



ADAPTATION FUND

## **REQUEST FOR PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND**

The annexed form should be completed and transmitted to the Adaptation Fund Board Secretariat by email or fax.

Please type in the responses using the template provided. The instructions attached to the form provide guidance to filling out the template.

Please note that a project/programme must be fully prepared (i.e., fully appraised for feasibility) when the request is submitted. The final project/programme document resulting from the appraisal process should be attached to this request for funding.

Complete documentation should be sent to:

The Adaptation Fund Board Secretariat  
1818 H Street NW  
MSN P4-400  
Washington, D.C., 20433  
U.S.A  
Fax: +1 (202) 522-3240/5  
Email: [afbsec@adaptation-fund.org](mailto:afbsec@adaptation-fund.org)



# PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

## PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category: Regular  
Country/Cities: Mongolia/ Ulaanbaatar  
Title of Project/Programme: **Flood Resilience in Ulaanbaatar Ger Areas (FRUGA)-** Climate Change Adaptation through community-driven small-scale protective and basic-services interventions  
Type of Implementing Entity: Multilateral Implementing Entity  
Implementing Entity: UN-Habitat  
Executing Entity/ies: Ministry of Environment and Tourism (MoET), Municipality of Ulaanbaatar(MUB) and the Governor's Office, District Governors and Ger-Communities within Songinokhairkhan,Bayanzurkh and Sukhbaatar Districts  
Amount of Financing Requested: US\$ 4.5 million

## 1. Project Background and Context

Mongolia is a landlocked country located in Northeast Asia between Russia and China with a total land area of 1,564,116 square kilometres. It is surrounded by high mountains and is located on highlands at an average elevation of 1,500 meters above sea level.

Ulaanbaatar<sup>1</sup> (see picture below), the capital city, is the coldest capital city in the world. It is home to over 60 percent of the national population and nearly all of its skilled human capital and financial resources.



1 Ulaanbaatar will hereafter be referred to as UB city in this document.



## The problem

### From nomadic resilience to urban vulnerability

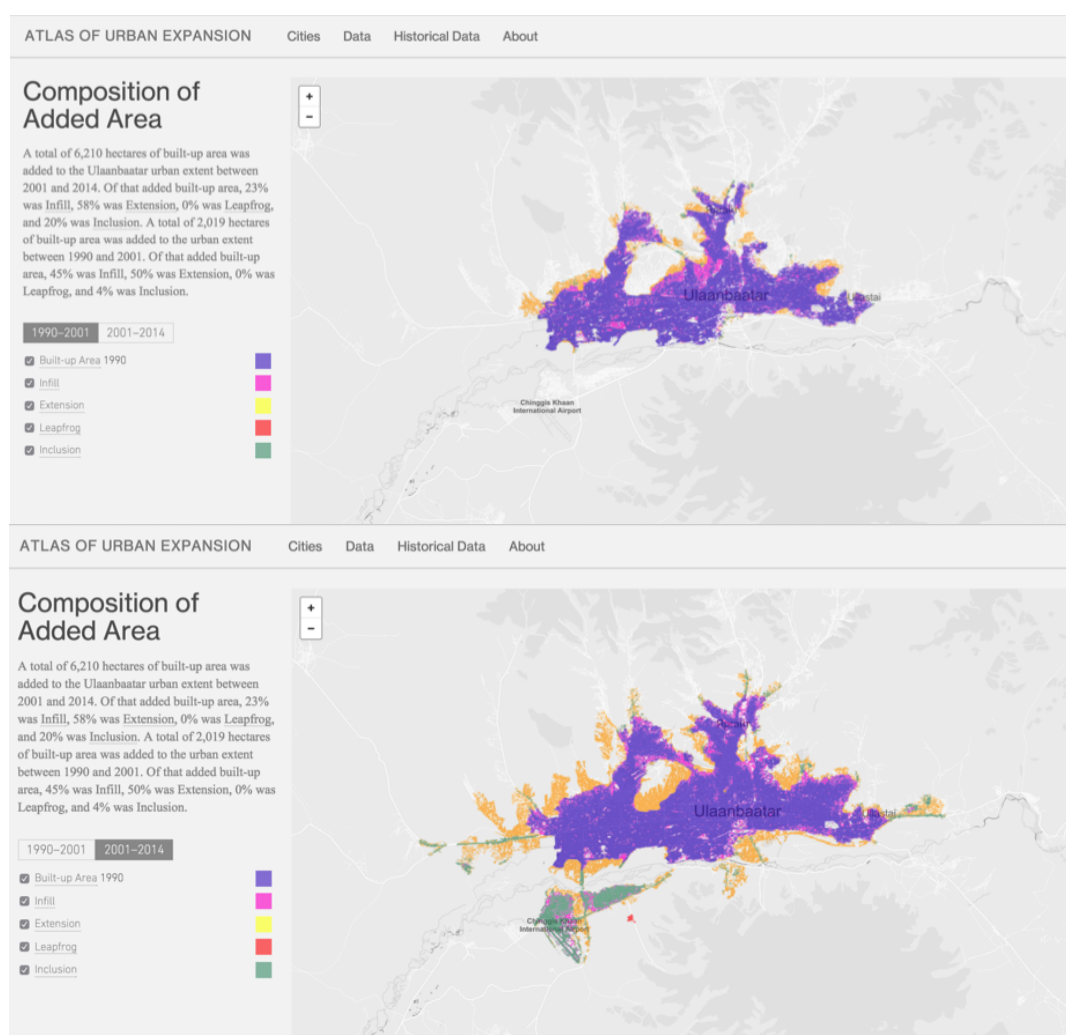
Although Mongolia is labelled as a stable economy with regard to its state of development, high rural-urban migration rates and uneven economic development remain major challenges in the country. Rural poverty, triggered by a combination of low incomes as well as desertification and natural hazards, has led to a significant increase in rural-to-urban migration with Ulaanbaatar being the main destination for in-bound migrants. Between 2000 and 2010 for instance, the country suffered five times from Dzuds (i.e. extreme winters with temperatures down to -50 degrees Celsius) that killed a significant portion of the country's cattle, leading to severe 'climate-induced migration.' For sheer survival, nomads moved to Ulaanbaatar, creating in the process a new class of 'urban poor,' that mostly reside in fast expanding informal 'Ger' settlements. This in turn has resulted in increased pressure on public services and the environment. These 'Ger' areas 'suffer' from the highest levels of urban winter air pollution in the world - caused by the burning of coal in the cities power plants and by the Ger communities, inadequate waste management, contaminated soil and water as well as increasing climate change related flood disasters and water shortages in high risk locations. Combined with very low incomes (i.e. 22 percent of the city's population lives in poverty) and limited government support (due to lack of resources and technical capacities) to provide adequate and climate resilient basic utilities and services to the ever-growing urban poor