points in Pakistan's constitution concerning the rights and status of women, as follows:

- Article 25 (1) and (2) 25 (1) declares all citizens to be equal before law and entitled to equal protection of law, and 25 (2) states that there shall be no discrimination on the basis of sex alone.

[80] http://indicators.ohchr.org/
[81] http://indicators.ohchr.org/
[82] http://indicators.ohchr.org/
[83] http://indicators.ohchr.org/
[84] https://www.ohchr.org/EN/ProfessionalInterest/Pages/Vienna.aspx
[85] The Sustainable Development Goals have been adopted as National Development Goals and have been endorsed by the Parliament of Pakistan. The SDGs contain Goal 5 on Gender Equality
[86] http://ec.europa.eu/trade/policy/countries-and-regions/development/generalised-scheme-of-preferences/ - select the dropdown menu to see Pakistan's status

- Article 25 (3) Allows the State to create special laws and rules for specific issues facing women and children, which are being ignored.
- Article 34 Ensures full participation of women in all spheres of national life.
- 18th Amendment: Devolves most social issues to provinces and gives them responsibility for legislation and initiatives regarding those women's rights issues that fall within the purview of provinces. 18th Amendment has increased resources to provinces to work on women's empowerment.

Moreover, the constitution has various other provisions that support a gender equality agenda. Article 23[87] of Constitution of Pakistan declares that: 'Every citizen shall have the right to acquire, hold and dispose of property in any part of Pakistan, subject to the Constitution and any reasonable restrictions imposed by law in the public interest'**.** As such, women are entitled to the fundamental right to own, hold and transfer property under the laws of Pakistan. Meanwhile, Article 25 ensures equality of citizens in terms of property rights, both male and female, but the state can take affirmative action for women.

Article 25 Directs that the State shall ensure the elimination of all forms of exploitation and the gradual fulfilment of the fundamental principle, from each according to his/her ability, to each according to his/her work. Article 3 Mandates that steps shall be taken to ensure full participation of women in all spheres of national life. Article 34 Directs that the state shall protect the marriage, the family, the mother and the child. Article 35 Mandates that the State shall secure the well-being of the people, irrespective of sex, caste, creed or race, by raising their standard of living, by preventing concentration of wealth and means of production and distribution in hands of a few to the detriment of general interest and by ensuring equitable adjustment of rights between employers and employees, and landlords and tenants Article 38.

There are several national laws that have been promulgated recently to protect or empower women. These include:

- The Acid Control and Acid Crime Prevention Act, 2011
- Prevention of Anti-Women Practices Act, 2011
- Criminal Law (Amendment) (Offense of Rape) Act 2016
- Criminal Law (Amendment) (Offences in the name or pretext of Honour) Act, 2016
- Prevention of Electronic Crimes Act, 2016
- Hindu Marriage Act, 2017

At the national policy level, Pakistan has two major commitments, National Plan of Action for Women in 1998 and National Policy on the Development and Empowerment of Women 2002.

The 18th Amendment of the Constitution of Pakistan devolves much authority to the provincial level. Punjab Province (where Rawalpindi is located) has made substantial progress on provincial laws and policies regarding women. The relevant laws passed by Punjab Province are as follows:

- Punjab Women Protection Authority Act, 2017
- Punjab Protection of Women against Violence Act, 2016
- Punjab Muslim Family Laws (Amendment) Act, 2015
- Punjab Family Courts (Amendment) Act, 2015
- Punjab Marriage Restraint (Amendment) Act, 2015
- Punjab Partition of Immovable Property (Amendment) Act, 2015
- The Punjab Land Revenue (Amendment) Act 2015

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http://www.ndma.gov.pk/Publications/A%20Guide%20on%20Land%20and%20Property%20Rights%20in%20Pakistan%202012.pdf

- Punjab Fair Representation of Women Act, 2014
- The Punjab Protection against Harassment of Women at the Workplace (Amendment) Act, 2012

In addition to these laws, Punjab also has numerous policy initiatives, that guide the direction of government decision making regarding women's rights and empowerment:

- Punjab Women Empowerment Package 2012 (PWEP)
- Punjab Women Empowerment Initiatives 2014 (PWEI)
- Punjab Women Empowerment Package 2016 (PWEP)
- Punjab Women Development Policy, 2018

It should also be noted that Punjab Province has two relevant laws to protect children, the Punjab Restriction on Employment of Children Act, 2016 and Punjab Prohibition of Child Labour at Brick Kilns Act, 2016

Khyber Pakhtunkhwa has also developed laws designed to enhance the protection of women's rights and empower women. Relevant laws and policies include:

- The Domestic Violence Bill (which outlaws domestic violence)
- Burn Prevention and Rehabilitation.
- Women Empowerment Policy

Political, economic and social development of women

Land and inheritance

In addition to the legal and constitutional provisions, mentioned above, under Muslim Personal Law, a form of sharia law that is applicable to Muslims in Pakistan, women are entitled to acquire property through purchase, inheritance or gift. In addition, there are modes of acquiring property that are only open to women, such as land in the form of a dowry and wedding gifts. Women have the full right to inherit property irrespective of their relationship to the deceased. However, it is typical in families in Pakistan that male offspring will inherit a greater share of family property than females.

Historically, women were forced to relinquish their shares in inheritance in favour of males. However, this practice was outlawed by the high court and against the aforementioned policy and legal provisions in Pakistan. Moreover, this practice was outlawed regardless of the circumstances or pretext for favouring male heirs. The following are Personal laws concerned with families; Muslim Family Laws Ordinance, 1961; Family Courts Act, 1964; and Case law decided by the superior courts.

Education

The right of boys and girls to have equal access to education is guaranteed under Article 37 of the Constitution of Pakistan. However, there are discrepancies between the opportunities that boys and girls have in terms of accessing education in Pakistan.

There are still high numbers of children out of school (boys and girls), with a general trend of girls being less likely to begin education (thus more likely to receive no formal education), and more likely to drop out of education at some point before graduating from high school. In Khyber Pakhtunkhwa, where Nowshera is located, the net enrolment rate is 98% for boys and 75% for girls, while in Punjab Province (where Rawalpindi is located) the respective figures are 85% and 81%, respectively. The Pakistan average is 83% for boys and 71% for

girls. Enrolment rates drop off sharply at high-school age for boys and girls, but more significantly for girls. In Khyber Pakhtunkhwa, 65% of boys attend high school (the highest rate in the country outside Islamabad), but only 32% of girls do. This is the highest percentage gap in any province in the country. Punjab is more equal, with 43% of boys and 41% of girls going to high school. The national rates are 43% and 35% for boys and girls respectively[88]. Dropout rates are high in both provinces, but in Punjab are equal for girls and boys. In KPK, girls are far more likely to drop out of school with less than a grade 5 education than boys[89]

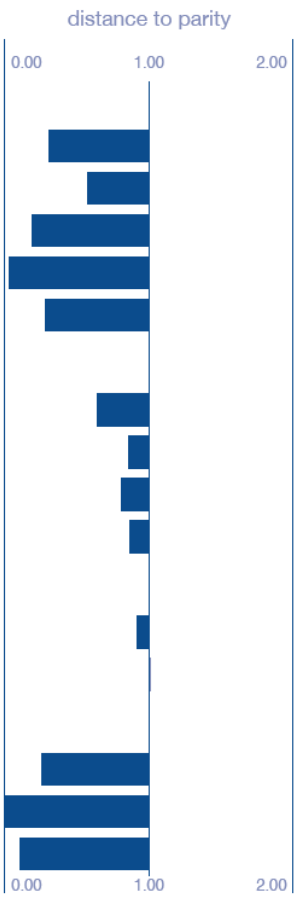
Economic Issues

10.9 per cent of households are headed by a woman in Pakistan[90]. There is evidence of a gender pay gap in Pakistan, with women typically earning about 64% what men earn (i.e. for every $1 the typical man earns, the typical woman earns $0.64). Moreover, the World Economic Forum has Pakistan 2nd bottom of its Global Gender Gap Index[91], giving Pakistan a low rank across economic participation and opportunity, educational attainment and health and survival (it performed somewhat better in the Political empowerment category)[92]. Participation in the labour market is extremely low across Pakistan. According to the Demographic and Health Survey, only 19 per cent of married women were employed within the previous year, compared with 98% of men[93]. Stunting and wasting is also a problem for children. In Khyber Pakhtunkhwa in particular, 40% of children are stunted and 8% experience wasting, with lack of water access being a contributor to this[94]. Only 26% of bank accounts in Punjab were held in women's names, indicating women have much less direct access to financial means[95].

According to the World Economic Forum's Global Gender Gap Report, Pakistan scores poorly in almost every indicator measured in the report[96]:

[88] Government of Pakistan, (2018) Pakistan Education Statistics 2016-2017, p.22
[89] P.28
[90] https://tradingeconomics.com/pakistan/female-headed-households-percent-of-households-with-a-female-head-wb-data.html
[91] World Economic Forum (2018) The Global Gender Gap Report, p.8
[92] P.11
[93] NIPS, *et al* (2019) 2017-18 Demographic and Health Survey, p.14
[94] Ibid, p.19
[95] Punjab Commission on the Status of Women (2018), Punjab Gender Parity Report, p.138
[96] World Economic Forum (2018) The Global Gender Gap Report, p.215

	rank	score	avg	female	male	f/m
Economic participation and opportunity	**146**	**0.318**	**0.586**			
Labour force participation	142	0.307	0.669	26.3	85.8	0.31
Wage equality for similar work (survey)	106	0.574	0.645			0.57
Estimated earned income (PPP, US$)	141	0.185	0.510	1,695	9,155	0.19
Legislators, senior officials and managers	142	0.030	0.329	2.9	97.1	0.03
Professional and technical workers	139	0.278	0.753	21.8	78.2	0.28
Educational attainment	**139**	**0.810**	**0.949**			
Literacy rate	132	0.641	0.882	44.3	69.1	0.64
Enrolment in primary education	133	0.862	0.978	70.6	81.9	0.86
Enrolment in secondary education	137	0.812	0.967	40.1	49.4	0.81
Enrolment in tertiary education	109	0.869	0.939	9.4	10.8	0.87
Health and survival	**145**	**0.946**	**0.955**			
Sex ratio at birth	144	0.920	0.921			0.92
Healthy life expectancy	141	1.005	1.034	57.9	57.6	1.01
Political empowerment	**97**	**0.127**	**0.223**			
Women in parliament	78	0.260	0.284	20.6	79.4	0.26
Women in ministerial positions	144	0.000	0.208	0.0	100.0	0.00
Years with female head of state (last 50)	28	0.104	0.189	4.7	45.3	0.10



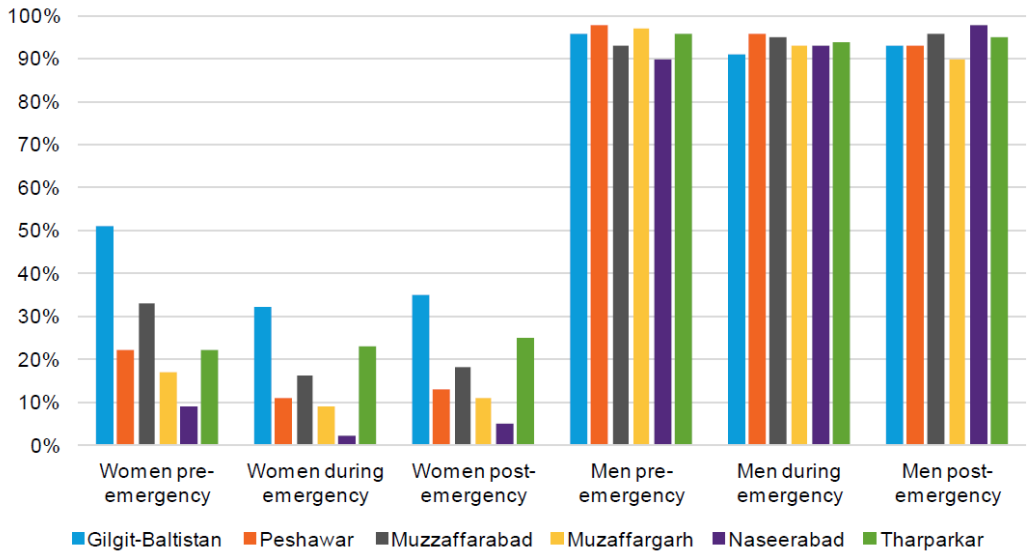
Climate Change and Disasters

While data is patchy, there is some evidence that women suffer more extreme impacts from climate change related disasters than men do. A recent European Union and Oxfam survey in 6 cities (one of which was Peshawar, less than 50km from Nowshera), showed that the capacity of women to adapt and recover is greatly lower than that of men.

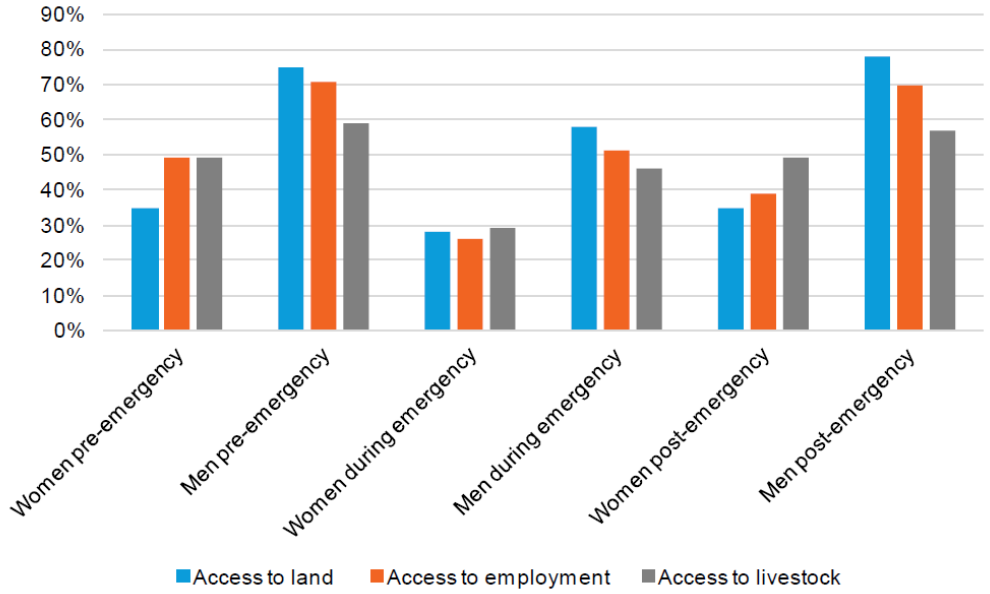
Taking market access as a proxy for economic capacity, we see that the baseline situation for women is far worse across the 6 cities in Pakistan than men and falls off significantly during disasters – and doesn't recover much after disasters. In contrast, men's access to markets stays more or less constant, and much closer to 100%, irrespective of disasters.

Similarly, for access to livelihood resources (land, employment and livestock) the baseline situation of women shows significantly less access to resources for men, which decreases correspondingly during and post disasters. Men's access to livelihood resources appears to recover to its corresponding pre-disaster position, but women's employment, in particular, appears to struggle to rebound. This is evidence to suggest that women have lower economic resilience than men.

Similarly, the survey found that men and women had about the same levels of reporting 'easy access to water' before disasters, but this dropped sharply during and after disasters.

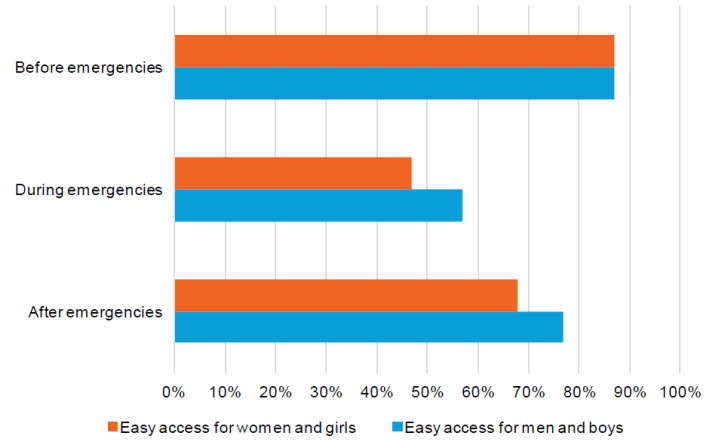


- *Figure 8 - Access to markets, pre, during and post emergency*[97]



- *Figure 9 - Economic indicators for men and women in emergencies*[98]

[97] European Union and Oxfam (2017) Consolidated Gender Analysis for Disaster Response in Pakistan, p.12
[98] P.15



- *Figure 10 - Easy accessibility to sources of drinking water, by gender*[99]

Policy Responses

The most recent statement of Pakistan's policy responses to tackle gender equality and women's empowerment come in the form of the Fifth periodic report submitted by Pakistan under article 18 of the Convention on the Elimination of All Forms of Discrimination Against Women in October 2018. This detailed report contains much information, but of greatest relevance is to highlight the work of NDMA and particularly its National Policy Guidelines on Vulnerable Groups in Disasters.

The guidelines identify the following issues as particular challenges for women in disasters[100]:

[99] P.18

[100] NDMA (2014) National Policy Guidelines on Vulnerable Groups in Disasters, pp.22-24

1. Women are missing from policy and decision-making processes and their voices generally go unheard in all stages of disasters
2. Limited access to information and knowledge inevitably increases women's vulnerabilities to disaster and risk, and that of their families
3. Non-availability of sex disaggregated data discredits the analysis of their required needs and concerns
4. Unavailability of consolidated sector wise data base of professional women like teachers, LHVs, relevant government employees etc
5. Lack of mobility is a hindrance in all sectors
6. Absence of SOPs on effectively dealing with special needs and challenges of women in disasters
7. Absence of gender indicators to monitor and measure the progress
8. Women have been overlooked as frontline workers in emergency services
9. GCCs within the PDMAs are in a weak position
10. Disconnect between the GCCs within PDMAs and the key line departments
11. Inadequate gender sensitivity amongst the relevant DMAs and key line departments
12. Lack of gender aware camp management and food NFI distribution methods

Figure 12 - Issues in Disaster Preparedness and Disaster Risk Reduction

1. Inadequate services available for women in WASH and health
2. Inadequate number of female doctors
3. Access to health facilities for women is restricted
4. Insufficient separate and secure toilets and washrooms for women/girls
5. Absence of space for physical exercise and sports/social and learning activities for girls in camps
6. Lack of understanding and insensitivity of camp management about the security concerns and needs of women
7. Inflexible mindsets prevail and women are taken for granted
8. Evacuation and relocation processes provide inadequate protection to women
9. Women's lack of awareness about evacuation and rescue plans
10. Absence of GBV referral systems and mechanisms during all phases of disaster
11. Absence of Code of Conduct for women's safety and protection in disaster response
12. Absence of women in decision making and planning strategies for rehabilitation and reconstruction processes
13. Absence of women in the designing and approval process of shelters and in the allocation of shelters, food and NFIs to the affected communities
14. Inadequate or no separate desks for the distribution of food and NFIs for women and men

Figure 11 - Issues in response, recovery and rehabilitation

The guide concludes with 'major areas of action' for vulnerable groups in disasters, and these major areas have been used to guide the development of the proposed project[101]. These are:

- Disaggregated data
- Enhancing awareness and capacity
- Institutionalization
- Strong accountability and monitoring mechanisms
- Effective communication
- Paying greater attention to DRR
- Bringing in more women to the disaster management system
- Coordination and resource pooling

Further information about the circumstances of women in Rawalpindi and Nowshera, the two target areas of this project can be found in Annex 6. Information about the risks, potential impacts and risk/impact prevention, mitigation and management measures.

Gender Action Plan

This action plan has been developed to clarify how the project will ensure compliance with the Adaptation Fund Gender Policy and, by doing so, act in compliance with national laws and international treaties, norms and standards. It also describes how the analysis in the first part of this Annex has been incorporated into the proposal. In sum, the purpose of the Annex is to demonstrate that men and women will have an equal

[101] Pp39-41

opportunity to build resilience, address their differentiated vulnerabilities and increase their capability to adapt to climate change impacts through project implementation.

Consultations

As described in Annex 6, separate community consultations were held with men and women. This was designed to give women an equal voice to men. Mixed consultations would have run the risk creating a situation where men dominate the discussion and women are subjugated in it. A sample of these consultations is provided in Annex 6. Moreover, as described in Part II, Section H, the project design team met with UN Women, UN OCHA, UNDP and participated in the Gender Working Group. It also discussed issues relating to the vulnerability and adaptation needs of women with NDMA, PDMA Punjab, WASA and the Ministry of Climate Change.

In the women's only consultation, however, women were vocal and articulate in expressing their vulnerabilities, preferences and priorities. Broadly, women expressed similar perspectives to men. In some cases, they reported worse flood impacts or greater difficulties accessing water, which backs up the secondary research presented in the first part of this Annex.

The Project

The main objective of the proposed project is to "enhance community, local and national-level urban climate change resilience to water scarcity, caused by floods and droughts in Rawalpindi and Nowshera cities." This will be achieved through the following proposed **sub-objectives**:

1. **Community level:** Enhance community and household level flood resilient water harvesting facilities (using innovative techniques) and strengthen capacities to plan, construct, operate, maintain and replicate these.

2. **District / City level:** Enhance city and district-level water harvesting facilities in public buildings and on water storages in public gardens, develop district / city-level spatial strategies as tool to assess climate change related floods, droughts and water scarcity to plan for and manage climate change risks and to strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens.

3. **National and Provincial[102] level:** Strengthen national and provincial-level capacity to guide / direct city-level development considering climate change and disaster risks and impacts, especially water scarcity caused by floods and droughts.

The gender-specific objectives for the project are:

1) To strengthen the capacity of women to adapt to water shortages through rainwater harvesting, including their capacities to plan, construct, operate, maintain and replicate these approaches

2) To enable women to benefit from the public rainwater harvesting systems and plan to manage climate change risks in a way that fully and comprehensively engages women

3) Strengthen national and provincial-level capacity to guide city-level development considering climate change, disaster risks and the differentiated needs of women.

[102] Recognizing that, due to the 18th amendment of the Constitution of Pakistan, it has a highly decentralized governance structure

Women were consulted about the design features and how they related to their specific needs. Their two particular concerns relating to the proposed system were how to ensure continued functionality in the dry season and how to ensure that the water provided is fit for drinking. These issues have been addressed elsewhere in the proposal, particularly health concerns, by following WHO guidelines for safe drinking water, as described in Annex 5 (under Public Health). It should also be noted that men were asked during the consultations for their view on the role of women in management and all agreed that the equal participation of women in the management of community and public RWH facilities would be beneficial.

The project's design and implementation approach are gender responsive because the project development team considered gender equality and women's empowerment in data collection, consultations, activity prioritization, objective setting and the identification of gender related or gender specific risks and impacts. This has been done through secondary research (which is presented in concise form above, in this Annex) and through consultations with stakeholders and communities, described variously in Part II, Section H and in Annexes 6&7. The gender focal point (as well as the human rights focal point) for UN-Habitat's Regional Office for Asia and the Pacific has reviewed the proposal, at full proposal stage, and provided inputs. Specific targets have been made for women's participation throughout the project, and are reflected in the project results framework in Part III, Section E.

Women are not well represented throughout the governance structure in Pakistan, and especially not at the sub-national level. This is why in Output 2.3 the target is to have 20 female participants (out of 50 total, i.e. 40%). Based on the consultations UN-Habitat has done, and its long experience of working with sub-national government bodies in Pakistan, this is a **very** ambitious target. While we do not know the percentage of female staff working in government at the sub-national (and/or the percentage of female staff in substantive/technical positions), we do know the number of women elected to provincial assemblies, and can use this as a proxy. In 2013, 18% and 20% of provincial assembly members in Khyber Pakhtunkhwa and Punjab Provinces, respectively, were female[103].This means this activity is heavily targeted towards women in the government at the sub-national level.

a) Designing the activities to benefit women

The project improves resilience to water scarcity in flood and drought periods, which will be achieved through rainwater harvesting at the household/community and public (i.e. municipal) level.

All stakeholders (communities, local and national government and NGOs/development partners) agreed during the consultations that water access is an enduring adaptation priority (along with health, but many of the health concerns relate to water-borne disease).

Rainwater harvesting was chosen because it is innovative while being low-cost and using simple technologies. RWH is easier and cheaper than installing pipe distribution networks, and carries much lower environmental and social safeguard risks. Because the systems need to be managed, maintained and operated, there is an opportunity to engage women in this process. Moreover, women disproportionately benefit because up to 70% of them[104] are not formally in the labour market, and have the primary responsibility for domestic tasks, such as collecting water.

b) Management arrangements

The project mainstreams gender considerations through its implementation and execution structure. The Women's Development Department of Punjab and Khyber Pakhtunkhwa will sit on the Project Steering

[103] Pakistan Bureau of Statistics (2014) Compendium on Gender Statistics of Pakistan , p.103
[104] According to the community consultations

Committee and have the responsibility for highlighting and overseeing gender-related considerations throughout the project.

Meanwhile, the project's executing entities will be held accountable for ensuring the gender targets described in the project's results framework (Part III, Section E) are met through the Agreements of Cooperation that UN-Habitat will sign with them. All executing entities will also be verbally briefed by UN-Habitat and in-turn all executing entities will brief communities and other stakeholders in the project of the expectations and requirements, as they pertain to gender considerations, including the grievance mechanism to raise any problems.

Using the AoC mechanism, a gender focal point will be established in each executing entity. This person will take the lead on ensuring that the project is implemented in accordance with the female participation targets in the results framework. All staff and consultants will be required to promote the principles outlined in the Gender Policy of the Adaptation Fund. Women will be encouraged to apply for all staff and consultancy positions advertised, and executing entities should seek gender balanced staff/project implementation teams, in so far as possible.

The Project Manager will have the day-to-day responsibility for ensuring that provisions for gender mainstreaming outlined here and throughout the project are being implemented. The Project Manager should hold a bilateral meeting with the Women's Department in Punjab and Khyber Pakhtunkhwa at least once every 6 months (separately to the PSC meeting).

All terms of reference and contracts (Agreements of Cooperation) will make explicit reference to compliance with the Gender Policy of the Adaptation fund (as well as the Environmental and Social Policy of the fund) and the provisions for gender mainstreaming in this project. UN-Habitat's gender focal points in either the Regional Office for Asia and the Pacific or Headquarters will periodically review the project's implementation progress and provide advisory support if issues arise, and/or upon request from the Project Manager.

c) Women in the projects outputs and targets

In addition to the gender responsive indicators in the project's results framework (reproduced below), the project will aim to ensure equal participation of men and women in any forum, event or meeting that it conducts. Where the conservative culture prevents this from happening, separate male and female events or meetings would be held[105]

Output 1.1 - 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques. ***Target -*** 5,000 households (38,885 people, 19,443 women) have RWH facilities

Output 1.2 - 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained, have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through awareness raising campaigns. ***Target -*** 15 Community plans developed and adopted, 300 community members, including 150 women, have the required capacity and guidelines are well understood.

[105] Note that at certain times of the year – such as during the month of Ramadhan – it is not acceptable in some locations for women to participate in meetings in the same room as men. In cases such as this, separate meetings will take place, giving women equal chance to participate, and equal voice

Output 2.1 - 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed. ***Target -*** 50 District/city level RWH facilities constructed and functional, benefitting up to 150,000 people (of whom, at least 75,000 will be women.

Output 2.3 - 50 government officials trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans. ***Target -*** 50 officials, including 20 women, trained on planning construction and maintenance, as well as developing spatial plans.

Output 3.1 - 100 government officials (with an equal number of men and women) trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools. ***Target*** 100 officials, including 50 women trained and have sufficient knowledge to plan considering climate change adaptation needs and disaster risks

Output 3.2 - One National urban strategy focused on climate change / disaster risk reduction and with comprehensive gender mainstreaming developed and one set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed. ***Target -*** The national strategy and guidelines have been developed and approved, increasing knowledge at the national level and facilitating national-level replication.

d) Budget

Gender considerations are mainstreamed into the project's activities, under the outputs listed above. These activities provide budget lines accordingly.

e) Monitoring and Evaluation

The Gender Action Plan, below, will be incorporated into the overall monitoring and evaluation of the project, including the indicators. The monitoring of the Gender Action Plan will be done through participatory means with key stakeholders in the communities, union councils, municipalities and provinces.

f) Knowledge Management

All knowledge related components of the project will also ensure gender parity and gender considerations in the planning and implementation. The project will maintain a gender and age disaggregated but anonymized database of direct beneficiaries and stakeholders involved in the project.

The Gender Action Plan

The project has developed a gender action plan to ensure equal participation of men and women and to integrate the gender-related needs of the local communities into the technical design and the way the project is implemented.

The Gender Action Plan describes the proposed measures to be included in the project design and implementation to promote gender equality and mainstreaming in the activities and consequently the outputs of the project. In particular, it focuses on the gender concerns relating to equal access to the facilities, participation in decision-making, women's access to training and practical skills, and how the plans/strategies developed will ensure equal opportunities for women. Overall, the main approaches undertaken so far, or to be undertaken, are: 1) Consultations that consider equally the perspectives of women and men, 2) Gender sensitivity in the project's implementation and 3) To promote women to take staff and consultancy positions in the project.

Table 4.1 – Gender Action Plan

Project Components	**Outputs**	**Action**	**Indicator**	**Responsible Party**
Component 1 Enhance community- and household-level flood resilient water harvesting facilities (using innovative techniques) and to strengthen capacities to plan, construct, operate, maintain and replicate these.	Output 1.1 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	The engineer's survey considers equally the needs of men and women, and particularly considers women who work in the home Discussions with communities are gender equal and disaggregated	Engineer's survey complete, and describe in detail how the needs of women (particularly women who work in the home) have been incorporated Equal number of men and women participate. Attendance registers taken (anonymised) that identify numbers of men and women	Executing entity Project Manager (Backstopping and quality control) PSC (oversight)
	Output 1.2 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/8 in Nowshera), community members (especially women and youth) trained, have requisite knowledge and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through awareness raising campaigns	Training for community members trains an equal number of men and women (150 men, 150 women, 300 total) An equal number of male and female community champions identified Community-scale plans equally consider the needs of men and women. Women's adaptation and development needs are fully incorporated	Training complete with records documenting equal participation from men and women Community champions identified and a brief profile made including recording gender Community plans prepared and reviewed by the Project Manager and PSC	Executing entity Project Manager (Backstopping and quality control) PSC (oversight)
	Output 1.3 Awareness campaigns to increase	Campaign materials will be developed that also target	Campaign materials developed and reviewed by	Executing entity Project Manager

	knowledge in all target communities to reduce dumping of solid waste in drainage channels	women, and through media that women are likely to access	the project manager and PSC	(Backstopping and quality control) PSC (oversight)
Component 2 District / city level activities – Enhance city and district-level water harvesting facilities in public buildings and on water storages in public gardens, develop district / city level spatial strategies as tool to assess climate change related floods, droughts and water scarcity to plan for and manage climate change risks and to strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens.	Output 2.1 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	Training for managers of public buildings will include sensitivity to women/ensuring that the needs of women are highlighted	Training materials prepared that clearly highlight the risk and vulnerability of women, and how the project promotes safeguarding of their interests	Executing entity Project Manager (Backstopping and quality control) PSC (oversight)
	Output 2.2 Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans.	The MHVRA and spatial strategies will full consider the differentiated risks and vulnerabilities of women, their adaptation options and potential and outline proposed actions that specifically benefit women	The MVHRA complete with comprehensive analysis of the differentiated risks and vulnerabilities of women, and adaptation options that benefit them	Executing entity Project Manager (Backstopping and quality control) PSC (oversight)
	Output 2.3 50 government officials, including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans	20 female officials included in the training All training materials consider the differentiated and/or particular needs of women	Training complete with documentation to show that at least 20 women participated throughout. All training materials clearly indicate the need to consider the particular and differentiated adaptation needs of women	Executing entity Project Manager (Backstopping and quality control) PSC (oversight)
Component 3	Output 3.1.	An equal number of male	Training records/registers	Executing entity

National level activities - Strengthen national-level capacity to guide / direct city-level development considering climate change and disaster risks and impacts, especially water scarcity caused by floods and droughts.	100 government officials (with an equal number of men and women) trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.	and female training participants	taken, showing an equal number of men and women attended and completed the training	Project Manager (Backstopping and quality control) PSC (oversight)
	Output 3.2 One National urban strategy focused on climate change / disaster risk with comprehensive gender mainstreaming reduction developed One set of National guidelines for spatial planning considering climate change / disaster risks with comprehensive gender mainstreaming developed	The strategy and guidelines consider the particular and differentiated vulnerability, adaptation and development needs of women	The strategy and guidelines are complete, with inputs from various gender experts, including UN-Habitat ROAP/HQ specialists and the Women's Development Department	Executing entity Project Manager (Backstopping and quality control) PSC (oversight)

Annex 5 – Analysis of Environmental and Social Risks and Potential Impacts, and Environmental and Social and Gender Policy Compliance Plan

Introduction and Purpose

The purpose of this Annex is to demonstrate the project's compliance with the Environmental and Social and Gender Policies of the Adaptation Fund. It provides an analysis of the potential environmental and social risks of the project's physical activities and highlights opportunities, concluding in an Environmental and Social and Gender Policy Compliance Plan. The contents of this plan will be made available to the PSC before the project commences, and it will be used as a basis to brief beneficiary communities before the project commences.

Compliance with environmental and social safeguards

Environmental and social safeguards are essential tools to prevent and mitigate the potential for undue and unintended harm that could arise from project activities. In line with the Adaptation Fund's ESP and GP and UN-Habitat's Environmental and Social Safeguard Policy (ESSP), UN-Habitat and its partners are required to conduct risk screenings and impact assessments of all activities that have even a negligible risk of causing unintended harm.

To ensure compliance with the Environmental and Social Policy of the Adaptation Fund, all project activities are screened against the 15 environmental and social principles, as defined in the Environmental and Social Policy of the Adaptation Fund. Where risks have been identified, this annex analyses the potential for impact and describes the measures that have been built into the project to avoid or mitigate risks and their impacts. This Annex supersedes the 'work in progress' Annex that was submitted during the concept note phase.

To ensure compliance with the Adaptation Fund Gender Policy, a gender baseline approach was taken, and this is detailed separately in Annex 4. However, this also informs the risk and impact assessment of gender equality and women's empowerment, presented here. This analysis also sets the baseline that informs the project's results framework and monitoring. Where possible, this gender baseline approach identifies possible additional benefits that can be achieved for women (as well as children and youth).

This analysis provides data and analysis based on consultations with communities, the census[106] and secondary data that helps identify the climate change impact related risks, requirements and opportunities for the target communities. Activity prioritization and the identification and verification of potential risks and impacts and, where needed, identification of measures to avoid or mitigate potential risks have been done with project beneficiary groups through the interviews, focus groups and community planning that has been done with the target communities.

Please note that all technical designs are provided and explained in Annex 1. This Annex refers to these designs throughout.

Section 1.2 Screening and Categorization

Table 5.1, below, screens the project's activities against the 15 Adaptation Fund Environmental and Social Policy principles (hereafter, the 15 principles) and provides a summary of why the principle has been triggered or not. Further details and analysis are provided throughout this annex. Further detailed project design sheets can also be provided

[106] Please note that only Provisional data from the 2017 Census has been released at the time of preparing the proposal. The proposal development team was able to get unpublished population data down to the district level, but this data was not gender disaggregated and did not contain any information regarding livelihoods or housing, for example. UN-Habitat is continuing to work with the government of Pakistan to get more detailed information from the 2017 Census, and when this becomes available, it will be used to update the proposal document and this Annex. With this in mind however, the proposal had to make use of a mixture of census data and data (including estimates) held by various government departments and local government offices. We recognize that this is not ideal, but nevertheless we believe it represents the most accurate picture possible at the present time.

upon request. Where appropriate, this annex also contains information gathered through the community consultation process, which is described further in Part II, Section H.

It should be noted at this point that only activities under Outputs 1.1 and 2.1 involved physical works (construction, installation of facilities, maintenance) and so on. All other activities in the other outputs proposed by the project are 'soft' activities that involve training, reports and publications. As such, Activities under Outputs 1.1 and 2.1 are considered category B risk and require further screening. The remaining activities are considered Category C, and therefore no risks arise, and impact assessments are therefore not required. In the analysis below, there are occasional references to mitigation measures that are to be factored into soft activities where these support a hard activity to reduce environmental and social risks – i.e. where training will emphasize gender equality and women's empowerment. This notwithstanding, it should be assumed that soft activities have been considered to have no risk or such minimal risk that mitigation measures are not required and, for reasons of space, are not discussed further here.

Table 5.1 - Environmental and Social Risk Screening

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment required for compliance	Explanation why principle has been triggered (or not)
1. Compliance with the law	X		All issues relating to compliance with the law have been checked in Part II, Section E and described thoroughly there
2. Access and equity		**X**	The project provides a basic service (water, during flood periods). There would be potential, without risk avoidance or reduction measures, for the target beneficiaries to benefit inequitably, or for some groups to be excluded altogether
3. Marginalized and vulnerable groups		**X**	While the target area doesn't have many marginalised or vulnerable groups in terms of migrants or indigenous people, women still suffer from discrimination and lack of opportunities in Pakistan. Because a service is being provided, there is a risk of exclusion of women if mitigation measures are not in place. Official population figures **do not** show the presence of migrant or refugee groups in the target areas. However, community consultations repeatedly showed the presence of Afghan migrants in both target areas. Ensuring their participation (and ensuring that they are not excluded) is challenging because they often do not have formal citizenship or residency status and live informally. There is informal evidence that these Afghan families face social and economic discrimination. Measures to try to address this problem are included below
4. Human rights	X		Aside from the aforementioned risks of discrimination (which are considered throughout this Annex under Marginalise and Vulnerable Groups and Gender Equality and Women's Empowerment, there are no discernible human rights risks. Pakistan is a signatory to the Universal Declaration of Human Rights, rights are enshrined in its constitution and the project itself works on public land (thus mitigating any risk of resettlement), the project will not use the labour of anyone under the age of 18, or any forced labour (and labour issues are considered in Core Labour Rights). Table 5.3 below highlights the ratification status of key human rights treaties and legislation

5. Gender equality and women's empowerment		**X**	As described above. The position of women in Pakistani society means that they are oftentimes inequitable to men. This means that they may, without mitigation measures, not benefit equally (or at all) from the project. For example, Pakistan came 2nd-bottom of the World Economic Forum's Global Gender Gap Index[107], showing that the gap in outcomes between men and women across a variety of issues, including health, economic outcomes, political representation and social status is substantial
6. Core labour rights		**X**	The project will use some community labour to do unskilled construction tasks, in accordance with UN-Habitat's proven People's Process approach. However, without appropriate risk mitigation measures, there is a possibility that there could be exploitation of people providing their labour to the project
7. Indigenous people	X		There are no indigenous people in the target area (which is highly urbanised/densely populated), and as such this risk has not been triggered.
8. Involuntary resettlement		**X**	Because the project will install household level rainwater harvesting systems involuntary resettlement could be a risk without mitigation measures. Not because they would be evicted from their homes, but rather because there could be damage to their homes, or prevention of access, or other temporary structural alteration to homes
9. Protection of natural habitats	X		There is no risk triggered here because there are no natural habitats or critical ecosystems in or around the project's target areas, which are in highly urbanised locations (see maps in Annex 3). The rivers (Nullahs) that cause the flooding are near the area, but no construction will take place in or near them.
10. Conservation of biodiversity	X		As above, there are no ecosystems or biodiversity in the highly urbanised areas where the project will be implemented, and as such no biodiversity that could be affected by the highly localised construction activities
11. Climate change		**X**	There could be some nominal emissions without steps taken to minimise them. If the project is ineffective, it will not make a significant contribution to the adaptation of the target population
12. Pollution prevention and resource efficiency		**X**	The construction activities associated with the project could lead to some small-scale pollution of non-hazardous materials (such as plastics and basic construction materials). The project will not use any hazardous materials in its construction. However, if measures are not development and enforced, there is a possibility of pollution occurring.
13. Public health		**X**	Because the project concerns providing water for domestic (including drinking and other household) purposes, there are public health considerations relating to the potability of the water. In particular there are risks that water could be contaminated due to 1) impurities/contaminants on the roofs of buildings, 2) Impurities

[107] World Economic Forum (2018) The Global Gender Gap Report, p.8

			that enter pipe systems through cracks/holes, 3) Impurities that enter at the distribution points. All of the above creates public health risk in terms of the spread of water-borne disease. This would be more likely to seriously impact the young, elderly or people with pre-existing health conditions.
14. Physical and cultural heritage		**X**	Although there are no UNESCO listed heritage sites in or around the target area, there are old buildings, mosques and some buildings of historical and heritage importance.
15. Lands and soil conservation	X		As the project works in highly urbanised, densely populated areas there is no prospect of disturbance to land or soils.

Details and results of the risk screening process

Principle 1: Compliance with the law.

Screening result: No risk

Explanation: All issues relating to compliance with the law have been checked in Part II, Section E and described thoroughly there. Please also see principle 8: involuntary resettlement for how issues of consent are considered regarding working in and around people's homes.

Principle 2: Access and equity

Screening result: Potential risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

Explanation: The community consultations in particular identified that there is potential for risk in terms of access and equity without management measures. This particularly concerns the ability of women, as discussed below in Principle 3; marginalized and vulnerable groups. The project provides a basic service (water, during flood periods). There would be potential, without risk avoidance or reduction measures, for the target beneficiaries to benefit inequitably, or for some groups to be excluded altogether. As Annex 4 highlights, there is evidence in Pakistan that, during disasters, women suffer worse outcomes in terms of access to water and recover from disasters more quickly[108]. Management arrangements have been developed to address this and ensure that there is continuous, equitable access throughout the project and beyond. These are discussed later in this Annex.

Because the project activities under Outputs 1.1 and 2.1 provide an additional service that was not previously available, there is no realistic risk of diverting existing services away from people. The project doesn't repurpose land, rehabilitate old infrastructure or do anything else that affects services that are otherwise being provided. As such, there is no realistic risk that the project will prevent people from accessing infrastructure and services that they already have, or aspire to, access in the future.

Principle 3: Marginalized and vulnerable groups

Screening result: Potential risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

[108] See for example Oxfam (2017) Consolidated Gender Analysis for Disaster Response in Pakistan

Explanation: Women are the main marginalized and vulnerable group in the area. While the census and government-provided population data does not point to the existence of migrant/refugee communities, the community consultations held in the formulation of this proposal highlight the existence of small numbers of asylum seekers and refugees from Afghanistan. As argued above and Annex 4 women in Pakistan can be considered a marginalized/vulnerable group. A full action plan to engage women has been provided, below.

According to UNHCR, there are 1.3 million registered Afghan Refugees in Pakistan at present, and the government of Pakistan pledged to give them 'proof of registration' (essentially leave to remain in the country) in 2017[109], however, at present it is unclear the extent to which this programme has been rolled out. In 2018, Pakistan's Prime Minister pledged to 'upgrade' this proof of registration to full-fledged citizenship, though there is no clear evidence that this has been carried out as of the development of this proposal[110] (June 2019). This pledge, however, appears to have reversed an earlier threat to deport some 400,000 undocumented migrants[111]. So, at present, it appears that there is no deportation threat for Afghan migrants, and that the Government of Pakistan is committed to registering and, eventually, naturalizing them. However, this does not mean that they are free from social and economic discrimination, which is less visible. This situation clearly requires risk mitigation measures however, and these are discussed later in this Annex.

Table 5.2 - Screening of Marginalised and Vulnerable Groups

Output / activity	Location	Stakeholders (disaggregated marginalized or vulnerable groups)	Possible risk / adverse impacts (Identified specific needs, limitations, constraints, concerns) + identified rivals, disputants (see principle 2)
5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	Rawalpindi: especially UC 4,5 and 6, but also 1,2, 12 and 37 Nowshera Kalan (including UCs namely Nowshera City, Kabul River, Chowki Town and Nawan Kallaey)	Vulnerable groups – Women, migrants[112]	There is a possibility, without management or mitigation measures, that facilities may not be designed in a way that suits the needs of women.
50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed (or smaller number if possible)	Rawalpindi: especially UC 1,2, 4,5, 6, 12 and 37 + whole of Rawalpindi Nowshera District	Vulnerable Groups – Women, migrants	There is a possibility, without management or mitigation measures, that women may be excluded (either explicitly or tacitly) from benefitting from the Public RWH facilities, especially where these involve public collection points. Women may feel it is unsafe to access these, or they may be prevented from accessing them. There is also a possibility that migrants may be excluded from the use of facilities, especially in public buildings, due to formal (i.e. a lack of formal papers) or informal (i.e. not feeling welcome) discrimination

[109] https://unhcrpk.org/unhcr-welcomes-new-government-policy-for-afghans-in-pakistan/
[110] https://www.theguardian.com/world/2018/sep/17/pakistan-imran-khan-citizenship-pledge-afghan-refugees
[111] https://www.rferl.org/a/unregistered-afghan-refugees-face-deportation-by-pakistan/24630022.html
[112] From here on in, the assessment will use the term 'migrants' to describe the Afghan communities that have been identified as a result of the community consultations. The term assumes no judgement on the formal legal status of these people and makes no presupposition as to the purpose of their leaving Afghanistan. The project team assumes that they are a 'marginalized and vulnerable group' because of the broader pattern of discrimination against people from Afghan migrant backgrounds.

Stakeholder	Description of characteristics of vulnerability or why marginalized (or not)
Women	This information has been provided in full in Annex 4 - the Gender Baseline Annex

Principle 4: Human rights

Screening result: No risk

Explanation: Aside from the description in the table above, the general design features of the project, and the Environmental and Social Management Plan ensure that there are no realistic or discernable human rights issues emerging from the project's activities. UN-Habitat is satisfied that the constitution and laws of Pakistan, its international commitments and its improving security situation, amount to a situation where there is no realistic risk to people's human rights. Issues such as involuntary resettlement and gender equality and women's empowerment, which are related to human rights, are covered under the respective principles.

Please see the table below for a summary of the ratification of various human rights treaties in Pakistan. This shows that Pakistan has ratified the major rights treaties, such as CEDAW and the International Covenant on Civil and Political Rights. Pakistan has had four visits by special rapporteurs from human rights since 1999.

While the table below shows several human rights treaties have not been ratified by Pakistan, most of them don't have a bearing on the proposed project. However, it could be argued that the ratification of the International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families and Optional Protocol to the Convention on the Rights of Persons with Disabilities would offer greater levels of protection. With this in mind, risk mitigation measures are proposed later in this annex.

Table 5.3 - Human Rights Treaties Ratified by Pakistan

Organisation consulted	Possible human rights issue (cited, non-ratification)	
OHCHR	Of the 18 'core' human rights treaties, Pakistan has ratified 9 of them[113]. These are as follows:	
	Ratified	***Not ratified***
	• International Convention on the Elimination of All Forms of Racial Discrimination (1969) • International Covenant on Civil and Political Rights (1976) • International Covenant on Economic, Social and Cultural Rights (1976) • Convention on the Elimination of All Forms of Discrimination against Women (1981) • Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (1987) • Convention on the Rights of the Child	• Optional Protocol to the International Covenant on Civil and Political Rights (1976) • Second Optional Protocol to the International Covenant on Civil and Political Rights, aiming at the abolition of the death penalty (1991) • Optional Protocol to the International Covenant on Economic, Social and Cultural Rights (2013) • Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women (2000) • Optional Protocol to the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (2006) • Optional Protocol to the Convention on the Rights of the Child on a communications procedure (2014) • International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families (2003) • International Convention for the Protection of all

[113] https://indicators.ohchr.org/

	(1990) • Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict (2002) • Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography (2002) • Convention on the Rights of Persons with Disabilities (2008)	Persons from Enforced Disappearance (2010) • Optional Protocol to the Convention on the Rights of Persons with Disabilities (2008)

Principle 5: Gender equality and women's empowerment

Screening result: Potential Risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities as the project has built-in targets and indicators for the inclusion of women in its results framework.

Explanation: As highlighted above and in Annex 4, women throughout Pakistan face numerous challenges that either more severe than those faced by men, or that men don't face, including access to water during disasters, and the ability to recover quickly from lack of potable water arising from flood events. However, it must also be noted that the community consultations conducted in support of the preparation of this proposal generally reached a consensus (including in the female-only consultations) that there have not been cases of men denying women access to water. However, noting the potential risk here, documented in other projects, the measures described later in this Annex have been devised to support women.

Principle 6: Core labour rights

Screening result: Potential risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

Explanation: The project will use some community labour to do unskilled construction tasks, in accordance with UN-Habitat's proven People's Process approach. However, without appropriate risk mitigation measures, there is a possibility that there could be exploitation of people providing their labour to the project.

This risk is small, however. UN-Habitat will legally oblige (through Agreements of Cooperation) its executing partners to uphold international labour standards, and Pakistan has ratified and transposed into law all eight fundamental conventions of the International Labour Organisation (See below). The risk of breaches of core labour rights arises because there remain high rates of work outside the formal economy in Pakistan. If people in the informal economy work on the project, it would be difficult to guarantee their core labour rights. Recognising that these workers depend on informal work for their livelihoods, however, the approach of the project would not be to replace informal workers with formal ones, but rather to formalise any informal workers who may work on it.

Table 5.4 - Screening Core Labour Standards

Organisation consulted	Possible ILO core labour standards compliance issue (non-ratification)
ILO	Pakistan has ratified all eight fundamental conventions of the ILO: • Freedom of Association and Protection of the Right to Organise Convention, 1948 • Right to Organise and Collective Bargaining Convention, 1949 • Forced Labour Convention, 1930

	• Abolition of Forced Labour Convention, 1957 • Minimum Age Convention, 1973 • Worst Forms of Child Labour Convention, 1999 • Equal Remuneration Convention, 1951 • Discrimination (Employment and Occupation) Convention, 1958

Principle 7: Indigenous people

Screening result: No risk

Explanation: There are no indigenous people in the target area (which is highly urbanised/densely populated), and as such this risk has not been triggered. Continued monitoring, as described later in this annex, will be used to ensure that, if there were to be indigenous groups or migrants suddenly living in the area after the project starts, their rights would be protected and steps would be taken to ensure that they are not excluded or negatively affected by the project.

Principle 8: Involuntary resettlement

Screening result: Potential risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

Explanation: The household level rainwater harvesting facilities to be installed are designed to work with existing dwellings and settlements, not to displace them, and as such there is no risk arising from this activity. Similarly, the RWH facilities in public buildings have already been discussed with WASA and identified. These are public buildings and/or public spaces and as such there is no risk of eviction from them. Likewise, the RWH facilities will not lead to waste, run-off or any other externalities that could realistically lead to eviction or involuntary resettlement.

However, there is a risk that construction work could cause damage to homes, and/or temporary inconvenience to people living in the areas (both beneficiaries and non-beneficiaries) and as such the risk has been triggered and management and mitigation measures have been described later in this Annex.

While involuntary resettlement (in the sense of eviction or people involuntarily leaving their homes) is, in and of itself, not a risk in this project (rather, disruption of access and minor damage to homes as a result of construction is), there is a National Resettlement Policy, evidence that there is a policy position by the Pakistan Government to prevent forced eviction and resettlement and create a due process. While there it is expected that there will be no need to draw upon this policy, it is there if resettlement were to become an issue[114]. Moreover, the National Resettlement Policy is under the auspices of the Environmental Protection Agency, which is an autonomous unit of the Ministry of Climate Change – the AF NDA and chair of the Project Steering Committee.

Table 5.5 - Screening for Involuntary Resettlement Risks

Output / activity	Location	Private or public land and land use	Possible risk of resettlement (+ explanation)
5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting	Rawalpindi: especially UC 4,5 and 6, but also 1,2, 12 and 37 Nowshera Kalan (including UCs namely Nowshera City, Kabul River, Chowki Town and Nawan Kallaey). Please see full list of locations in Annex 3	The homes targeted are all on private land. Some public land is affected, where digging is required to build the underground	The risk of resettlement is very negligible. However, there is a risk of some temporary disruption of access to homes while construction takes place, and some disturbance in terms of noise and construction workers in the area. These issues will be temporary, and the area and

[114] Pakistan Environmental Protection Agency (2002), National Resettlement Policy

facilities constructed, using innovative techniques		storage facilities (See Annex 1).	houses will be returned to their previous state once works have been completed (with the addition of the RWH facilities)
50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed (or smaller number if possible)	Rawalpindi: especially UC 1,2, 4,5, 6, 12 and 37 + whole of Rawalpindi Nowshera District	All buildings are public and on public land	The risk of resettlement here is also very negligible. All buildings used for the public RWH facilities are public buildings, on public land, and are not residential. As above, there will be some temporary disruption while works are being undertaken, that may cause noise, construction equipment and workers in the area and some partial restrictions on access. However, these will be temporary, and once works are complete the buildings will be returned to their previous function, with no permanent damage, disfigurement or any other change, except for the RWH facilities

Principle 9: Protection of Natural Habitats

Screening result: No risk

Explanation: There is no risk triggered here because there are no natural habitats or critical ecosystems in or around the project's target areas, which are in highly urbanised locations (see maps). The rivers (Nullahs) that cause the flooding are near the area, but no construction will take place in them or on their banks. No construction materials or waste products will go into the river or nullahs, and the volume or direction of flow of the river and nullahs will not be changed or affected in any way by the project's construction or the functioning of the rainwater harvesting units.

For reference, there are 157 areas in Pakistan that are protected areas as defined by IUCN. This includes 5 national parks, 62 wildlife sanctuaries, 5 protected landscapes and seascapes, 2 managed resource protected areas, and 83 areas that are protected in some way, but unclassified by IUCN. None of these areas are in or around the areas targeted by this project, which, as mentioned elsewhere in this annex, are densely populated and highly urbanised.

Principle 10: Conservation of biological diversity.

Screening result: No risk

Explanation: As above, there are no ecosystems or biodiversity in the highly urbanised areas where the project will be implemented, and as such no biodiversity that could be affected by the highly localised construction activities. There are 15 endangered species as identified by IUCN in Pakistan, however, none of them live anywhere near the target area of this project[115].

Principle 11: Climate change

Screening result: Potential risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

[115] https://www.mangobaaz.com/these-15-endangered-animals-in-pakistan-are-at-risk-of-extinction

Explanation: Emissions could be generated without mitigation measures from a variety of sources. Imported materials, for example, have a higher carbon footprint because of the transportation costs involved. Waste generated from construction can lead to methane emissions if dumped openly rather than using sanitary landfill or, better, recycling. Some of the units to be installed will require small pumps. Without effective design or management, these could be modified to use diesel generator driven pumps, which can lead to emissions. In the areas targeted by the project, reliable grid electricity is available, meaning that diesel generators will not be necessary.

Meanwhile, the project may prove mal-adaptive if the tanks prove ineffective (see Part II, Section A for a discussion of why the intervention is most likely to be effective). Likewise, if poor construction and management practices are followed – such as if the tanks are allowed to overfill or if waste generated blocks the river or the nullahs, they will contribute to flooding either beneficiary communities or communities adjacent to them.

Principle 12: Pollution prevention and resource efficiency

Screening result: Potential Risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

Explanation: The construction activities in the project will use plastics, PVC piping and a small amount of concrete. This can generate some small-scale and highly localized waste, if not disposed of correctly. The project will not use any hazardous materials in its construction, so there are no realistic risks of pollution arising from hazardous materials such as asbestos. The project's activities (associated with the household level and public rainwater harvesting) will generate little or no waste in the day-to-day course of their operation. Routine maintenance may generate very small amounts of localised waste (such as when plastic pipes are replaced, for example).

Table 5.6 - Screening for Pollution Risks

Output / activity	Possible inefficiencies in energy and material resource use and waste and pollution due to project activity	Possible risk / impacts
Output 1.1 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	***Waste:*** Improper disposal of waste/surplus construction materials ***Procurement:*** Without guidance, materials could be sourced from non-local sources, requiring unnecessary transportation ***Design:*** Designs are based on locally available materials and hardware, with minimal use of electricity and no emissions in the general use of the systems	Improper waste disposal would lead to local solid waste pollution and potential for GHG emissions. Disposal in the river/Nullah Lai would be especially damaging, as this could exacerbate the waste problems that already exist and contribute to further flooding. Procuring non-local materials would be inefficient, lead to unnecessary emissions from transportation and could be more expensive.
Output 2.1 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed (or smaller number if possible)	As above	As above

Principle 13: Public Health.

Screening result: Potential Risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

Explanation: Community consultations and data gathered during the project's formulation that public health continues to be a serious problem in both target cities, with high rates of water-borne disease, and climate change threatening to exacerbate this. Because the project concerns providing water for domestic (including drinking) purposes, there are public health considerations relating to the potability of the water. If the project did not take proactive measures to promote and ensure high quality drinking water, there could be public health through the rainwater harvesting units providing poor quality or contaminated water.

Table 5.7 - Public Health Risks

Output / activity	Possible health risks (related to below)	Description possible health risks / impacts
Output 1.1. 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	☐ Safe water ☐ Safe house ☐ Communities and roads ☐ Employment and working conditions – people in employment are healthier, particularly those who have more control over their working conditions	***Safe Water:*** Because the project provides water to people, there is a risk that, without management or mitigation measures, the water could become contaminated with impurities or bacteria (either through poor management, using old/dilapidated infrastructure, or lack of knowledge from the community). There are also risks arising from contaminants on the roofs or through leaks or cracks in the piping. Given the densely populated nature of the settlements, water-borne disease arising from contaminated water could quickly spread and cause significant increases in rates of water-borne disease without management and mitigation measures. This would particularly impact the young, elderly and people with pre-existing medical conditions. ***Safe House:*** Because the RWH units are installed in (or near) homes, there is an inherent risk that they could pose safety risks (either during or after construction) if effective management or mitigation measures are not put in place (this could be through, for example, loose stones or masonry, improperly attached parts or because people (i.e. children or those who have not been trained on operation and maintenance) have access to the facilities. ***Communities and Roads:*** The construction will also, in some cases, cause disruption to some public roads, in the communities. This risk is temporary, during the construction phase, but without management or mitigation measures it could cause injury if construction areas are not market, and/or inconvenience if access is disrupted. ***Employment and Working Conditions:*** See above, Core Labour Rights
Output 2.1. (concrete) 50 district / city-level water	☐ Safe water ☐ Healthy workplace ☐ Communities and roads ☐ Employment and working	***Safe Water:*** Because the project provides water to people, there is a risk that, without management or mitigation measures, the water could become contaminated with impurities or bacteria (either through poor management,

harvesting facilities in public buildings and on water storages in public gardens constructed (or smaller number if possible)	conditions – people in employment are healthier, particularly those who have more control over their working conditions	using old/dilapidated infrastructure, or lack of knowledge from the community). There are also risks arising from contaminants on the roofs or through leaks or cracks in the piping. Given the densely populated nature of the settlements, water-borne disease arising from contaminated water could quickly spread and cause significant increases in rates of water-borne disease without management and mitigation measures. This would particularly impact the young, elderly and people with pre-existing medical conditions. ***Healthy Workplace:*** The public buildings are the regular workplace for hundreds of people, there is a temporary risk that during the construction phase, the people who work in the public buildings' workplace will be disrupted by noise or dust. ***Communities and Roads:*** The construction will also, in some cases, cause disruption to some public roads, in the communities. This risk is temporary, during the construction phase, but without management or mitigation measures it could cause injury if construction areas are not marked, and/or inconvenience if access is disrupted. ***Employment and Working Conditions:*** See above, Core Labour Rights

Principle 14: Physical and cultural heritage.

Screening result: Potential Risk resulting from activities under Output 1.1 and Output 2.1. No risk arising from any other activities.

Explanation: The project will install rainwater harvesting facilities in public buildings. In most cases (and as is typical in a Muslim country like Pakistan) most communities have one or more mosques in the area. In some cases, the public buildings involved in the project are old, and though not officially designated as heritage, it is imperative to ensure that they are not damaged. One of the target buildings (in Rawalpindi) is a mosque. A full list of the public buildings targeted by the project is provided in Annex 3 There are no sites recognized by UNESCO in the target area, however.

Table 5.8 - Screening for Risks to Physical and Cultural Heritage

Output / activity	Heritage sites present or near	Possible risks / impacts – alteration, damage, removal
Output 1.1. 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	There are no UNESCO listed heritage buildings in the area (a list of such UNESO buildings is provided later on in this Annex).	There is no risk of removal, destruction, or permanent damage to any of the buildings identified by UN-Habitat as being historic, protected or religious. However, there is a small risk of temporary disruption to access due to construction works. Mitigation measures are provided to minimise this risk and any disruption.
Output 2.1. 50 district / city-level water harvesting facilities in public	There are no UNESCO listed heritage buildings in the area (a list of such UNESO buildings is provided later on in this Annex).	There is no risk of removal, destruction, or permanent damage to any of the buildings identified by UN-Habitat as being historic, protected or religious.

buildings and on water storages in public gardens constructed (or smaller number if possible)	We should however provide a list of historic, protected or religious buildings in the area….	However, there is a small risk of temporary disruption to access due to construction works. Mitigation measures are provided to minimise this risk and any disruption. One mosque is among the list of public buildings in Rawalpindi. One of the public RWH units will be situated on the grounds of the mosque. However, the placement and function of the RWH unit will not affect the building or the ability of worshippers to use the mosque. Construction will not take place on Friday or during prayer timings.

Principle 15: Land and soil conservation

Screening result: No risks

Explanation: As the project works in highly urbanised, densely populated areas there is no prospect of disturbance to land or soils.

1.3 Environmental and Social Impact Assessment

The table below provides an overview of the project's proposed activities and their potential risks and impact assessment against the 15 principles. More detailed project design sheets with more detailed impact assessment information have been prepared and can be shared upon request. Moreover, the complete environmental and social impact assessment document can also be provided on request. These are not included here due to space constraints However, the project development team has included all the pertinent information here.

The below tables describe potential impact that could be reasonably expected **if no risk management or mitigation measures were put in place.**

The ESIA, presented below in abridged form (to comply with proposal length restrictions), was prepared primarily by using secondary data, reports and analysis of this information by the proposal development team to reach conclusions about what the likely impacts of the identified risks would be. Where studies, data and secondary information is used in the below analysis, it is referenced accordingly. In some cases, and where available, the assessment uses unpublished information obtained from government departments. This approach was taken because some government agencies/departments in Pakistan obtain data that they don't publish, but shared with the team in the consultations that led to the formulation of this proposal. As highlighted in Part II, Section H, consultations with communities also took place, and these were important in the project's design and focus. The communities were also consulted as part of the Environmental and Social Safeguards approach, and their views are reflected – especially under the Access and Equity, Marginalised and Vulnerable Groups and Gender Equality and Women's Empowerment Principles. However, the consultations took a more 'confirmatory' approach in the formulation of the ESIA due to the requirement that the ESIA be evidence rather than perception based. Where the ESIA relies on community consultations to arrive at findings or make assumptions about likely impacts, this is stated.

Table 5.9 - Environmental and Social Impact Assessment

Project activities		Potential risk / impact	Impact assessment
Component	Activities		
Component 1&2:	Output 1.1. and 2.1	Risks identified under ESP Principles 2, 3, 5, 6, 8, 11, 12, 13, 14	**Access and Equity** As section 1.2 of this Annex demonstrated, women are the main vulnerable group, and as such as the primary concern regarding differential access and equity. A study by Oxfam and the European Union of numerous areas affected by floods in Pakistan showed that women, though starting from a roughly equal position as men, are more likely to suffer a lack of access to water and take longer to recover to their pre-disaster conditions[116]. Taking this into consideration, it would be reasonable to assume that if management or mitigation measures were not put in place, women would be denied equitable access to the water provided by the public rainwater harvesting facilities under Output 2.1. Access could potentially be denied through either direct means – i.e. where women are prevented from accessing public water distribution points (in the case of activities under Output 2.1) by male 'gatekeepers' or indirectly, by, for example, women being prevented from leaving the house, or being over burdened by other domestic and care-giving responsibilities. This evidence also suggests that special measures are required for disaster/water shortage periods – because during regular moments women can have equal access (/that shortages create discrimination against women). Further to this, there is also a possibility that access to the water provided by the rainwater harvesting units would be inequitably distributed, but not along sex or race lines, but rather because of hoarding behaviour, or arbitrary exclusion by some members of the community against, others. However, there is evidence that community-led management of water (and other) resources can be an effective means to reduce this risk and mitigate its impact[117]. Indeed, an academic study conducted in Nowshera found that community participation and empowerment, combined with funding and improved technical knowledge can reduce hoarding and inequitable distribution of resources such as water, and provide a means to amicably solve potential issues. The study also revealed a strong relationship between community based organization and development at the community level. However, in order for this relationship to be effective, the community-level organisations need to be truly representative an avoid serving vested interests[118]. For this reason (i.e. because effective representation is a necessary determinant of the success of community level organisations, management and mitigation measures are proposed in the next section. As such, community management has been built into the project, and is described in Part III, Section A. **Marginalised and Vulnerable Groups** As described above and in Annex 4, because of the baseline situation of women in Pakistan, they can be considered the main marginalised and

[116] European Union and Oxfam (2017) Consolidated Gender Analysis for Disaster Response in Pakistan, p.18
[117] Ali and Khan (2014), Benefits of Community Based Organizations for community development, International Journal of Innovation and Applied Studies ISSN 2028-9324 Vol. 5 No. 2 Feb. 2014, pp. 89-93
[118] Ibid, p.93

			vulnerable group. Issues related to women are discussed in the Gender Annex and below, under gender equality of women's empowerment. There are two other smaller groups of people who could also be marginalised in the target area; the elderly and the disabled/people with reduced mobility. There are no indigenous people in the area. While official population data doesn't show the presence of migrants, the community consultations did show that there are Afghan migrants in the target area. As highlighted above, there have been efforts by the Government of Pakistan to formalise the status of Afghan migrants. However, without carefully designed mitigation measures, there is potential for them to be excluded from services, which, in the framework of this project, means they may not be guaranteed access to the public RWH facilities to be installed under Output 2.1 As described immediately above, there is evidence that community-led management reduces discrimination and inequitable access, especially where the community management is representative of a cross-section of the community. For this reason, community management, as discussed in Part III, Section A, and be considered a risk mitigation measure. **Gender Equality and Women's Empowerment** There is extensive evidence in Pakistan, as presented in the gender baseline annex, that women suffer worse outcomes as a result of climate change and during disasters. The annex showed that women's access to water, markets and economic indicators all worsened more severely and recovered more slowly compared to men during and after disasters. Moreover, for reasons highlighted above (under access and equity), there is a possibility that women could be denied access to water facilities (ether actively or passively) if risk management or mitigation measures are not put in place. **Core Labour Rights** As highlighted above, there is a small risk to the rights of people working on the construction activities under the project. This risk must be see in the context of high rates of informality in unskilled and semi-skilled work in Pakistan. Despite signing all eight fundamental conventions of the ILO into law, enforcement can be patchy, and compliance limited. There has been evidence in Pakistan of people working without contracts, long working hours, a lack of sick leave, unfair or arbitrary dismissal, and discrimination against women[119]. 38.7% of people in Pakistan were deemed to be working 'excessive hours', according to the ILO's most recent decent labour survey, In Khyber Pakhtunkhwa, the Province Nowshera is located in, the rate of people working in the informal sector is 40.4 per cent, meaning it is more difficult to apply laws and protections to those people. Moreover, it is especially difficult to engage women in the workforce in Pakistan; the Labour Force Participation rate for women is 28.5% in Punjab and 14% in Khyber Pakhtunkhwa[120]. Moreover, 75% of women in employment are in 'vulnerable' employment, according to the ILO, compared to 55% of men[121] (which is still high) Most of those people are working in low-skilled seasonal or temporary jobs in construction, agriculture or garment manufacture. In the Construction sector, more than 40% of workers have received no formal education, which also suggests high rates of illiteracy and other vulnerabilities[122].

[119] See for example - https://www.hrw.org/report/2019/01/23/no-room-bargain/unfair-and-abusive-labor-practices-pakistan
[120] ILO (2015) Decent Work Country Programme, p.13
[121] Ibid, p.15
[122] Ministry of Statistics (2018) Employment Trends Pakistan, p.11

			Low pay is another problem for workers – over 55 per cent of people in employment are making less than US$2 per day[123]. There is also a gender pay gap in Pakistan, with women typically earning 64% of what men earn. Women also face other barriers in the labour force – they are much less likely to receive skills training and are more likely to end up in low-skilled, low-pay jobs. More troublingly, the ILO notes that child and bonded labour practice remain prevalent. UN-Habitat has determined, therefore, that there is potential for impact in terms of core labour rights. Without management and mitigation measures, the ESIA determines that it is highly likely that numerous exploitative labour practices could occur, despite Pakistan signing up to ILO core conventions. In particular, the evidence presented suggests that there would likely be discrimination against women – either through exclusion from job opportunities altogether or by enforcing inferior working conditions on them. Other risks and impacts include unsafe working conditions, exploitative contractual arrangements (or no contracts altogether) and low pay. These risks are sufficient to justify extensive management and mitigation measures. The knock-on (secondary) impacts of these risks have not been extensively identified, because such breaches of labour rights are sufficient, in and of themselves, to justify management and mitigation measures, presented below. However, extensive legal and contractual means exist to enforce executing entities and any subcontractors to comply with Pakistan's laws and international labour standards. Beyond this, there will be regular monitoring to ensure compliance. These measures are detailed further in the next section of this Annex. Involuntary Resettlement There have in the past been concerns about forced evictions arising from major infrastructure projects in Pakistan (the Karachi Metro project for example). During consultations with government officials, there were discussions of potential infrastructure construction in Rawalpindi (in the form of a new highway funded by bilateral cooperation from Japan). However, no details of this have been published, as of the most recent consultations. However, because such a project is at the discussion stage (and despite no official documentation currently being available) it was decided to reflect this in the management and mitigation measures. The consultations determined that there is no risk of involuntary resettlement from the construction. The public building RWH facilities have been identified in conjunction with local and national government and beneficiary communities and no concerns have been raised. The household level facilities under Output 1.1 are small-scale and designed to work with existing houses in the area, rather than displace them. The technical designs of these facilities are described in Part II, Section A and provided in Annex 1. Instead, the impacts will be around temporary inconvenience or disruption of access during the construction phase and during any maintenance that is required in the future. As such, there is no determination of serious, lasting impact, but rather temporary disruption or nuisance. Management and mitigation actions are highlighted later in the annex. Climate Change Explanation: Emissions could be generated without mitigation measures from a variety of sources. Imported materials, for example, have a higher carbon footprint because of the transportation costs involved. Waste generated from construction can lead to methane emissions if dumped openly rather than using sanitary landfill or, better, recycling. Some of the units to be installed will require small pumps. Without effective design or management, these could be modified to use diesel generator driven pumps, which can lead to emissions. However,

[123] ILO (2018) Measuring Decent Work in Pakistan, p.1

			electricity on grid is consistently available throughout the target area Meanwhile, the project may prove mal-adaptive if the tanks prove ineffective (see Part II, Section A for a discussion of why the intervention is most likely to be effective). Likewise, if poor construction and management practices are followed – such as if the tanks are allowed to overfill or if waste generated blocks the river or the nullahs, they will contribute to flooding either beneficiary communities or communities adjacent to them. Pollution Prevention and Resource Efficiency There are numerous pollution and resource use challenges facing Pakistan, including surface water availability, use and pollution (especially considering that Pakistan obtains most of its water through the Indus river system). As the World Bank has noted "In Pakistan, as elsewhere, environmental decay is both a cause and consequence of poverty. A fragile and damaged resource base is a major cause of poverty: agricultural yields are lower on degraded land; as forests are depleted access to vital livelihood resources declines. To subsist the poor are compelled to mine and overuse the limited resources available to them. This has created a vicious downward spiral of impoverishment and environmental degradation"[124]. This study found that the economic cost of damage to water supply, sanitation and hygiene 112bn Rupees per year. The conclusion of that research is that various forms of pollution contribute to various socio-economic problems which, in turn, are a constraint on Pakistan's economic growth. However, given the nature of the project that doesn't involve any resource extraction, digging, or installation of major complex infrastructure that depends on or has a complex interaction with natural resources, which is why the ESIA has concluded that pollution prevention and resource efficiency are low risk and medium impact; there is clear evidence that pollution an inefficient resource use in Pakistan is detrimental to the environment, society and economy, but given the design of the project, which uses few materials (including no natural ones) and doesn't involve construction at a scale larger than a single building. UN-Habitat, in conjunction with national and local government partners and the communities themselves have adjudged that, although there is potential risk arising in terms of pollution prevention and resource efficiency, the impacts of this would be highly localised and not severe. Nevertheless, there is a risk of these impacts and as such management measures are required (as described below). Public Health There are several, interrelated public health considerations that could cause people impacts, two of which relate to the construction or provision resulting from the project; injury or illness relating to construction or water borne diseases resulting from improper hygiene in the water provided by the RWH units, the other relates to the high baseline situation of disease, including water and vector-borne disease in the target area. There are inherent risks in construction projects, however small-scale. Available evidence suggests that Pakistan has a poor record of safety in the construction sector. This arises from a combination of factors; firstly, Pakistan has weak laws regarding workplace health and safety, as it covered in neither labour legislation or industrial safety regulations, meaning that construction and agriculture, for example, have been missed out altogether. On top of this, research has shown that poor standards can then be found in, or resulting from a combination of the following:

[124] http://siteresources.worldbank.org/SOUTHASIAEXT/Resources/Publications/448813-1188777211460/pakceach2.pdf

			poor safety awareness among firm's leadership, lack of technical guidance in performing construction operations, lack of technological innovation/ use to improve safety, lack of strictly defined operational procedures and poor safety awareness of project managers[125]. Moreover, systematic risk management is typically absent from construction firms and contractors when they undertake projects[126]. This means that there are occupational health and safety risks arising from construction work, because there is a lack of 'safety culture' around construction works. Considering the construction works in this project will be small scale, the likelihood of major accidents is very limited. However, in any construction site there is potential for injuries to workers and passers-by, and considering that community members will provide their labour, there is a clear need for commensurate risk mitigation measures, as described below. The baseline situation of hygiene in drinking water in Pakistan, including the target area, is very problematic. One study found that 58% of water samples tested in the country were contaminated with total coliforms and faecal coliforms, while contaminated drinking water accounts for anywhere up to 40% of all recorded diseases[127]. Considering that this analysis is before any detrimental impacts from climate change have been considered, there are clearly risks and severe impacts of taking no action (because of the baseline situation), however, this would also suggest that there would be public health impacts from water if no management actions were taken to ensure that the water provided is potable. In other words, if rainwater were to become contaminated with other sources of water (by sharing common pipes, for example) then there would be public health impacts that would mean little or no improvement over the baseline situation. As such, management and mitigation measures have been developed, below. The baseline situation of water contamination in the target areas is problematic. A recent survey took 469 water samples (from various sources) in Nowshera and found that 27% of them were 'contaminated' (i.e. failed to meet WHO guidelines)[128]. Tube wells were generally the safest source, though 15% were contaminated. Open wells had the highest rates of contamination – 41% were found to be unsafe. Contaminants variety, though bacteria were the main issue. Other problems include pH level, turbidity, hardness and nitrates. The main source of contamination of tap water was sewage filtering into improperly sealed storage tanks[129]. Moreover, this situation is likely to become more challenging in the future if no actions are taken considering that water availability has declined sharply in Nowshera – only half of the population gets water from the public supply networks – the rest source water through other means (though not rainwater harvesting) and these are more likely to be contaminated.

[125] Memon, A.H, *et al*, 2017, Factors Causing Health and Safety Hazards in Construction Projects in Pakistan, in Mehran University Research Journal of Engineering & Technology, Volume 36, No. 3, July, 2017 [p-ISSN: 0254-7821, pp558-559

[126] Shah, S.A.R, *et al,* (2019), An Innovative Framework for Risk Management in Construction Projects in Developing Countries: Evidence from Pakistan, Risks, 7:1, 24

[127] Nabeela, et al, (2014) Microbial contamination of drinking water in Pakistan—a review, Environmental Science and Pollution Research 21: 13929-13942

[128] PCRWR/UNICEF (2018) Water Quality Assessment Report; Nowshera District, p.ix

[129] ibid

Source	Total	Number of Samples Beyond Permissible Limits of NDWQS								Safe	Unsafe
		pH	TDS	Hardness	Cl	NO_3	Turbid.	Total Coliform	*E.coli*		
Bore	147	2	5	12	6	2	5	27	13	105	42
Storage Tank	5	0	0	0	0	0	0	1	0	4	1
Hand Pump	27	1	2	2	0	0	3	5	3	19	8
Open Well	27	0	0	0	0	0	1	11	4	16	11
Spring	3	0	0	0	0	0	0	1	1	2	1
Tap	182	3	8	6	11	1	0	43	23	128	54
Tube well	105	1	2	3	6		1	8	6	89	16
Total	**496**	**7**	**17**	**23**	**23**	**3**	**10**	**96**	**50**	**363**	**133**

Figure 13 - Contaminants per water source in Nowshera

The water quality situation in Rawalpindi is even more problematic. A similar analysis (though with a smaller sample size) found that 62% of samples were contaminated. However, this was broadly corroborated by another survey which showed 56% of water sources were contaminated[130]. There was a balance of bacteria and nitrate pollution. Microbial/bacterial contamination was found to mainly come from animal and human fecal waste that seeps into ground wate and unsealed/faulty pipes. The latter is especially problematic as it is likely a result of the use of nitrate fertilizer in surrounding agricultural areas, which permeates the ground water that ultimately contaminates city water sources[131]. One study puts the rate of nitrate infiltration in Rawalpindi at 94%[132]

Poor quality water has severe impacts on public health. One estimate suggests that the country experiences 100million cases of diarrheal disease per year, with 80,000 cases alone in Rawalpindi[133][134]. Other diseases such as cholera, typhoid, dysentery, hepatitis, giardiasis, and cryptosporidiosis and guinea worm infections represent about 80% (including diseases due to sanitation problem) of all diseases and are responsible for 33% of deaths. Much of this can be attributed to poor quality water[135]. In 2000 there was a gastroenteritis outbreak in Rawalpindi that was traced back to contaminated water, while outbreaks of hepatitis have also been traced back to water[136].

This impact assessment highlights that poor quality water has serious public health impacts. Much of this stems from bacteria and nitrates (the latter especially in Rawalpindi) permeating groundwater and thus contaminating supplies. However, there is also evidence that basic filtration

[130] Daud, M.K. *et al* (2017) Drinking Water Quality Status and Contamination in Pakistan, BioMed Research International, p.4
[131] PCRWR (2016) Water Quality Status of Major Cities in Pakistan, pp29-30

[132] IUCN/Oxfam (2015) Quality of filtered drinking water in Rawalpindi, p.8
[133] Daud, M.K. *et al* (2017) Drinking Water Quality Status and Contamination in Pakistan, BioMed Research International, p.2
[134] Note this is based on reported cases (i.e. people who sought medical treatment through a hospital or other medical facility) undoubtedly many more cases occurred where people didn't seek hospital treatment
[135] Daud, M.K. *et al* (2017) Drinking Water Quality Status and Contamination in Pakistan, BioMed Research International, p.2
[136] Ibid, p.14

			can reduce the risk and impact of contaminated water. In Rawalpindi for example, there is some evidence that well maintained but technologically simple filters have been effective at reducing instances of bacteria-related water-borne disease[137]. Rainwater harvest has potential to vastly improve the baseline situation in terms of water quality and the impacts it has on public health. It should be noted that rainwater has not been found in Pakistan to cause health risks until it has made contact with ground-based contaminants[138], though there is some evidence that it can pick up dust particles as it is close to the surface. The subsequent section details some measures put in place by the project to ensure that the water provided by the proposed RWH systems is safe, clean, and provides a no-regrets improvement on the baseline situation. Physical and Cultural Heritage As highlighted above, there are no UNESCO listed heritage sites in or around the target area. The nearest such sites[139] are Taxila, around35km from Rawalpindi and Rohtas Fort in Jhleum, about 115km from Rawalpindi. Meanwhile, there is another UNESCO World Heritage site at Sahr-i-Bahlol, around 35km from Nowshera. There is 1 mosque among the list of public buildings in Rawalpindi, and several more mosques within the target area (that are not among the public buildings used under Output 2.1). While the other buildings used in the project are not physical or cultural heritage *per se*, they are clearly important buildings for the communities (they are typically schools, community centres and local administration buildings – a full list of the buildings is provided in Annex 3) and if their use is temporarily disrupted or permanently changed, people in the target area (both beneficiaries and non-beneficiaries) would be affected. The impact of this would depend on the nature of the disruption, and considering the small-scale nature of the works, this would typically not be extensive, but nevertheless, there is potential for impact arising from inconvenience from noise, disruption of access, construction workers, and aesthetics, and as such risk management measures have been developed, below
	Outputs 1.2, 1.3, 2.2, 2.3, 3.1, 3.2	No risks identified	Because all activities under these outputs are 'soft', i.e. they involve planning, training and awareness raising, there are no risks triggered under the 15 areas of the Environmental and Social Policy and no impacts are foreseen. Inclusion of women in these activities is, however, provided for in the results framework (Part III, Section E), the Gender Annex and below.

1.4 Environmental and Social and Gender Policy Compliance Plan, Grievance Mechanism and Budget

[137] See for example IUCN/Oxfam (2015) Quality of filtered drinking water in Rawalpindi, pp.13-18
[138] Hasan, F, Ashraf, M and Farooque, M (2015) Guidelines and Training Module for the Development and Implementation of Rainwater Harvesting Systems, p.25
[139] http://whc.unesco.org/en/interactive-map/?search=&id_states=pk

This Environmental and Social and Gender Policy Compliance Plan describes the management process that will be put in place to ensure that the project is managed in a way that is consistent with the Environmental and Social and Gender Policies of the Adaptation Fund. It also summarizes the risk mitigation measures that have been built into the project to ensure compliance with AF policies and the laws and regulations applicable to it in Pakistan.

For an overview of project activities' potential risks, impact assessment against the 15 AF principles, including measures to avoid or mitigate risks and impacts see below table. Besides specific measures per project output, the project has put in place general management arrangements and measures to avoid or reduce potential environmental and social risks, which are described below.

Table 5.10 - Environmental and Social Risk Management and Mitigation Measures

Project activities	Environmental and Social Policy area		Impact assessment (evidence-based, substantiated)	Measures to avoid or mitigate risks / impacts
Component	Outputs			
Component 1: Enhance community- and household-level flood resilient water harvesting facilities (using innovative techniques) and to strengthen capacities to plan, construct, operate, maintain and	**Output 1.1.** 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater harvesting facilities constructed, using innovative techniques	Access and Equity	See here	Activities under Outputs 1.2 and 1.3 have been included in the project design partly to mitigate the risks and impacts arising under 1.1. 150 women (50% of the total trainees) will be trained to plan, construct, operate, maintain and replicate water harvesting facilities at community level. Water user groups will also be formed where community facilities are shared between households. These will be formed of an equal balance of men and women and will make all decisions by consensus rather than by domination of one group over another. The community plans are to be specifically designed to maximise equitable access to facilities, prevention of discrimination against women, children, the elderly or disabled, as well as to ensure fair and equitable distribution of water, sustainability and adaptation to future changes. The inclusion of an activity to develop community project 'champions' who will assist other community members who aren't fully literate has been designed to ensure that illiterate community members (who are disproportionately women) will still have access to the facilities, and still derive equal benefit from them. Activities under Outputs 1.2 and 1.3 will take place irrespective of the likelihood of the risk occurring and are designed to be preventative. These activities represent one of the main ways that anticipated risks were factored into the design of the project. As noted above, there is also some evidence of an Afghan migrant population in the target area. While UN-Habitat is satisfied that the government of Pakistan is seeking to ensure that all Afghan migrants have the right to remain in the country, there is some evidence from the community consultations of social and economic discrimination that these people face. To that end, UN-Habitat will ensure that identification papers are not checked in the provision of services under Output 1.1. Vulnerable households have been selected based on their location and current water access during water shortage periods, **not** on their citizenship status. While names of
		Marginalised and vulnerable groups	See here	

replicate these.				householders are being taken as part of the consent process, they will not be linked to identification in any way, and services will be provided without prejudice. Name and address details of beneficiaries will be kept confidential, between UN-Habitat and Shehersaaz, and not made public or shared with government agencies. Moreover, all training under the project will highlight the recent proclamations of the Prime Minister of Pakistan and promote inclusion for migrant populations. These measures are designed as preventative, to ensure that the risks don't materialise
		Gender equality and women's empowerment	See here	As mentioned above, community management, and the community planning activities, described above and in Part III, Sections A and E, ensure that women participate in all community scale activities and decision-making in the project, and do so equally, fairly and in a way that means that decisions are taken by consensus rather than by group. Similarly, management of the overall project sees representation from women (in the form of the Women's Departments of Punjab and KPK). As with access and entity, the project has been designed in this way to offset anticipated risks. The project designs have been prepared in such a way that they are easy to use. They provide outlets and taps in the home, meaning women don't have to travel, and accessing water requires minimal physical exertion. This is important in a conservative culture like Pakistan, where, in more traditional households, women are not necessarily free to move outside. In sum, the project provides ways to participate in all decisions, extensive training for community members to guarantee equal opportunities to benefit, design features that benefit women, measures to include illiterate people (who are disproportionately women), and adaptation benefits for women, who, evidence suggests, are disproportionately affected by disruptions to water access during floods and other disasters. As with access and entity, the project has been designed in this way to offset anticipated risks. This means that these measures will be implemented anyway, and to offset the potential risks, identified above and in Annex 4.
		Core labour rights	See here	All labourers employed to work during the construction of the RWH facilities will be formalized, working under legally binding contracts, in compliance with Pakistan's labour laws and, where these are insufficient, ILO standards and guidelines. All executing entities will be contractually obliged to uphold these standards, report them to UN-Habitat and be open to periodic monitoring. This will be done through the Agreements of Cooperation it will sign with all executing entity partners on the project (described further in Part III, Section A). Salaries paid to workers will be fair and will be well above the minimum wage. Women will be given the opportunity to work on the project and where they do, proper facilities such as sanitation will be provided for them. As described below under Public Health, all occupational health and safety training and equipment will be provided to all workers prior to their beginning work. While it may not be culturally permissible, and the project avoids setting targets as such, women will be given the opportunity to work on the construction related elements of the project, and if employed, contractors will be obliged to ensure that they have the same salaries as men at the same level, the same rights to

				breaks, benefits and safety equipment, separate facilities (i.e. bathroom, prayer facilities) and that men will be sensitised to a mixed-sex working environment. All of the above measures are critical considering the inadequate working conditions faced by many people in Pakistan. Measures to include women will be implemented if the project employs women for construction tasks. While this would be desirable, it may not be possible considering the cultural context of the target areas.
		Involuntary resettlement	See here	Communities will also be fully briefed on the exact nature of the construction works before they begin, including the expected duration, the disruption expected and the grievance mechanism. A consent form has been developed, and the English translation of this has been provided in Annex 6, as part of the community consultations. The proposal development team has gathered signatures from target areas and a**ll** community members will sign this before works commence. This form has been made available in Urdu and Pashtun so people can read it in their preferred language, and in the case of illiterate people, representatives of UN-Habitat and Shehersaaz will read it to people and answer any questions they may have. If people agree, they can thumb-print the consent form. The form (and the briefing) will make it clear that community members are free to reject it if they wish, and there can be no consequences of doing so for them. This process is designed to mitigate the risk that works could commence without the full and informed prior consent of the communities in question. As stated above, none of the works under this activity are of sufficient scale as to result in eviction or change the nature of people's homes or area surrounding them in such a way that it prevents them from living exactly as before. Proper construction site management techniques will be used, including barriers and signs, prior briefings and a transparent process to enable communities to discuss the ongoing construction will be used. While construction is ongoing, communities will still have full access to homes and public buildings through a safe passage (i.e. where there is no risk from falling debris, etc)
		Climate change	See here	Local materials will be used throughout the construction. All hardware required by the project (i.e. tanks, pipes and pumps) are available locally in both cities, meaning that emissions relating to transportation will not be necessary. To that end, all procurement documents will emphasise the need to use locally sourced materials and avoid imports. Aside from this, no additional emissions are expected from the activities.
		Pollution prevention and resource	See here	In Rawalpindi, waste management services are provided by Al Bayrak, a private sector contractor. In Nowshera, they are provided by a local government department, the Tehsil Municipal Administration UN-Habitat will work with the private sector provider of solid waste management services in Rawalpindi and TNA in Nowshera to ensure that all waste generated by the construction work is

		efficiency		disposed of properly and promptly. UN-Habitat has met Al Bayrak to discuss this matter. All construction workers will be trained on proper procedures to dispose of waste materials generated during the construction, to ensure that there is no risk of improper disposal. There will be a checklist for community-led constructions that the communities will be trained on. The checklist will establish proper procedures for disposal of waste materials. Waste disposal and avoiding pollution checklists will be inspected by UN-Habitat during every community visit and where there is a lack of compliance or a risk of lack of compliance. This is a mitigation measure, that will be implemented in recognition of the risk that construction workers do not know/are not trained in waste disposal, and that illegally disposing waste in the Nullahs is common practice. Agreements of Cooperation will stipulate that executing entities are responsible for proper disposal of waste materials and they will be subject to periodic monitoring. This is a legal risk management and responsibility issue that distributes responsibility effectively throughout the management hierarchy of the project.
		Public health	See here	Occupation health and safety training will be provided for all construction works, and necessary safety equipment, such as boots and hard hats will be provided. This will be the responsibility of the executing entity, working under Agreement of Cooperation from UN-Habitat. These provisions should be seen in conjunction with those under core labour rights, and are designed to keep the construction workers safe, first and foremost. This is a critical mitigation measure designed to keep workers and communities alike safe during the construction period. All construction sites will be demarcated, with fencing, barriers and cones, as appropriate to ensure that community members not involved in the construction are safe, and don't inadvertently walk into areas where construction is ongoing. This is in conjunction with measures described in involuntary resettlement, to ensure that communities have safe and continue access to their homes during the construction period. Community members will be trained on basic hygiene and sanitation matters in the activities conducted under Output 1.2 (activity 1.2.1). The water provided will be safe for drinking, but community members will be trained to boil water and store it in clean tanks anyway, to further reduce the possibility of disease outbreaks. See below, Output 2.1 for a full description of how WHO drinking water guidelines will be applied. In the household facilities, the guidelines will also be applied by Shehersaaz in during the implementation phase, and responsibility will transfer to community management after the project's implementation period completes. This is a risk management measure, understanding that water contamination risks are the highest, with the highest impact in the project.

		Physical and cultural heritage		There are no risks triggered to physical and cultural heritage under this output. Please see output 2.1
	Output 1.2. 15 union/neighbourhood council-level community plans developed (7 in Rawalpindi/ 8 in Nowshera), community members (especially women and youth) trained and practical guide developed to plan, construct, operate, maintain and replicate water harvesting at community level, and to reduce waste in drainage channels through awareness raising		According to the risk and impact assessment there are no risks evident for the activities under this output. However, the training and planning component will include awareness raising for the communities on all 15 areas of the Environmental and Social Policy of the Adaptation Fund and will place particular emphasis on the areas where risks have been identified, above. In terms of marginalised and vulnerable groups, community training and planning will highlight the potential for women to be excluded from basic services provision and stress the need for equality in decision making, and that this is possible even in a conservative culture like that prevalent in Pakistan. The plans will also highlight the presence of Afghan migrant populations (without naming individuals), while promoting tolerance and inclusion (including, for example, the commitment of the government of Pakistan to naturalise Afghan migrant populations), while flagging the potential for further migration in the future. It will stress a zero-discrimination approach, and the need to include migrant populations, where they exist, in decision-making. In terms of gender equality and women's empowerment, women's participation, including ensuring that women have equal roles in management and decision-making, will be promoted throughout. This aims to promote an equal role for women beyond the life of the project and in other areas where the project can be replicated. It will increase the stake women have in society and play a part in breaking down socio-cultural barriers faced by women in Pakistan, and particularly in conservative areas like the one targeted by this project.	

	campaigns			
	Output 1.3 Awareness campaigns in all target communities to reduce dumping of solid waste in drainage channels		Where paper is used to develop promotional materials, recycled or sustainably sourced paper will be used to reduce natural resource depletion. The campaigns will, where possible, make use of non-paper promotional materials, such as advertising on local or community radio, using the 'champions' from Output 1.2 or text messages to people in the communities. Despite use of these methods, posters remain an effective means of reaching people, however, but these will be used as sparingly as possible to reduce the impact of the activities.	
Component 2 Enhance city and district-level water harvesting facilities in public buildings and on water storages in public gardens, develop district / city level spatial strategies as tool to assess climate change related floods, droughts and water scarcity to plan for	**Output 2.1. (concrete)** 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	Access and Equity	See here	The standard operating procedures to be developed for the public rainwater harvesting facilities will specify the exact provisions for equitable access to the facilities and preventing discrimination to any of the marginalised or vulnerable groups discussed in this Annex. As with Output 1.1. water user groups will also be formed to better manage shared connections. These will be formed of an equal balance of men and women and will make all decisions by consensus rather than by domination of one group over another. The inclusion of an activity to develop community project 'champions' who will assist other community members who aren't fully literate has been designed to ensure that illiterate community members (who are disproportionately women) will still have access to the facilities, and still derive equal benefit from them. The trainings provided under Output 2.3 will also be designed to maximise equitable and fair access and to prevent potential for discrimination against marginalised groups As noted above, there is also some evidence of an Afghan migrant population in the target area. While UN-Habitat is satisfied that the government of Pakistan is seeking to ensure that all Afghan migrants have the right to remain in the country, there is some evidence from the community consultations of social and economic discrimination that these people face. As with activities under Output 1.1, UN-Habitat will work with WASA/TMN to ensure that identification papers are not checked, and that people get access to water based on their vulnerability to climate change and their (in)ability to access water, **not** on their citizenship status. Identities of people accessing the water will not be checked, and services will be provided without prejudice. Where names and addresses of beneficiaries are known, these will be kept confidential, and not made public or shared with any other agency. Moreover, all training under the project will highlight the recent proclamations of the Prime Minister of Pakistan and promote inclusion for migrant populations.
		Marginalised and vulnerable groups	See here	

and manage climate change risks and to strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens.		Gender equality and women's empowerment	See here	As mentioned above, the Women's Department of Punjab and KPK Provinces will participate in the project's overall management through their role on the Project Steering Committee The training and guideline development in activities under Output 2.3 will involve at least 20 female government officials out of a total of 50 trained – a very high rate of female participation in Pakistan. The women in particular will have a role to ensure that maintenance, management and future planning activities more generally will be inclusive of women's rights and seek to maximise opportunities for women. As with activities under Output 1.1, the project designs have been prepared in such a way that they are easy to use. Insofar as possible, the public RWH facilities will be convenient and accessible to women in the area, minimising the distance they have to travel to collect and carry water. As mentioned above, community management, and the community planning activities, described above and in Part III, Sections A and E, ensure that women participate in all community scale activities and decision-making in the project, and do so equally, fairly and in a way that means that decisions are taken by consensus rather than by group. In sum, the project provides ways to participate in all decisions, extensive training for community members to guarantee equal opportunities to benefit, design features that benefit women, measures to include illiterate people (who are disproportionately women), and adaptation benefits for women, who, evidence suggests, are disproportionately affected by disruptions to water access during floods and other disasters.
		Core labour rights	See here	All labourers employed to work during the construction of the RWH facilities will be formalized, working under legally binding contracts, in compliance with Pakistan's labour laws and, where these are insufficient, ILO standards and guidelines. All executing entities will be contractually obliged to uphold these standards, report them to UN-Habitat and be open to periodic monitoring. This will be done through the Agreements of Cooperation it will sign with all executing entity partners on the project (described further in Part III, Section A) Salaries paid to workers will be fair and will be well above the minimum wage. Women will be given the opportunity to work on the project and where they do, proper facilities such as sanitation will be provided for them. As described below under Public Health, all occupational health and safety training and equipment will be provided to all workers prior to their beginning work.
		Involuntary resettlement	See here	Managers of public buildings have been consulted, and their full and informed consent will be re-obtained before works commence. Communities in the area around public buildings will also be fully briefed on the exact nature of the construction works before they begin, including the expected duration, the disruption expected and the grievance mechanism. A consent form has been developed for the managers of public buildings and communities, and this is provided in Annex 6, Community Consultations. **All** public building managers and communities will sign this before works commence. This form has been made available in Urdu and Pashtun so people can read it in their preferred language, and in the case of illiterate community members, representatives

				of UN-Habitat and Shehersaaz will read it to people and answer any questions they may have. If people agree, they can thumb-print the consent form. The form (and the briefing) will make it clear that community members are free to reject it if they wish, and there can be no consequences of doing so for them. This process is designed to mitigate the risk that works could commence without the full and informed prior consent of the communities in question. As stated above, none of the works under this activity are of sufficient scale as to result in eviction or change the nature of people's homes or area surrounding them in such a way that it prevents them from living exactly as before. The public building RWH facilities are also sufficiently small-scale that they will not change the function of the buildings in such a way that people's use of them will be disrupted.
		Climate Change	See here	Local materials will be used throughout the construction. All hardware required by the project (i.e. tanks, pipes and pumps) are available locally in both cities, meaning that emissions relating to transportation will not be necessary. To that end, all procurement documents will emphasise the need to use locally sourced materials and avoid imports. Aside from this, no additional emissions are expected from the activities.
		Pollution prevention and resource efficiency	See here	UN-Habitat will work with the private sector provider of solid waste management services in each location; Al Bayrak in Rawalpindi and TMN in Nowshera to ensure that all waste generated by the construction work is disposed of properly and promptly. UN-Habitat has met Al Bayrak to discuss this matter. All construction workers will be trained on proper procedures to dispose of waste materials generated during the construction, to ensure that there is no risk of improper disposal. Agreements of Cooperation will stipulate that executing entities are responsible for proper disposal of waste materials and they will be subject to periodic monitoring
		Public health	See here	Occupation health and safety training will be provided for all construction works, and necessary safety equipment, such as boots and hard hats will be provided. This will be the responsibility of the executing entity, working under Agreement of Cooperation from UN-Habitat. These provisions should be seen in conjunction with those under core labour rights, and are designed to keep the construction workers safe, first and foremost. All construction sites will be demarcated, with fencing, barriers and cones, as appropriate to ensure that community members not involved in the construction are safe, and don't inadvertently walk into areas where construction is ongoing. As noted above, there are serious risks and impacts arising from contaminated water. However,

				provisions are built into the project's design to ensure that the harvested rainwater is clean and doesn't contribute to the spread of water-borne disease (and thus trigger impacts under the Public Health Environmental and Social Principle. Moreover, Annex 1 quotes directly the guidance of the Pakistan Council of Research on Water Resources' Guidelines and Training Module for the Development and Implementation of Rainwater Harvesting Systems. Such guidelines will be used as the basis for ensuring water quality. The guidelines have been tested throughout Pakistan. Training on basic hygiene will feature in the training under Output 2.3. This training will focus on ensuring that the water provided complies with the World Health Organisation Guidelines for Drinking Water Quality. This includes ensuring water is free from microbes, chemicals and radiation, and lays out proper roles and responsibilities for management of infrastructure. In brief, the steps, measures and practices to be put in place, in accordance with the WHO Guidelines[140]: • Residual Disinfection (Chemical disinfection not required when rainwater is the source) • Water will be inspected monthly by the executing entity to ensure that the appearance, taste and odour is acceptable • WASA/TMN will perform routine monitoring of systems and water quality. The water user groups will report problems or concerns • The Department of Health Services at the provincial level (or a designated alternative) will ensure that the water complies with drinking water standards • WASA will have a continued role for raising awareness and basic training of the water user groups • The plumbing and general construction will avoid cross contamination, harmful or hazardous materials, etc • The water user groups will be trained by the project The water provided will be safe for drinking, but community members will be trained to boil water and store it in clean anyway, to further reduce the possibility of disease outbreaks. This is because, while the framework for clean drinking water will be applied (As described here and in the WHO Guidelines), it can't be guaranteed that the water won't pick up contaminants on the way to the tank – e.g. from detritus on the building roofs which are hard to clean regularly and keep clean. However, basic filtration mechanisms will be built into each of the design types, as shown in Annex 1.

[140] See WHO (2017) Guidelines for Drinking Water Quality, 4th Edition, pp.1-18 on the general framework for providing potable water. This guides the measures described in this section

		Physical and cultural heritage	See here	As mentioned above, all construction sites will be demarcated effectively. Before works commence, as part of the full and informed prior consent process, the anticipated disruption to public buildings during construction will be discussed with building managers and building users/surrounding communities (i.e. parents in the case of schools). Construction workers will be trained to ensure there is minimal reduction to public building users, especially where the public buildings in question are schools, and as far as possible, construction will take place outside of school hours. In the case of mosques, no construction will take place on Fridays or at prayer times.
	Output 2.2. Two district / city-level spatial planning strategies developed considering climate change risks and impacts, especially floods and droughts, and including comprehensive water harvesting plans. These strategies are decision-making tools for cities to assess climate change related floods, droughts and water scarcity to	All areas of the ESP	According to the risk and impact assessment there are no risks evident for the activities under this output. However, the MHVRA and the spatial planning will explicitly consider the 15 areas of the Environmental and Social Policy, as well as the gender Policy of the Adaptation Fund in its data gathering and publication, and will seek to make specific recommendations for action that seek to mitigate and reduce risks under the 15 ESP principles in the future. The MHVRA and spatial planning exercises will in particular emphasise marginalised and vulnerable groups, gender equality and women's empowerment, human rights and involuntary resettlement as key safeguard areas. They will note the potential for risks in these areas and specify how to provide continuity of services and adaptation for people with regard to these safeguard areas in particular. This will be important for the wider promotion of inclusion and the prevention of discrimination against migrants and minority communities, promotion of equitable participation of women, and to ensure in particular that spatial planning does not lead to human rights violations or involuntary resettlement. These actions are important steps to creating and reinforcing a culture among government agencies that promotes inclusion of people who are not traditionally decision makers and more generally the promotion of inclusion and tolerance.	

	plan for and manage climate change-related risks and impact in and be-yond city boundaries, taking into consideratio n multiple sectors		
	Output 2.3. 50 government officials, including 20 women trained and guidelines developed to plan, construct, operate, maintain and replicate flood resilient water harvesting facilities and to enhance capacity in developing spatial plans	All areas of the ESP	According to the risk and impact assessment there are no risks evident for the activities under this output. However, the training and guideline development component will include awareness raising for municipal/district government officials on all 15 principles of the Environmental and Social, and the Gender Policy of the Adaptation Fund, and will place particular emphasis on Marginalised and Vulnerable Groups, and Gender Equality and Women's empowerment, where risks have been identified, above. In terms of marginalised and vulnerable groups, community training and planning will highlight the potential for women to be excluded from basic services provision and stress the need for equality in decision making, and that this is possible even in a conservative culture like that prevalent in Pakistan. The plans will also highlight the presence of Afghan migrant populations (without naming individuals), while promoting tolerance and inclusion (including, for example, the commitment of the government of Pakistan to naturalise Afghan migrant populations), while flagging the potential for further migration in the future. It will stress a zero-discrimination approach, and the need to include migrant populations, where they exist, in decision-making. In terms of gender equality and women's empowerment, women's participation, including ensuring that women have equal roles in management and decision-making, will be promoted throughout. This aims to promote an equal role for women beyond the life of the project and in other areas where the project can be replicated. It will increase the stake women have in society and play a part in breaking down socio-cultural barriers faced by women in Pakistan, and particularly in conservative areas like the one targeted by this project.
Component 3 Strengthen national-level capacity to	**Output 3.1** 100 government officials (50	All areas of the ESP	According to the risk and impact assessment there are no risks evident for the activities under this output. However, the training and guideline development work under Output 3.1 will, like in Component 2, include awareness raising for municipal/district government officials on all 15 principles of the Environmental and Social, and the Gender Policy of the Adaptation Fund, and will place particular emphasis on Marginalised and Vulnerable Groups, and Gender

guide / direct city-level development considering climate change and disaster risks and impacts, especially water scarcity caused by floods and droughts.	men and 50 women) trained to guide / direct urban development considering climate change and disaster risks and impacts, using especially spatial planning guidelines and tools.		Equality and Women's empowerment, where risks have been identified, above. In terms of marginalised and vulnerable groups, community training and planning will highlight the potential for women to be excluded from basic services provision and stress the need for equality in decision making, and that this is possible even in a conservative culture like that prevalent in Pakistan. The plans will also highlight the presence of Afghan migrant populations (without naming individuals), while promoting tolerance and inclusion (including, for example, the commitment of the government of Pakistan to naturalise Afghan migrant populations), while flagging the potential for further migration in the future. It will stress a zero-discrimination approach, and the need to include migrant populations, where they exist, in decision-making. In terms of gender equality and women's empowerment, women's participation, including ensuring that women have equal roles in management and decision-making, will be promoted throughout. This aims to promote an equal role for women beyond the life of the project and in other areas where the project can be replicated. It will increase the stake women have in society and play a part in breaking down socio-cultural barriers faced by women in Pakistan, and particularly in conservative areas like the one targeted by this project.
	Output 3.2 One National urban strategy focused on climate change / disaster risk reduction developed One set of National guidelines for spatial planning considering climate change / disaster risks developed	All areas of the ESP	According to the risk and impact assessment there are no risks evident for the activities under this output. However, both the urban strategy and the spatial planning guidelines will actively consider the 15 areas of the Environmental and Social Policy of the Adaptation Fund, and both documents will make specific recommendations on avoiding, mitigating and managing risks under the areas of the ESP. The spatial planning guidelines in particular emphasise marginalised and vulnerable groups, gender equality and women's empowerment, human rights and involuntary resettlement as key safeguard areas. They will note the potential for risks in these areas and specify how to provide continuity of services and adaptation for people with regard to these safeguard areas in particular. This will be important for the wider promotion of inclusion and the prevention of discrimination against migrants and minority communities, promotion of equitable participation of women, and to ensure in particular that spatial planning does not lead to human rights violations or involuntary resettlement. The urban strategy will also particularly note and address the risk areas that tend to be prevalent in urban areas; marginalised and vulnerable groups, gender equality and women's empowerment, human rights, involuntary resettlement and pollution prevention and resource efficiency. These actions are important steps to creating and reinforcing a culture among government agencies that promotes inclusion of people who are not traditionally decision makers and more generally the promotion of inclusion, openness and sustainability.

General management arrangements in place to avoid or reduce potential environmental and social risks

Both the management arrangements below and the general measures, beneath, are based on a combination of secondary research and information about typical risks and risk avoidance, management and mitigation in Pakistan, the community consultations conducted in the preparation of this proposal (And presented in Annex 6 and the lengthy experience of the proposal development team based in Pakistan, as well as international experience from UN-Habitat gained from managing projects for the Adaptation Fund and other donor agencies with stringent Environmental and Social Safeguarding policies.

i) Responsibilities: Direct responsibility for this implementation of the project in accordance with this plan lies with the Project Manager, who has oversight and compliance responsibility. Any changes or additional activities that arise during the project implementation that add value to or complement proposed sub-projects (within allowable limits set by the Adaptation Fund) will need to be cleared by the Project Manager and approved by the Project Steering Committee.
ii) Management and implementation of risk mitigation measures: Mitigation measures, including awareness raising and capacity building related to compliance with the Environmental and Social and Gender Policies are part of the project activities and are budgeted under these.
iii) A gender baseline has been developed to comply with the Gender Policy of the Adaptation Fund and this is presented separately, in Annex 4
iv) A budget has been prepared, and is presented below

General measures to be put in place to reduce environmental and social risks

The following general actions will be put in place to ensure compliance with the Environmental and Social Policy.

i) All memorandums of understand, agreements of cooperation with executing entities will include reference to and compliance with the 15 principles of the AF ESP and the Gender Policy.
ii) That UN-Habitat staff specialized in human rights issues will check for compliance with the ESP during the project's implementation. The gender focal point will also check compliance against principle 5 and the Gender Policy during implementation. The project will need to pass the UN-Habitat PAG with agency requirements for human rights, gender, youth and climate change.
iii) Continued coordination with focal points within the national and local governments, responsible for compliance with national and local standards will take place throughout the project.
iv) Capacity building and awareness raising: The project manager and his or her team will provide capacity building and awareness raising on compliance with the environmental and social and gender policies to executing entities and target communities so that they are aware of potential risks and are better placed to avoid or mitigate them, or recognized the potential for them and raise them through the appropriate channels, including the grievance mechanism (described below). This capacity building and awareness raising will be done in the inception phase of the project, prior to the commencement of construction.

Grievance Mechanism

i) The grievance mechanism will apply to all the project's target areas and will be open to beneficiaries and non-beneficiaries alike. It will allow them accessible, transparent, fair and effective means to communicate with the project management (and Project Steering Committee) if there are any concerns regarding the project design and implementation. All employees, executing entities and contractors and people in the target areas will be made aware of the grievance mechanism to lodge any complaint, criticism, concern or query regarding the project's implementation
ii) The mechanism considers the particular needs of different groups in the target communities. It combines anonymous mailboxes at community level, a trained local facilitator in each community who can listen to grievances while assuring anonymity and a telephone number that enables people to

call anonymously. These options allow people to make their grievance in whichever language they choose, offer options for illiterate people or people with low levels of literacy, and recognize that internet and smart phone penetration is still low in the target area. Moreover, any stakeholder involved with the project can use any workshop, training or any other event organized by the project, either in public (i.e. through open floor discussion) or in private (i.e. discretely with UN-Habitat or executing entity staff involved with the workshop) can raise a grievance verbally.

iii) Project staff, including those from the executing entities will also be trained to recognize grievances from community members and how to deal with grievance reports. The local facilitators in each community will also be trained on to recognize dissatisfaction and on how to report grievances. In addition, monitoring activities will also provide an opportunity for beneficiary communities to voice their opinions as they wish.

iv) All grievances will be anonymized and presented to the PSC. All grievances will be treated will equal and urgent importance, regardless of who raised them, or the mode by which they did so.

v) All stakeholders, including beneficiaries will be made aware of the grievance mechanism, their options for reporting, what constitutes a grievance and their right in anonymity at the start of the project, and/or whenever the project first makes contact with them (i.e. during the inception phase, whether in training, engineer's survey or whichever activities come first). Stakeholders will be reminded of the grievance mechanism periodically throughout the project.

vi) The address and email address of the Adaptation Fund will be made public (i.e. project website, Facebook and mailbox) for anyone to raise concerns regarding the project:

Adaptation Fund Board secretariat
Mail stop: MSN P-4-400
1818 H Street NW
Washington DC

1.5. Monitoring and Evaluation Arrangements, including budget

Risk monitoring arrangements

i) This monitoring programme, as outlined in Table 5.11 and 5.12 below will be used to measure the effectiveness of actions and collate results which will be reported to the Adaptation Fund in annual, mid-term and final (terminal) reports. Monitoring will be done to ensure that actions are taken in a timely manner and to determine if actions are appropriately mitigating the risk / impact or if they need to be modified in order to achieve the intended outcome.

ii) Annual reporting will include information about the status of implementation of this compliance plan. The reports shall also include, if necessary and required, a description of any corrective actions that are deemed necessary.

iii) Direct monitoring responsibilities will be under the Project Manager, who will also have oversight and compliance responsibility. If changes or additional activities are required, monitoring indicators will be modified or added as well, as required.

iv) Gender specific and/or disaggregated indicators and targets have been developed as shown in the results framework and summarized below.

v) The budget required is shown below

Table 5.11 - Environmental and Social Safeguard Monitoring Overview

Action	Indicator and method	Responsibility and frequency
Implementation of grievance mechanism	- Grievance mechanism information is shown in target areas (e.g. Union Council offices) - Grievance mechanism information is shown on UN-Habitat project website	Project manager Within half a year from inception
Consent process (communities)	- Consent sheets are signed by each community member **before** the project begins any physical works	Project manager, Shehersaaz Before inception of physical works
Permission (government)	- Full written permission from each government agency obtained before construction begins[141]	Project manager, UN-Habitat, WASA and TMN

Table 5.12 - Environmental and Social Safeguard Monitoring Overview

Project activities		Potential risk / impact	Measures to avoid or mitigate risks / impacts (In brief here, see Part III, Section F)	M & E arrangements	
Component	Activities			Indicator and method	Responsibility and frequency
Component 1: Community level activities: Enhance community- and household-level flood resilient water harvesting facilities (using innovative	Output 1.1. 5000 community / household level flood resilient (i.e. elevated to not be affected by flood water) rainwater	Access and equity	Gender equal water user groups	Gender equal water user groups formed and operational	Shehersaaz, M&E officer, Project manager. Annual
		Marginalised and vulnerable groups	Equitable access (men and women) Prevention of discrimination against migrants	Men and women have equal access and get equal benefit. Survey Equal access for migrant families. Survey, informal interviews and focus groups	Shehersaaz, M&E officer, Project manager. Annual

[141] To reiterate, WASA and TMN have indicated that there will be no problem, and have given their support to the project. Full, written permission will be obtained before the commencement of the project

techniques) and to strengthen capacities to plan, construct, operate, maintain and replicate these.	harvesting facilities constructed, using innovative techniques				
		Gender equality and women's empowerment	The role of women	Women are in decision making positions at the community level, regarding the RWH facilities, and are trained in operation and maintenance. Reports, lists	Shehersaaz, M&E officer, Project manager. Annual
		Core labour rights	Formalised labour	All workers have proper contracts, in compliance with the law, paid above minimum wage. Contracts, reporting, worker testimony gained through informal discussions	Shehersaaz, M&E officer, Project manager. Annual
		Involuntary resettlement	Continued access to houses	All people have unhindered access to their houses throughout, and there is no damage. Photographs, testimony gained through informal discussions	Shehersaaz, M&E officer, Project manager. Annual
		Climate change	Local materials	Local materials used throughout. Procurement documents	Shehersaaz, M&E officer, Project manager. Annual
		Pollution prevention and resource efficiency	Waste minimised and properly disposed of	All waste effectively disposed of. Procurement documents (ensuring responsibility), photographs	Shehersaaz, M&E officer, Project manager. Annual
		Public health	Safe construction Water hygiene	Safety training provided. Protective gear available. Photos, reports Water hygiene practices observed. Training materials	Shehersaaz, M&E officer, Project manager. Annual

Component 2 District / city level activities – Enhance city and district-level water harvesting facilities in public buildings and on water storages in public gardens, develop district / city level spatial strategies as tool to assess climate change related floods, droughts and water scarcity to plan for and manage climate change risks and to strengthen capacities to plan, construct, operate, maintain and replicate water harvesting facilities in public buildings and gardens.	**Output 2.1** 50 district / city-level water harvesting facilities in public buildings and on water storages in public gardens constructed	Access and equity	Standard operating procedures	SOPs prepared. Report	WASA/TMN, M&E officer, Project Manager. Annual
		Marginalised and vulnerable groups	Equitable access for women Equitable access for migrants	Men and women have equal access and get equal benefit. Survey Equal access for migrant families. Survey informal interviews and focus groups	WASA/TMN, M&E officer, Project Manager. Annual
		Gender equality and women's empowerment	Female participation in training and decision making	Women are in decision making positions at the district/municipal level, regarding the RWH facilities, and have been trained at local government level. Reports, lists	WASA/TMN, M&E officer, Project Manager. Annual
		Core labour rights	Formalised labour	All workers have proper contracts, in compliance with the law, paid above minimum wage. Contracts, reporting, worker testimony gained through informal discussions	WASA/TMN, M&E officer, Project Manager. Annual
		Involuntary resettlement	Access to public buildings maintained and no damage	All people have unhindered access to their houses (including neighbouring houses) and public buildings throughout, and there is no damage. Photographs, testimony gained through informal discussions	WASA/TMN, M&E officer, Project Manager. Annual
		Climate change	Local materials	Local materials used throughout. Procurement documents	WASA/TMN, M&E officer, Project Manager. Annual
		Pollution prevention and resource efficiency	Waste minimised and properly disposed of	All waste effectively disposed of. Procurement documents (ensuring responsibility), photographs	WASA/TMN, M&E officer, Project Manager. Annual

		Public health	Safe construction Water hygiene	Safety training provided. Protective gear available. Photos, reports Water hygiene practices observed. Training materials	WASA/TMN, M&E officer, Project Manager. Annual
		Physical and cultural heritage	Heritage buildings preserved	Buildings continue their function and there's no difference to their aesthetic	WASA/TMN, M&E officer, Project Manager. Annual

Budget

The overall project budget contains a $32,000 provision for ensuring compliance with the Environmental and Social and Gender Policies of the Adaptation Fund. This can be seen below:

Output	Brief Description	Cost	Year 1	Year 2	Year 3	Year 4	Annual Total
1.1	5,000 community/HH RWH Units installed	2,000,000	125,000	910,000	855,000	110,000	2,000,000
1.2	8 union council-level community plans developed inc training and guidelines	700,000	85,000	265,000	250,000	100,000	700,000
1.3	Awareness campaigns in all target communities	100,000	10,000	50,000	20,000	20,000	100,000
	Outcome Total	2,800,000	220,000	1,225,000	1,125,000	230,000	2,800,000
2.1	50 district-level RWH facilities	1,200,000	90,000	605,000	445,000	60,000	1,200,000
2.2	Two district / city-level spatial planning strategies developed	500,000	0	200,000	215,000	85,000	500,000
2.3	50 govt officials trained and guidelines developed	100,000	5,000	45,000	40,000	10,000	100,000
	Outcome Total	1,800,000	95,000	850,000	700,000	155,000	1,800,000
3.1	100 govt officials trained on spatial planning	100,000	0	0	70,000	30,000	100,000
3.2	National urban strategy developed	383,014	0	0	260,000	123,014	383,014
	Outcome Total	483,014	-	-	330,000	153,014	483,014
A	**Sub-total**	5,083,014	315,000	2,075,000	2,155,000	538,014	5,083,014
	Project Manager	288,000	48,000	96,000	96,000	48,000	288,000
	Office staff/technical support	75,000	12,500	25,000	25,000	12,500	75,000
	Office cost	75,000	12,500	25,000	25,000	12,500	75,000
	Travel Related to execution	38,576	6,000	13,500	13,000	6,076	38,576
	Final Evaluation	25,000				25,000	25,000
	ESP and GP Compliance	32,000	4,000	10,000	12,000	6,000	32,000
B	**Execution Cost (9.5% of C)**	533,576	83,000	169,500	171,000	110,076	533,576
C	**Total Project Cost**	5,616,590	398,000	2,244,500	2,326,000	648,090	5,616,590
	PSC 7%	393,161	27,860	157,115	162,820	45,366	393,161
	Evaluation support (HQ)	10,000	1,500	2,800	3,900	1,800	10,000
	Project Support Cost (ROAP)	7,500	2,000	2,000	2,000	1,500	7,500
	IE Staff salary	50,000	7,500	17,500	17,500	7,500	50,000
	Project supervision missions	16,749	3,000	5,000	5,000	3,749	16,749
D	**Overheads (8.5% of C)**	477,410	41,860	184,415	191,220	59,915	477,410
E	**Total Requested**	6,094,000	439,860	2,428,915	2,517,220	708,005	6,094,000

Of this budget, $16,000 across the four years will be a contribution to the salary of the project M&E officer (funded under office staff/technical support), a further $12,000 across the four years will cover the travel costs of the M&E officer on travel specifically relating to safeguards (and not otherwise covered by travel provisions elsewhere in the budget) and the remaining $4,000 will be used for training and raising awareness of compliance with the ESP and GP of the AF at the Project Manager's discretion.

Annex 6 – Community consultations

Below is a summarised version of the community consultations conducted so far in Rawalpindi and Nowshera with men and women. For reasons of space and clarity, these have been heavily summarised here. However, they can be provided in full upon request. Beneath are community level consent forms gathered so far. Because gaining consent for all 5,000 households is a complicated and time-consuming task, the consent gathering process is still ongoing. No construction would begin however until all consent has been gathered. The forms have been anonymised here to protect individual identities (considering that this could eventually become a public document) but can be provided to the Adaptation fund upon request. It should also be noted that there are no photographs are available from the female-only consultations. Pakistan has a conservative Muslim culture and taking pictures of women for a document such as this is not considered appropriate, and the women surveyed stated their preference not to be photographed.

In the below answers, the first three answers under each question are from Nowshera, the second two are from Rawalpindi. Male and female consultations are included.

Q: Use of water at household level; washing, drinking, clothing etc

A: They use water at household level at all level; washing drinking and clothing etc
A: They use water at household level at all level; washing drinking and clothing etc
A: They use water at household level at all level; washing drinking and clothing etc.

A: They use water at household level at all level; washing drinking and clothing etc
A: They use water at household level at all level; washing, drinking and clothing etc.

Q: Sources of water supply; water bore, well, water supply, etc

A: Water bore and water well are the main source of water.
A: Water bore and water well are the main source of water. Bore water is contaminated and its colour is look like iron. So we use this water only for washing purpose (bathroom, washing houses and kitchen utensils) otherwise, we use water supply water for drinking purpose (pipe water).
A: Water bore and water well are the main source of water. Public water pipes are lying in the streets but there is no water.

A: Water bore is the main source of water, although community also use water supply as well. But it comes after one day for only one hour. One year back (2018) they tested bore water from PCRWR but it is not fit for human health.
A: Water bore is the main source of water, although community also use water supply as well. But water supply only comes for ½ hour at 11:00 in the night.

Q: If the water supply is not adequate, what are the other sources of water?

A: There is no other source of water expect above one.
A: Then we only use bore water. There are some households have had water pumps for sucking water, they suck the water and other household could not get water.
A: There is no other source of water expect above one. But those houses who have not the above water resources, they take water from their neighbours.

A: Water supply water is also not fit for human health because pipes of water supply water and sewage are mixed at many points. They cause hepatitis and Tuberculosis and many other skin diseases. Water bowser/water tank is another source of water
A: The other sources of water are water tanker, water canes, that can be filled to other streets/mohallahs . This water fetch by children (boys and girls age of 9 to 12 years).

Q: How much do you pay for water per bowser/tanker on monthly basis

A: We do not use water bowser.
A: We don't use water bowser/tanker. Otherwise we pay 300 to 400PKR monthly bill to TMA.
A: We do not use water bowser.

A: If we use private water tanker, they took 3000/-PKR per trip; whereas Water and Sanitation Agency (WASA) took 800/- PKR per trip. But WASA tanker comes after one month.
A: Private water tanker took 3000/-PKR to 4000/- PKR per trip; whereas Water and Sanitation Agency (WASA) took 800/- PKR per trip. But WASA tanker comes after one month.

Q: How is the drinking water quality from existing water supply?
The quality of drinking water from existing water sources is quite poor.
A: The quality of drinking water from public sources is good and it is good for health.
A: The quality of drinking water from water bore is good. But the water quality of well is quite poor, its sandy and muddy. Its not drinkable.

A: The quality of drinking water is quite poor. Most of the sewerage pipe lines and water are mixed to each other.
A: The quality of drinking water is quite poor. Most of the sewerage pipe lines and water are mixed to each other. Mud is also mixed in water that is not drinkable.

Q: If the water is poor, do you experience any health impacts? If so, what? Diarrhoea? Skin conditions?
A: We experienced different health impacts due to poor quality of drinking water; like diarrhoea, skin problems, hepatitis and TB.
A: We experienced different health impacts due to poor quality of drinking water; like diarrhea, skin problems, hepatitis and TB of bore water.
A: We experienced different health impacts due to poor quality of drinking water; like diarrhea, skin problems, hepatitis and TB.

A: We experienced different health impacts due to poor quality of drinking water; like diarrhea, skin problems, hepatitis and TB.
A: We experienced different health impacts due to poor quality of drinking water; like diarrhea, skin problems, hepatitis, stomach problems and T.B

Q: If existing water supply is not good, do you use water filtration plants, it is existed in your community or you have to travel to take it.
A: There is no filtration plant is existed in our community.
A: There is no filtration plant is existed in our community.
A: There is no filtration plant is existed in our community.

A: There is no filtration plants are existed in our community.
A: There is no filtration plants are existed in our community.

Q: In which season/month do you feel shortage of water? And how you manage it?
A: November, December and January
A: November, December and January
A: November, December and January

A: From June to September, we faced extreme water shortage. During these months, mostly we use bore water with long queues and sometime, we have to travel from one union council to another union council.
A: From June to September, we faced extreme water shortage. During these months, mostly we use bore water with long queues and sometime, we have to travel from one union council to another union council for water.

Q: Number of water boreholes in the selected union councils.
A: No water bores in our UC

A: There were number of tube wells present in the union councils but people have broken it, now there is not a single tube well in functional condition.
A: No water bores in our UC

A: There are 02 main functional tube wells in union council number 04.
A: There are only 02 main functional tube wells in union council and water comes at 11:00 in the night.

SOLID WASTE MANAGEMENT

Q: What is the existing mechanism of solid waste collection and dumping?
A: No proper arrangement of collection and dumping of waste in our UC. Tehsil Municipal Corporation (TMC) collects solid waste but not on daily basis.
A: There is no proper arrangement of collection and dumping of waste in our UC. Tehsil Municipal Corporation (TMC) collects solid waste but not on daily basis. People dump their house hold waste in open spaces.
A: No proper arrangement of collection and dumping of waste in our UC. Tehsil Municipal Corporation (TMC) collects solid waste but not on daily basis. People dump their house hold waste in open spaces.

A: A private company named “Al Barak” working in the vicinity of Rawalpindi city. They have placed small containers at their selected places. People dump their waste in their waste bins and they collect it; whereas rest of the 90% waste dumped in the Nullah Lai.
Few of the households have booked sanitary workers on monthly basis.
A: A private company named “Al Barak” working in the whole vicinity of Rawalpindi city. They have placed small containers in their selected places. People dump their waste in their waste bins and they collect it; whereas rest of the 90% waste dumped in the Nullah Lai.

Q: Do you pay for the collection of solid waste or not on monthly basis
A: No
A: There are few households who have their own solid waste collectors on monthly basis and they pay 300 to 400 PKR.
A: No

A: Those households where sanitary workers visited on daily basis, they give 150 – 200/-PRK per month.
A: Mostly houses existed near to Nullah Lai so they dumped in to it.

Q: Is there any recycling facility?
A: No
A: No
A: No

A: There is no such recycling facility available in the union council.
A: There is no such recycling facility available in the union council.

Q: Would you be willing to carry/transport the waste further away if it meant being able to dispose of it sustainably?
A: Yes, we will be. E.g. IRRC plant

A: Yes, we will be.
A: Yes, we will be.

A: Yes, we will be.
A: Yes, we will be.

FLOOD IMPACT (2002-2010 OR **2010-2019)**

Q: Do you remember mega flood periods

A: Yes, in 2010, there was mega flood, when whole Nowshera city was under water.
A: Yes, in 2010, there was mega flood, when whole Nowshera city was under water.
A: Yes, in 2010, there was mega flood, when whole Nowshera city was under water.

A: In 2001, there was mega flood appeared in the Rawalpindi city, when the whole city was under water due to heavy rainfall.
A: In 2001, there was mega flood come in the Rawalpindi city, when the whole city was under water due to heavy rainfall.

Q: Maximum and minimum flood level in the community during this time

A: It was between 12 feet to 15 feet
A: It was between 18 feet to 24 feet (double story flood was occurred in 2010)
A: It was between 12 feet to 15 feet (double story flood was occurred in 2010)

A: In 2001, maximum flood was 20 feet and minimum level was 10 feet.
A: In 2001, maximum flood was 20 feet and minimum level was 10 feet.

Q: Is there regular flooding in this area every year?

A: Flooding is regular phenomena in our area. Those houses are near to river Kabul is more vulnerable. During heavy rain season, they have to face more damages. Three year back government has made retaining/protection wall against river Kabul, now most of the area is now safe.
A: Flooding is regular phenomena in our area. Those houses are near to river Kabul is more vulnerable. During heavy rain season, they have to face more damages. Three year back government had made retaining/protection wall against river Kabul, now most of the area is now safe.
A: Flooding is regular phenomena in our area. Those houses are near to river Kabul is more vulnerable. During heavy rain season, they have to face more damages. Three year back government has made retaining/protection wall against river Kabul, now most of the area is now safe.

A: Flooding is regular phenomena in our area; because most of the houses are located near to Nullah. During heavy rain, their houses become more vulnerable
A: Flooding is regular phenomena in our area; because most of the houses are located near to Nullah. During heavy rain, their houses become more vulnerable

Q: Type of loses during mega/regular flooding

A: During flooding period, their major loses are damaging of houses, furniture, electronic appliances and other useable items. Sometime, people also face human loses as well.
A: During flooding period, their major loses are damaging of houses, furniture, electronic appliances and other useable items. Sometime, people also face human loses as well.
A: During flooding period, their major loses are damaging of houses, furniture, electronic appliances and other useable items. Sometime, people also face human loses as well.

A: During flooding period, their major loses are damaging of houses, furniture, electronic appliances and other useable items. Sometime, people also face human loses as well.
A: During flooding period, their major loses are damaging of houses, furniture, electronic appliances and other useable items. Sometime, people also face human loses as well.

Q: No. of houses affected after mega/regular flooding

A: Those houses are existed near to River Kabul, all get effected due to flood. Houses become weaker, their foundation become fragile and get cracks in walls and floors.
A: Those houses that were existed near to River Kabul, all get effected due to flood. Houses become weaker, their foundation become fragile and get cracks in walls and floors.

A: Those houses existed near to Nullah Lai, all get effected due to flood. Houses become weaker, their foundation become fragile and get cracks in walls and floors.
A: Those houses existed near to Nullah Lai, all get effected due to flood. Houses become weaker, their foundation become fragile and get cracks in walls and floors.

Q: Drinking water quality after mega/regular flooding

A: During flooding and rainy season, quality of drinking water becomes worst. Pipe lines of drinking water and sewerage, both mix to each other.
A: During flooding and rainy season, quality of drinking water becomes worst. Pipe lines of drinking water and sewerage, both mix to each other. After flood, four to five months, drinking water was not drinkable.
A: Those houses that were existed near to River Kabul, all get effected due to flood. Houses become weaker, their foundation become fragile and get cracks in walls and floors.

A: During flooding and rainy season, quality of drinking water becomes worst. Pipe lines of drinking water and sewerage, both mix to each other.
A: During flooding and rainy season, quality of drinking water becomes worst. Pipe lines of drinking water and sewerage, both mix to each other.

Q: Problems during and after mega/regular flooding related to sanitation and solid waste

A: During and after flood, sanitation and solid waste situation become worst, bad or obnoxious smell everywhere. Spreading of diseases, poor water quality, bad smelly and muddy water. After passing weeks, TMA does not collect waste. People even could not walk in their streets.

A: During and after flood, sanitation and solid waste situation become worst, bad or obnoxious smell everywhere. Spreading of diseases, poor water quality, bad smelly and muddy water. After passing weeks, TMA did not collect waste. People even could not walk in their streets.

A: During flooding and rainy season, quality of drinking water becomes worst. Pipe lines of drinking water and sewerage, both mix to each other. After flood, four to five months, drinking water was not drinkable.

A: Mixing of drinking water pipe lines with sewerage lines, water borne diseases due to water and sanitation, overflow of nullah Lai.
A: Mixing of drinking water pipe lines with sewerage lines, water borne diseases due to water and sanitation, overflow of nullah Lai.

Q: Do you think Lai Nullah/river Kabul cause flooding or not and why?

A: Kabul River is the main cause of flooding in our area. Because throw solid waste and all city level sewerage lines are finally thrown into the river.
A: Kabul River is the main cause of flooding in our area. Because people throw their household solid waste in the river and all sewerage lines of the city are also thrown into the river.
A: During and after flood, sanitation and solid waste situation become worst, bad or obnoxious smell everywhere. Spreading of diseases, poor water quality, bad smelly and muddy water. After passing weeks, TMA did not collect waste. People even could not walk in their streets.

A: Lai Nullah is the main cause of flooding in our area. People thrown their waste in Nullah and it becomes chock. Nullah Lai is also the main source of sanitation pipe lines.
A: Lai Nullah is the main cause of flooding in our area. People thrown their waste in Nullah and it becomes chock. Nullah Lai is also the main source of sanitation pipe lines as well.

Q: How much time does flood takes to flush out

A: Within 2 to 3 hours flood water flush out from our area but it also depends upon the rain as well. In 2010, water took 3 to 4 days to flush out in our houses.
A: Within 2 to 3 hours flood water flush out from our area but it also depends upon the rain as well. In 2010, water took 3 to 4 days to flush out in our houses.
A: Within 2 to 3 hours flood water flush out from our area but it also depends upon the rain as well. In 2010, water took 3 to 4 days to flush out in our houses.

A: Within 2 to 3 hours flood water flush out from our area but it also depends upon the rain as well.
A: Within 2 to 3 hours flood water flush out from our area but it also depends upon the rain as well.

DRAINAGE SYSTEM

Q: What is the existing system of drainage in your community?

A: There is no drainage system is existed in our community.
A: There is no drainage system is existed in our community.
A: There is no drainage system is existed in our community.

A: There is no drainage system is existed in our community.
A: There is no drainage system is existed in our community.

Q: Do you think, drainage system need to be up gradate or not? If so how?

A: Proper cleanliness and increase the width of the pipes with proper slope so that all water smoothly flush out from the area.
A: Proper cleanliness and increase the width of the pipes with proper slope so that all water smoothly flush out from the area.
A: Proper cleanliness and increase the width of the pipes with proper slope so that all water smoothly flush out from the area.

A: Not sure
A: Unsure

Q: Is the waste water and drainage separate in your community?

A: No

A: No

A: No

A: No

A: No

Q: What is the reason for overflowing of sewerage pipes?

A: There is no separate sewerage pipe lines are existed in the area, all are open drains. (Note: pictures are attached in the female section)
A: There is no separate sewerage pipe lines are existed in the area, all are open drains. (Note: pictures are attached at the end of the section.)
A: There is no separate sewerage pipe lines are existed in the area, all are open drains. (Note: pictures are attached at the end of the section.)

A: Solid waste, it always full of garbage.

A: Solid waste, it always full of garbage.

LIVELIHOOD RESOURCES

Q: Identify income groups and predominant livelihood sources

A: Labourers, farmers, drivers, shopkeepers.
A: Labourers, farmers, drivers, shopkeepers.
A: Labourers, farmers, drivers, shopkeepers.

A: Mostly on daily wages, working in fruit or vegetable market and labour (related to construction) and very few are government employees
A: Mostly women work in factories, teachers in schools, nurses, stitching and embroidery (tailor) and work to another houses

- consultations with women focused on identifying and confirming potential risks and impacts of all proposed activities

A: During consultation with women, women raised following issues:
- How rainwater could be clean and able to drinkable
- What would be the alternative solution during dry season

Regarding project activities and women participation women were agreed to:
- Make a part of committees during, before and ending activities of the project
- They were even willing to be a part of the procurement committee
- They were also agree to form a mohallah(street level) women committee for monitoring and execution purpose
- Women will also form women groups for awareness raising programmes on water and flood related issues/problems

Q: Percentage of working women

A: Only 30 % women are belonging to working class. They do packaging of items at household level.

A: Only 30 % women are belonging to working class. They do packaging of items at household level. Mostly women are teachers, domestic workers, door to door selling cloths and milk and run their own beauty parlours and vocational centres.

A: Only 30 % women are belonging to working class. They do packaging of items at household level. Mostly women are teachers, domestic workers, run their own beauty parlours and vocational centres.

A: Only 30 % women are belonging to working class. They work in factories, involve in material packaging, teach in government and private schools, tailoring, (stitching and embroidery), peal the garlic at home.
A: Only 30 % women are belonging to working class.

Q: For women who don't work – what do they typically do? Domestic chores? Informal work (i.e. selling products, sewing, etc)

A: Women who do not work, they are house wives and busy in their domestic chores.
A: Women who do not work, they are house wives and busy in their domestic chores.
A: Women who do not work, they are house wives and busy in their domestic chores.

A: Women who do not work, they are house wives and busy in their domestic chores.
A: Women who do not work, they are house wives and busy in their domestic chores.

ENVIRONMENTAL AND SOCIAL SAFEGUARDS:

Q: Are there any more beneficiary groups/people affected that we should be aware of? Are there any people with especially high need of the project?

A: No

A: No

A: No

A: No

A: No

Q: Are there any disputes, discrimination or anything else that would stop people from benefitting?

A: No

A: No

A: No

A: No

A: No

Q: Can you think of any negative impacts this project might have on you? (this could be either during the construction phase or afterwards once the RWH has been installed)

A: No

A: No

A: No

A: No

A: No

Q: Are you aware of what human rights you have in relation to the project

A: Few of the human rights we already know that all human are equal, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion.

A: Few of the human rights we already know that all human are equal, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion.

A: Few of the human rights we already know that all human are equal, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion.

A: Few of the human rights we already know that all human are equal, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion. Equal access to public services and everyone has the right to education.

A: Women are aware their human rights related to this project

Q: Is it possible that women will benefit less than men, and/or that there will be discrimination against them?

A: Not at all

A: Not at all

A: Not at all

A: Not at all

A: Not at all. Women will take equal participation in all stages of the project activities.

Q: (To women) How can you be engaged in the management of the infrastructure so that you have an equal share in the decision making?

A:
A: Women are agreed to participate at all level of infrastructure work and decision making process of the project. These are following steps that they are agreed:

1. At consent level, if they need to more meetings with women in other streets (*mohallah*), they are willing to support us
2. During the procurement of the material, they will actively participate and will be a part of procurement committee members.
3. They will be part of monitoring committee as well at mohallah level
4. They will also conduct awareness sessions about health and hygiene and solid waste management.
5. Women are also agreeing to take participate in repair and maintenance training on RHU.

Note: (The above consent was taken by the mutual understanding of their men as well. Because specially in Nowshera (KP-Province) women are not allowed to participate in out-door activities without the permission of their household heads.) So before conducting meeting with women, firstly we conduct meeting with men, so if they formally get permission to their women for these activities, then we can move easily to women as well.

A: Women are agreed to participate at all level of infrastructure work and decision making process of the project. These are following steps that they are agree:

1. At consent level, if they need to more meetings with women in other streets (*mohallah*), they are willing to support us
2. During the procurement of the material, they will actively participate and will be a part of procurement committee members.
3. They will be part of monitoring committee as well at mohallah level
4. They will also conduct awareness sessions about health and hygiene and solid waste management.
5. Women are also agreeing to take participate in repair and maintenance training on RHU.

Note: (The above consent was taken by the mutual understanding of their men as well. Because specially in Nowshera (KP-Province) women are not allowed to participate in out-door activities without the permission of their household heads.) So before conducting meeting with women, firstly we conduct meeting with men, so if they formally get permission to their women for these activities, then we can move easily to women as well.
A: During each stage of the project, women will take equal participation with men. As discussed earlier, how women will participate in each sphere of the project. Women will also play active role in mobilization of the project, formation of the committees, execution and monitoring of the project

Q: Are there any indigenous people, migrants (documented or undocumented) or other minorities (e.g. Christians) in the area?

A: Afghan migrants community is existed in the community.
A: Afghan migrant's community are existed in the community.
A: Afghan migrant's community are existed in the community.

A: Afghan migrants community is existed in the community.
A: Afghan migrants community is existed in the community.

Q: What is the best way to seek your consent for the activity?

A: During meeting, you can take our consent for the activity.
A: Renowned personality (men)of the respective area is the key person of the area. He is the main source to take consent for the activity.
A: Renowned personality (men)of the respective area is the key person of the area. He is the main source to take consent for the activity.

A: During meeting, you can take our consent for the activity.
A: During meeting, you can take our consent for the activity. (Their consent is attached with this report).

Q: Would you give your consent to having a RWH tank on your roof, or elsewhere on your property?

A: We are willing to install RWH tank on our roof or elsewhere in our property.
A: We are willing to install RWH tank on our roof or elsewhere in our property.
A: We are willing to install RWH tank on our roof or elsewhere in our property.

A: We are willing to install RWH tank on our roof or elsewhere in our property.
A: We are willing to install RWH tank on our roof or elsewhere in our property.

Q: Do you have access to a mobile phones in the household?

A: Yes, we have

A: Yes, we have
A: Yes, we have

A: Yes, we have
A: Yes, we have

Q: What is your tenure situation (owner, renter, informal)?

A: All participants, who were sitting in the meeting, all were owner of their houses.

A: All participants, who were sitting in the meeting, all were owner of their houses.
A: All participants, who were sitting in the meeting, all were owner of their houses.

A: All participants, who were sitting in the meeting, all were owner of their houses.
A: All participants, who were sitting in the meeting, 50% have their own houses.

Q: Are you aware of people living informally in the area (i.e. slum/squatter settlements)?

A: There is no slum/squatter settlement in this union council.

A: There is no slum/squatter settlement in this union council.
A: There is no slum/squatter settlement in this union council.

A: There is no slum/squatter settlement in this union council.
A: There is no slum/squatter settlement in this union council.

Q: Have evictions been a problem in this area in the past?

A: No

A: No

A: No

A: No

A: No

Q: Would HH level RWH tanks have any negative affect on your house/land that you can think of?

A: No

A: No

A: No

A: No

A: No

Q: Are you happy for the project to install a tank on your land/roof or and underground tank outside your home?

A: Yes, we all are happy

A: Yes, we all are happy

A: Yes, we all are happy

A: Yes, we all are happy

A: Yes, we all are happy

Q: Are there any natural habitats that would be affected by the project?

A: Not any natural habitats are present in our union council.

A: Not any natural habitats are present in our union council.

A: Not any natural habitats are present in our union council.

A: Not any natural habitats are present in our union council
A: Not any natural habitats are present in our union council

Q: Are you aware on any important biodiversity in the area?

A: No

A: No

A: No

A: No

A: No

Q: Are you aware of good sanitation and hygiene practices regarding water?

A: Yes, we are already aware about good sanitation and hygiene practices

A: Yes, we are already aware about good sanitation and hygiene practices

A: Yes, we are already aware about good sanitation and hygiene practices

A: Yes, we are already aware about good sanitation and hygiene practices

A: Yes, we are already aware about good sanitation and hygiene practices

Q: Are there any cultural or heritage areas nearby that could be affected (i.e. mosque, church, historical building, or any other place that is important for the community)?

A: No

A: No

A: No

A: No

A: No

Public Buildings

- Identify public buildings or other areas for installation of community RWH units and take their consent
    1. Govt. School, DHQ hospital, WAPDA House, Veterinary Hospital and office of TMA*

*The condition of TMA building is quite vulnerable

- Identify public buildings or other areas for installation of community RWH units and take their consent
  (Note: list of public buildings is attached in separate sheet)
- Identify public buildings or other areas for installation of community RWH units and take their consent
  2. Govt. School, DHQ hospital, WAPDA House, Veterinary Hospital and office of TMA*
     *The condition of TMA building is quite vulnerable
- Identify public buildings or other areas for installation of community RWH units and take their consent
- Identify public buildings or other areas for installation of community RWH units and take their consent

Rainwater Harvesting

Q: Women role in water management

A: Women are often responsible for fetching water and using it for domestic chores such as cleaning, cooking and washing. Women are already the primary water decision-makers at the household level.
A: Women are often responsible for collecting water and use it for domestic purposes such as cleaning, cooking and washing. Women are already the primary water decision-makers at the household level. If there are 2 source of water in a house, they use it very wisely; suppose bore water is good in quality, they filled with separate water tanks and use for drinking purpose. And second source of water is well, as earlier mentioned its not in good quality, they filled with separate tank and use for cleaning, washing and bathrooms.
A: Women are often responsible for collecting water and use it for domestic purposes such as cleaning, cooking and washing. Women are already the primary water decision-makers at the household level. If there are 2 source of water in a house, they use it very wisely; suppose bore water is good in quality, they filled with separate water tanks and use for drinking purpose. And second source of water is well, as earlier mentioned its not in good quality, they filled with separate tank and use for cleaning, washing and bathrooms.

A: Women are often responsible for fetching water and using it for domestic chores such as cleaning, cooking and washing. Women are already the primary water decision-makers at the household level.
A: Women are often responsible for fetching water and using it for domestic chores such as cleaning, cooking and washing. Women are already the primary water decision-makers at the household level.

Q: Owner occupied houses in the community

A: Almost 90% of the community have their own houses in union council.
A: Almost 90% of the community have their own houses in union council.
A: Almost 90% of the community have their own houses in union council.

A: Almost 70% of the community have their own houses in union council # 04.
A: Almost 70% of the community have their own houses in union council.

Q: Average family members/size

A: 7 to 8 members

A: 7 to 8 members

A: 7 to 8 members

A: 7 to 8 members

A: 7 to 8 members

Q: Identification of specific concerns and needs of the beneficiaries and specific groups in reference to RWH

A: The specific concerns of the beneficiaries related to RWH were, how it will work specially during dry season, how rain water can be used to drinking purposes.
A: The specific concerns of the beneficiaries related to RWH were, how it will work specially during dry season, how rain water can be used to drinking purposes.
A: The specific concerns of the beneficiaries related to RWH were, how it will work specially during dry season, how rain water can be used to drinking purposes.

A: The specific concerns of the beneficiaries related to RWH were, how it will work specially during dry season, how rain water can be used to drinking purposes.
A: The specific concerns of the beneficiaries related to RWH were, how it will work specially during dry season, how rain water can be used to drinking purposes.

Q: Willingness to install and contribute in Rainwater harvesting units

A: Community is willing to install RWH; their consent letter form is attached herewith.
A: Community is willing to install RWH; their consent letter form is attached herewith.
A: Community is willing to install RWH; their consent letter form is attached herewith.

A: Community is willing to install RWH; their consent letter form is attached herewith.
A: Community is willing to install RWH; their consent letter form is attached herewith.

Role of NGOs, CBOs and Union Councils

Q: Ask community members role of CBOs/NGOs working in water and sanitation and solid waste and disaster risk management

A: Nothing.

A: Nothing.

A: Nothing.

A: Nothing.

A: Nothing.

Q: Ask community members the role of Union Councils in flood and water scarcity management

A: Very passive role
A: Very passive role
A: Very passive role

A: Very passive role
A: Chairman of the union council does not take any interest at the union council level activities.

Projects

Q: Ask community members, do they have some knowledge is there any project is currently working on water and sanitation or solid waste and disaster risk management system, if so write down their name/s.

A: No

A: No

A: No

A: Currently, there is no specific project is working on the above themes, although in past five (5) years, there were few INGOs /UN funded projects worked on solid waste management i.e. Concern worldwide, World Vision, National Urban Poverty Project (UNDP – funded project), Solid Waste Environmental Enhancement Management Project (SWEEP, funded by UNDP)

A: Currently, there is no specific project is working on the above themes, although in past five (5) years, there were few INGOs /UN funded projects worked on solid waste management i.e. Concern worldwide, World Vision, National Urban Poverty Project (UNDP – funded project), Solid Waste Environmental Enhancement Management Project (SWEEP, funded by UNDP)

Q: Prepare a list of CBOs/NGOs working on water and sanitation or solid waste and disaster risk management system in our selected project areas.

A: 1. Water and Health and Hygiene: Nil

A: 2. Solid Waste Management: Nil

A: 3. Disaster Risk Reduction: Nil

A: 1. Water and Health and Hygiene: Nil
A: 2. Solid Waste Management: Nil
A: 3. Disaster Risk Reduction: Nil
A: 1. Water and Health and Hygiene: Nil
A: 2. Solid Waste Management: Nil
A: 3. Disaster Risk Reduction: Nil

A: 1. Water and Health and Hygiene: Nil
A: 2. Solid Waste Management: Al- Barak (A private company working in Rawalpindi city. This company only collect the solid waste from the selected points where they have installed small containers and dump into the designated dumping site.)
A: 3. Disaster Risk Reduction: Nil
A: 1. Water and Health and Hygiene: Nil
A: 2. Solid Waste Management: Al- Barak (A private company working in Rawalpindi city. This company only collect the solid waste from the selected points where they have installed small containers and dump into the designated dumping site.)
A: 3. Disaster Risk Reduction: Nil

Q: Prepare a list of women groups specifically working on water and sanitation or solid waste and disaster risk management system in selected project areas. (If any)

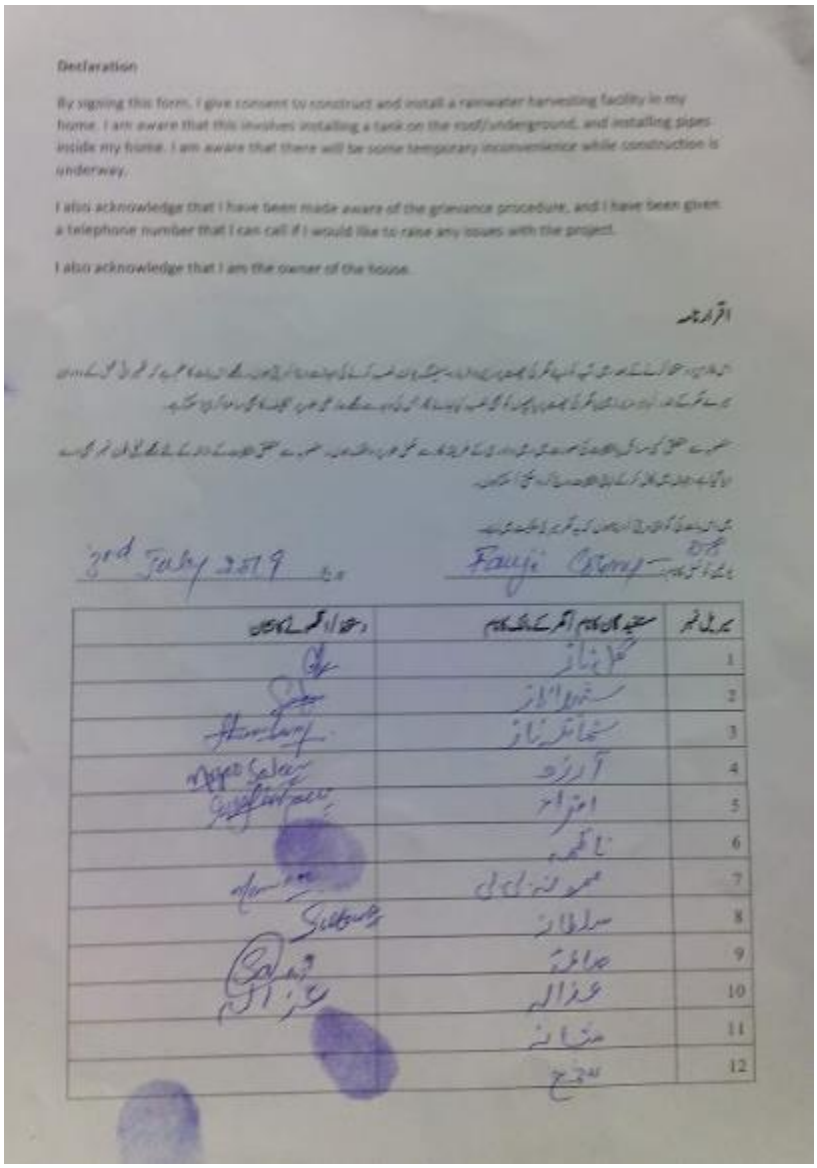
A: None

A: None
A: None

A: None

A: None

Consent Forms
See next page



Declaration

By signing this form, I give consent to construct and install a rainwater harvesting facility in my home. I am aware that this involves installing a tank on the roof/underground, and installing pipes inside my home. I am aware that there will be some temporary inconvenience while construction is underway.

I also acknowledge that I have been made aware of the grievance procedure, and I have been given a telephone number that I can call if I would like to raise any issues with the project.

I also acknowledge that I am the owner of the house.

اقرار نامہ

3rd July 2019

Fauji Colony

سیریل نمبر	مستفید ہونے والے گھر کے افراد کے نام	دستخط/انگوٹھے کا نشان
1	گل ناز	
2	سنبل ناز	
3	سمائرہ ناز	
4	آرزو	
5	امراء	
6	نائلہ	
7	معوذہ	
8	سلطانہ	
9	عائشہ	
10	غزالہ	
11	منانہ	
12	[illegible]	

Declaration

By signing this form, I give consent to construct and install a rainwater harvesting facility in my home. I am aware that this involves installing a tank on the roof/underground, and installing pipes inside my home. I am aware that there will be some temporary inconvenience while construction is underway.

I also acknowledge that I have been made aware of the grievance procedure, and I have been given a telephone number that I can call if I would like to raise any issues with the project.

I also acknowledge that I am the owner of the house.

اقرار نامہ

[illegible]

[illegible]

[illegible]

4,5,06 [illegible] 2019 0328

دستخط / انگوٹھے کا نشان	مستفید گان کا نام / گھر کے مالک کا نام	سیریل نمبر
[illegible]	بشیر احمد	1
[illegible]	[illegible]	2
[illegible]	[illegible]	3
[illegible]	[illegible]	4
[illegible]	[illegible]	5
[illegible]	[illegible]	6
[illegible]	[illegible]	7
[illegible]	محمد الیاس	8
		9

[illegible]	[illegible]	13
[illegible]	زاہدہ	14
[illegible]	سروری	15
[illegible]	[illegible]	16
[illegible]	[illegible]	17
[illegible]	[illegible]	18
[illegible]	[illegible]	19
[illegible]	نسرین	20
[illegible]	[illegible]	21
		22
		23
		24
		25

Annex 7 – Additional Details Pertaining to the Consultations.

This annex is prepared to augment the information provided in Table 15 in the main body of the proposal. It provides various documents that evidence or otherwise pertain to the consultations that took place during the international missions (i.e. by UN-Habitat's international experts) during the concept note and full proposal stages. It does not include the community consultations that took place in formulating the full proposal – these are outlined above.

RAPID COMMUNITY SURVEY
BUILDING URBAN CLIMATE RESILIENCE IN PAKISTAN
UN-HABITAT - ADAPTATION FUND
Focus: women groups
Method: focus group discussion

1. Basic assessment information / contact person details

Name group representative	Iqbal Bibi
Contact details and photo	+92 331 509 1971 For photos please see the attached folder
Date assessment conducted	01 Aug 2018
Attendance sheet filled	See below
Photos of consultation made	See Part II.H

2. Climate change – trends analysis

Expected outcome: Agreement on at least one or two climatic hazards, which have most impacted the community

Climate Change hazards	a) In the last 10 years, has the community been affected by:	Has this issue been getting:
Flooding (directly from Lai Nallah)	i) Yes, a lot, ii) yes, a little, iii) no, iv) not relevant. v) can't say.	i) a lot worse, ii) little worse, iii) same, iv) better, v) not relevant, vi) can't say
Diseases (e.g. dengue, malaria, diarrhea)	i) Yes, a lot, ii) yes, a little, iii) no, iv) not relevant. v) can't say.	i) a lot worse, ii) little worse, iii) same, iv) better, v) not relevant, vi) can't say
Droughts (e.g. lack of clean water for household use)	i) Yes, a lot, ii) yes, a little, iii) no, iv) not relevant. v) can't say.	i) a lot worse, ii) little worse, iii) same, iv) better, v) not relevant, vi) can't say.
Extreme heat (e.g. resulting in electrical problems, health impacts, crop/fisheries damage)	i) Yes, a lot, ii) yes, a little, iii) no, iv) not relevant. v) can't say.	i) a lot worse, ii) little worse, iii) same, iv) better, v) not relevant, vi) can't say

Top 3 most problematic climatic hazards

Hazard	Occurrence between 2008 and 2018 (years)	Possible comment
1. Flooding	Almost annually this community is affected by floods in Lai Nallah	Owing to its being located next to Lai Nallah, the community gets affected by flooding in Lai Nallah almost in every monsoon season. The risk of getting affected also remains intact during winter's rainy season.
2. Diseases	Persistent risk	The community suffers from poor sanitary conditions. The existing sewerage system consists of open street sewers that directly dispose sewage in Lai Nallah. Especially during flooding season, the street sewers get choked causing overflowing of household sewerage system. The available drinking water is not fit for drinking and hence contributes to water borne diseases.

		The overall poor sanitary conditions compounded by absence of an effective solid waste management system in the community also contribute to the disease burden.
3. Scarcity of clean water for drinking and household use	Persistent phenomenon	The available water for drinking and other household uses does not meet the minimum standards. Often the water being supplied by municipal water supply system stinks. The groundwater extracted through boreholes also is not of good quality.

3. Climate change – questionnaire

These questions help to analyze current and future climate risks, barriers to adaptation and factors/resources facilitating the coping strategies used by groups and way of improving their resilience.

What problems does your specific group (women, elderly / disabled, youth, (ex)refugees, etc.) face because of the one or two most problematic climatic hazards (see result trend analysis)

Most problematic climatic hazard	Problems / effects (e.g. agriculture destruction, lack of water or food for cattle, drinking water scarcity, disease, death, damages of houses or other assets, need to move somewhere else, need to invest in protection, need to find other income)	How does hazard impactyour group specifically?
1. Flooding	Dhok Najju is located immediately next to Lai Nalla. An unplanned settlement, it has grown haphazardly over the years. Today it is a densely populated area. The consecutive governments and municipal authorities have not paid any heed for the planning and development of the area like many other older parts of Rawalpindi city. Thanks to these factors, flooding is a recurrent phenomenon that hits the locality almost annually. The floodwaters enter houses damaging the household items and hence causing financial losses to households besides affecting the housing structures. In many instances, the floodwaters also damage the household food stocks. The community does not have dedicated storm sewers and drainage of storm and flood water is totally dependent upon the undulating terrain/topography of the area. The flood and rainwater undermines the sewerage system of the area, causing the sewers to overflow to an extent that even the human excreta flows into houses--a disgusting issue that troubles the household most.	Women being responsible for housekeeping have to put a lot of effort and time in cleaning their houses whenever these are affected by floodwaters. The monsoon season brings fear and especially women have to stay extra conscious spending sleepless nights. In absence of any effective early warning system in place and lack of preparedness on part of households they have been caught unaware by the floods during late in the nights or early in the morning when households were asleep.
2. Diseases/ Epidemics	Epidemics are not uncommon and disease burden is high in Dhok Najju like many other localities having similar features. Diarrhea, dengue, malaria, hepatitis, dermatological ailments are common diseases in the area. The local residents consider the poor sanitary conditions and contaminated water as being responsible for this situation. The concerned municipal institutions do not take any preventive measures to address this situation. Anti malaria and dengue campaigns involving fumigation of the area are occasionally launched. However so far these measures have not borne any fruits so far.	The prevalence of water borne disease and epidemics especially affects younger children. Taking care of them primarily comes to women increasing their burden and affecting their productive time. Disability among children is especially high. One in every 15 to 20 households have one of more children suffering from some physical or mental disability.

3. Scarcity of clean water for drinking and other household uses	Dhok Najju suffers from an extreme shortage of clean water. The water supplied through municipal piped water supply stinks and is highly contaminated and hence is not used for drinking. Boreholes are not common. The piped water is supplied for two hours daily.	Women have to travel almost two kilometers to bring drinking water from two nearby water sources--private boreholes. Those women who can afford hire an auto rickshaw to haul the drinking water. Women who do not afford had to walk to perform this duty. This consistent strain involves lot of hassle and stress compromising women's leisure and productive time and energies.

The magnitude of barriers to adaptation

What stops specifically your group (women, elderly / disabled, youth, (ex-)refugees, etc.) from coping with current impacts of the most problematic climatic hazards (see result trend analysis)? These can be gender roles, illegal status affecting tenure, illegal status affecting employment options, lack of knowledge / education, lack of skills, lack of money, etc.

Most problematic climatic hazard	1) What is currently limiting your group from coping with or adapting to the impacts? (What makes it difficult for you to deal with them or makes it difficult to make changes to deal with them). Please discuss Differentiated climate change impacts on women and their differentiated capacities do adopt to these, gender division of labor and gender-based power structures 2) in what ways has your group already adapted to deal with these issues?	Ranking most important factors
1. Flooding	- The location of Dhok Najju that makes it an immediate neighbor of Lai Nallah poses a persistent risk of flooding. - Over the years, the community has encroached the banks of Lai Nallah and hundreds of households are compelled to live in the flood zone. - The municipal authorities have not made any efforts so far to enforce building codes and land use control. - A proper sewerage system does not exist. Household sewage flows in open street sewers before its final disposal in Lai Nallah. - No effective early warning system exists. - Community based flood management system is not heard about. The community and households are not prepared that lead to their consistent vulnerability to flood risks. - Effective community based governance and decision making systems do not exist. Women are not involved in any community based decision making. - Poverty is rampant. Men in many households resort to daily wage labor while women contribute in household incomes by working as domestic servants or undertaking works like sewing/tailoring in their homes. Adaptation: - During flood seasons, households normally remove easily removable household items from ground floors. However given smaller sizes of houses (many are one room houses) they have very little space to take this measures. - Flood warnings are aired from loudspeakers of mosques. However these do not prove very effective.	
2. Diseases/ Epidemics	- Most of the households are poor and disease burden is high. No social safety nets or subsidized healthcare facilities are available to households. - In absence of interest from the local authorities, the community find it helpless to address the causes that are contributing to poor sanitary conditions and disease burden of the community. Adaptation So far no visible adaptation measures are in place against this situation.	
	- The community finds itself helpless against the persistent unavailability of	

3. Scarcity of clean water for drinking and other household uses	clean water. - Most of the households are poor. The meager earnings do not afford them the opportunity to invest in water filtration or other effective measures for having clean water for household uses. - Generally households do not have knowledge of household level low cost but effective water purification technologies. Adaptation: Since water available from existing municipal supplies is not drinkable, especially women travel to nearby two water sources to fetch water for drinking.	

The priorities to be addressed in strengthening the adaptive capacity of the group.

What activities / interventions should take place to adapt to climate change hazard impacts (e.g. address floods or droughts / water scarcity? What is most important for the group?

Most problematic climatic hazard	Activity / intervention	Ranking most important activity / intervention
1. Flooding	- Lai Nallah should be covered - If Lai Nallah is not covered, its walls should be lined with retaining walls - Government should install a proper sewerage system	
2. Diseases/ Epidemics	- The community considers the proximity of Lai Nallah, poor sanitary conditions, absence of sewerage system, unavailability of clean drinking water as being the major cause of epidemics and disease burden. Hence government should take measure to address this situation, women believe.	
3. Scarcity of clean water for drinking and other household uses	- Install community level water filtration plants - Ensure the supply of clean water through municipal supplies.	

If these activities, interventions (e.g. dam to reduce floods, water harvesting facilities at community or household level) are provided, what would be your main concern and needs (e.g. related to employment, health, water access, food security, tenure security, resettlement, etc.?)

Activity / intervention	Concerns and needs	Rank
Flood protection measures involving clearance of encroachments from Lai Nallah's banks	Concerns : Displacement and resettlement Needs: Many households are tenants. In many instances a dwelling unit is occupied by as high as seven to eight families, each occupying one room while sharing the toilet facility. On average a household pays PKR 5000-6000 as monthly rent. This amount takes away major portion of their meager incomes. These households find them unable to financially contribute in any of the project activities. They also fear that flood protection measures involving removal of encroachments from Lai Nallah's banks may lead to their displacement. They further emphasize that they find it extremely difficult to get housing facilities within the city with low house rents that they can afford. The displacement, they fear, will only increase their difficulties.	

Construction of dams/water reservoirs	The respondent women had little idea of these measures and how they may affect their lives. What they emphasize repeatedly is protection from recurrent floods.	
Community level and household based rainwater harvesting	Women had not heard about these technologies. However on getting an idea of these interventions, they explained that their locality/neighborhood was densely populated having no space to serve as water collection pond. They were also of the view that since they were tenants and poor they would not be able to invest household level rainwater harvesting technology.	

Group skills, strengths and leaders.

What is the group good at doing or what are the strengths? (e.g. committees, successful projects working together, construction or organizing skills, good connections outside community)	1) How can this be used for addressing floods, water scarcity, etc.? 2) Who will be the leader for making this happen? (what community committees can help with this?)
The community has a strong sense of togetherness. Women mentioned that they and their households would be ready to contribute their labor in any community led interventions.	This sense of togetherness can be transformed into effective community organization and can be encouraged to undertake community driven or community led initiatives.
Many household know the construction skills as men work as masons and construction labor.	These skills can be harnessed for community based/community led initiatives involving simple construction skills.
The community has a strong urge to improve their living conditions	This urge can be harnessed to mobilize the community for community based initiatives.

RAPID COMMUNITY SURVEY

BUILDING URBAN CLIMATE RESILIENCE IN PAKISTAN

UN-HABITAT - ADAPTATION FUND

Focus: community level – union councils (most vulnerable communities in target areas)

Method: group discussion

1. Basic assessment information / contact person details

Name community leaders (e.g. chairpersonunion council)	Mr Aqeel Rehman Area Supervisor, Tehsil Municipal Administration, Nowshera
Contact details and photo	+92 315 5879 619 For photos please see attached folder
Signature	Please see attached attendance sheet
Date assessment conducted	01 Aug 2018
Attendance sheet filled	See below
Photos of consultation made	See Part II.H

2. Community profile

Provincial, Districtand municipal name	Province: Khyber Pakhtunkhwa District: Nowshera Municipality: Tehsil Municipal Administration (TMA), Nowshera
Community / union council name	Union Council: Nowshera Kallan
Location (on map)	Please see attached map
Total population (number)	Nowshera Kalan--the area of the city proposed to be targeted with AF project has a total population of 83,567 as per the

		population census results of 2017. This population is distributed in 12, 445 households.
Number or percentage (please identify vulnerable groups in target areas – through discussion and data collection)	Female	48%
	< age 14 (children)	38%
	age 15-24 (youth)	20%
	age 25-60	40%
	> age 60 (elderly)	2%
	(ex) Refugees / displaced (from where?)	Nowshera district had once sheltered a very large number of Afghan refugees. In recent years it became one of the main areas where IDPs from trouble hit trible areas and Swat took refugee. However the exact population of this refugee population in Nowshera Kalan is not known.
	Informal people	Not known
	Indigenous people	Not known
	HIV positive	Not known
	Disabled population	2-3% of total population
	Other relevant	
Households (number) + average per household		Nowshera Kalan: 12445 Households as per population census of 2017. The average household size is 6.7 persons per household as per census 2017.
Poverty rate (%)		According to respondents, more than 50% households in Nowshera Kalan are poor.
Access to electricity (%)		100%
Access to clean water (%) and type (borehole, piped)		Household water supply source in Nowshera city: Tap water: 27% Hand pump: 22% Motor pump: 47% Dug well: 2% Other: 2% (Source: Pakistan Social and Living Standard Measurement Survey (2014-15), Pakistan Bureau of Statistics, Government of Pakistan)
Access to sanitation (proper toilet) (%)		97% households have a proper flush latrine facility (Source: Pakistan Social and Living Standard Measurement Survey (2014-15), Pakistan Bureau of Statistics, Government of Pakistan)
Main livelihoods / income in community		The male members of households in many households earn their living through menial labor in Nowshera and other places in Pakistan. Nowshera's construction workers are famous for their skills in plastering. The other livelihood sources include government jobs, jobs in small scale industry, shop keeping etc. Very few females are in paid employment. Mostly the educated female are serving as teachers in government schools.
Settlement photos and GPS points where possible (these could be combined	Floods (or risk areas)	Please see maps
	Drainage (issues)	Please see photographs
	Droughts (or risk areas)	Please see photographs

with community map below)	WASH (issues)	Please see photographs
	Other relevant	Please see photographs

3. Climate change – trends analysis

Expected outcome: Agreement on at least one or two climatic hazards, which have most impacted the community

Climate Change hazards	a) In the last 10 years, has the community been affected by:	Has this issue been getting:
Droughts/scarcity of clean water (lack of clean water for household use)	i) Yes, a lot, ii) yes, a little, iii) no, iv) not relevant. v) can't say.	i) a lot worse, ii) little worse, iii) same, iv) better, v) not relevant, vi) can't say.
River flood (directly from main river)	i) Yes, a lot, ii) yes, a little, iii) no, iv) not relevant. v) can't say.	i) a lot worse, ii) little worse, iii) same, iv) better, v) not relevant, vi) can't say
Diseases (e.g. dengue, malaria, diarrhea)	i) Yes, a lot, ii) yes, a little, iii) no, iv) not relevant. v) can't say.	i) a lot worse, ii) little worse, iii) same, iv) better, v) not relevant, vi) can't say

Top 3 most problematic climatic hazards

Hazard	Occurrence between 2008 and 2018 (years)	Possible comment
1. Drought/scarcity of clean water	Persistent problem	The available water from municipal supplies stinks and is highly contaminated. The ground water up to the depth of 100 ft is not fit for human consumption. Going further deep one may get somewhat cleaner and purer water.
2. River flooding	Persistent risk. The biggest flooding event in the known history of Nowshera occurred in 2010. However settlements/neighborhoods located in immediate vicinity of River Kabul recurrently get affected even by low level floods in the river	River Kabul flows through the city. The old city (which is proposed to be targeted with this intervention) is located on the left bank of River Kabul. Over the years, the haphazard and unplanned growth of the city resulted in encroachment of river banks. Whenever river overflows the surrounding localities are inundated.
3. Diseases/epidemics	Persistent risk	There is high prevalence of diseases like dengue, gastro, diarrhea, choler and hepatitis. Local residents attribute them to poor sanitary conditions of the city. The disease outbreak intensifies in flooding seasons.

4. Climate change – questionnaire

These questions help to analyze current and future climate risks, barriers to adaptation and factors/resources facilitating the coping strategies used by community and way of improving their resilience.

What problems / effects does yourcommunity face because of the one or two most problematic climatic hazards (see result trend analysis) and how do these affect men, women, elderly, youth, disabled people, (ex) refugees in your community?

Most problematic climatic hazard	Problems / effects (e.g. agriculture destruction, lack of water or food for cattle, drinking water scarcity, disease, death, damages of	Who (what group) is most affected?	How does hazard impact those most affected?

	houses or other assets, need to move somewhere else, need to invest in protection, need to find other income)		
1. Drought/ scarcity of clean water for human consumption	Despite being neighbor of River Kabul, Nowshera city suffers from scarcity of clean water for human consumption. In many areas of the city, the water is supplied by municipality. However in most the cases this water is found to be highly contaminated. For instance one of the main overhead water tanks is located just next to a waste dumping site. Local residents consider this situation as one of the factors contributing to contamination of water. Local residents also highlight that city waste water is disposed untreated into the river. This problem is further compounded by the fact that the city has three main slaughter houses. The waste generated from slaughtered animals is disposed directly into the river. The water supply pipes and street sewer, at various locations, run parallel. This is also one of the main reasons for high incidence of water contamination. Kabul River has been turned into a dumping site for solid waste of the city besides its being the disposal point for city sewage. The high level of contamination of Kabul River is one of the major reasons for contamination of water available for human consumption.	People of all ages and all sexes are affected. However it is the poor households and children who are most affected from water borne diseases.	Incidences of diarrhea are high among the infants and younger children. The poor households owing to their not being able to afford water purification/filtration systems are compelled to consume the contaminated water. The burden of disease not only causes health problems but also causes economic losses by reducing the productive time available to poor families. Prevalence of hepatitis is also very high. This situation has caused a number of deaths. Local residents attribute the poor quality of drinking water as being the main reasons for this situation. Poor households have to allocate a considerable portion of their meager incomes on healthcare. Their limited financial affordability does not allow them to avail better quality healthcare. This situation makes them caught in a constant spiral of disease and poverty.
2. River flooding	Four union councils of Nowshera city are located immediately next to Kabul River. These union councils include Chowki Town, Nowshera City, Kabul River, and Nawan Kallae. Residents in these localities recurrently get affected from flooding in Kabul River. The super floods of 2010, made Nowshera capture newspapers' and news channels' headlines. The city stood among the most flood affected areas of Pakistan. In some localities, the floodwaters reached the height of more than 20 feet destroying and damaging a very large number of residential, commercial, institutional and	Neighborhoods located next to Kabul River are most vulnerable. In absence of any meaningful enforcement of building codes and land use control, city has grown along the River Kabul encroaching its banks. Hundreds of residential, commercial, institutional and industrial	Settlements located in close proximity to River Kabul and water channels that drain into the river are among the most vulnerable areas. The poor households that make up the majority of these settlements are little prepared to reduce their vulnerability to recurrent flooding events.

	industrial buildings. In areas of city where agriculture and livestock rearing is still practiced, these livelihood sources get recurrently affected by floods in Kabul River.	structures are located dangerously close to river Kabul. Besides River Kabul a number of natural water channels that drain into River Kabul also pass through the city. During rainy season, these channels also cause flooding inundating neighboring areas.	
3. Diseases/epidemics	Contaminated drinking water, poor sanitary conditions and hygiene practices are considered by the community as main causes of high prevalence of diseases. The disease outbreak intensifies especially during flooding season. During last few years, Nowshera had been among the areas of the province most affected by dengue outbreak. Dozens of individuals have so far lost their lives to dengue.	Poor households are among the most affected ones. Infants and younger children get most affected by water borne diseases. Prevalence of hepatitis is high among all age groups.	

The magnitude of barriers to adaptation

What stops your community from coping with current impacts of the most problematic climatic hazards (see result trend analysis)? These can be e.g. lack of knowledge / education, lack of skills, lack of money, lack of land tenure, lack of irrigation, lack of drinking water supply, health issues, bad infrastructure, lack of drainage system, lack of natural resources like forests, etc.).

Most problematic climatic hazard	3) What is currently limiting your community from coping with or adapting to the impacts? (What makes it difficult for you to deal with them or makes it difficult to make changes to deal with them) 4) in what ways has your community already adapted to deal with these issues?	Ranking most important factors
1. Drought/ scarcity of clean water for human consumption	- The local government/municipal authorities of Nowshera city are severely resource constraint having no substantial funds and technical capacity to address city's chronic problem of scarcity of clean water for human consumption. - The community members find them helpless in getting rid of this issue. - The elected representatives make promises at time of elections but have so far not taken any meaningful steps to fulfill citizens' demands. - Citizens consider that supply of water is responsibility of government. Especially poor and lower middle income households do not afford to Install boreholes to extract groundwater from safer depths -Households generally are not aware of household level low cost water treatment technologies as is apparent from lack of availability of these technologies. - Water harvesting at community and household levels has never been considered as an option. Most of the respondents had not heard of them even.	

	Adaptation: People who can afford resort to use of bottled water as well as installation of household water filters. The poor however resort to consumption of contaminated water compromising their health.	
2. River flooding	- The concerned institutions have so far not taken well planned flood mitigation measures arguing they do not have required financial resources. - The communities are not familiar with community based flood management measures. - An effective early warning system and response mechanisms are not in place. - Flood resilient building codes and practices and land use controls are not in place. - The city has grown haphazardly in absence of any meaningful city development and management plans and strategies. - The very location of the city places it perpendicular to River Kabul. When there is flood in the river, it forcefully hits the city. River Kabul drains into River Indus. When Indus is in high flood it blocks the flow of River Kabul causing flooding in the upstream Nowshera. Likewise when there is flood in River Kabul, the floodwaters start flowing back in the channels that pass through the city and during normal days drain into River Kabul. This situation intensifies flooding in the city. - Like River Kabul, the natural water channels that pass through the city have also been encroached. At certain locations, buildings have been erected even in the beds of water channels. When rainwater flows in these channels it causes damage to these structures. - The city has a poor drainage system. During floods 2010, the floodwater stagnated in various low lying areas of the city for many days. - The river and the water channels have been turned into dumping points for city's solid waste. This situation chokes them and obstructs the free flow of flood waters. Against this situation, the local residents find them helpless to take any meaningful measures on their own. The local administration have limited financial resources at their disposal .They are understaffed and lack technical capacity to deal with this challenge. So far no effective disaster management plan or strategy has been chalked out for resilience of Nowshera. Whatever flood response measures are taken, are reactive in nature and normally comprise of evacuation and relief. The measures that could meaningfully reduce the vulnerability of the citizens and city and enhance their capacities are simply not in place. Adaptation: At certain points, the concerned authorities have constructed embankments or have constructed retaining walls for river lining. Although these measures have marginally contributed in controlling floods, the citizens do not consider them enough to control flooding on sustainable basis. Households who can afford have moved to safer locations. However the dwelling they have left/sold have been occupied by those who do not find safer alternatives.	
3. Diseases/epidemics	- The city has an ailing municipal water supply system. The municipal authorities neither have financial resources nor have technical skills at their disposal to address city's chronic water contamination challenge. Many households have installed hand pumps as main source of water supply. However these too do not deliver clean drinking water. To get a somehow cleaner water, one has to dig more than 100 feet to install	

	boreholes. Poor households do not afford this investment. In the aftermaths of floods the groundwater sources get further contaminated. Concerned authorities have so far been unsuccessful in launching effective public health awareness campaigns and preventive measures to control outbreak of dengue, malaria and diarrhea. Official of local administration recall that only once in last five years they had managed to distribute mosquito nets in communities most affected by malaria and dengue. City's public health system does not have capacity to fulfill citizens' health needs. Adaptation: - To suffer silently appears to be only adaptive strategy poor citizens have at their disposal.	

The priorities to be addressed in strengthening the adaptive capacity of the community.

What activities should take place or infrastructure constructed in order to improve your adaptive capacity to droughts / water scarcity, floods, landslides, heat, and diseases? What is most important for the community?

Most problematic climatic hazard	Activity and/or infrastructure	Ranking most important activity and/or infrastructure
1. Drought/ scarcity of clean water for human consumption	- The concerned authorities should install deep tube wells to ensure cleaner supply of water. - City's water distribution system should be overhauled. - Water filtration plants should be installed in every neighborhood and these plants should be regularly maintained. - Concerned authorities should design an effective waste management plan for liquid and solid waste to stop the contamination of drinking water from them.	
2. River flooding	- Construction of retaining walls and embankments. - Construction of check dams and water storage ponds - Installation of an effective flood early warning system.	
3. Diseases/epidemics	- Fumigation of city on regular basis. - Construction of slaughter houses in a way that their waste is not disposed in the river. - Introduction of an effective system for management of solid and liquid waste.	

Gender working group Meeting Minutes for preparation of Adaption fund project July 31, 2018 at UN Habitat

The meeting was attended by

1. **Mr. Jawed Ali Khan, HPM, UN Habitat Pakistan**
2. **Mr. Basharat Hussain (UN Habitat)**

3. **Mr. Sheraz (UN Habitat)**
4. **Mr. Vlastimil Samek, Director (UNIC)**
5. **Ms. Zikrea, (UNIDO)**
6. **Ms. Maheen Hassan (UNDP)**
7. **Ms. Najma (UNDSS)**
8. **Ms. Almas (Shehrsaaz)**
9. **Mr. Abdul Shakoor (Shehrsazz)**
10. **Ms. Faiqa Aziz**

The panel discussed the challenges faced due to climate change hazards and measures were proposed to strengthen the adaptive capacity of women for climate related hazards

Identified Challenges for women to adapt to climate change vulnerabilities

- Women are typically absent from the forum where Disaster Risk Reduction (DRR) decisions/ planning, is made, so when priorities are established, the interests of women are often poorly represented.
- Women are absent from trainings for disaster management. They are mostly neglected.
- Difficulties in finding adequate shelter, food, safe water, and fuel for cooking, as well as problems in maintaining personal hygiene and sanitation, prevent women from performing their usual roles at home in disaster situations.
- Women also suffered from water crises due to the scarcity of clean drinking water. The majority of the women faced drinking water problem and communication problem due to damaged roads, culverts, and embankments.
- Mobility problems during floods
- There exists no mechanism to communicate to women specially to women

Measures Proposed for strengthening adaptive capacity of women

- Made them part of Awareness campaigns
- Prepare reading material and videos for them in local languages
- The project may play a strong advocacy role to harvest available water
- Train women to use of indigenous technologies for water harvesting
- Research and development is needed
- Assess adaptation needs (including technological needs) through stakeholder engagement
- Improve the knowledge, skills and behaviors of vulnerable women for a good quality warning, evacuation, shelter and rehabilitation mechanism.
- Development of a women volunteers team within each community to address women and girls special needs
- • Consider the level of women's access to technology and finances, health care, support services, shelter and security in times of disaster.
- Mainstreaming gender into policy processes, programmes and projects can help ensure that such processes equitably benefit women and men while allowing optimal use of the unique knowledge and skills of women and men. By the same token, gender mainstreaming can advance social policy (including gender equality) while ensuring greater returns on adaptation and disaster risk reduction investments.

- Build the capacities of national and local women's groups' and provide them with a platform to be heard and to lead
- Ensure that women are being visibly engaged as agents of change at all levels of disaster preparedness, including in early warning systems, education, communication, information and networking opportunities.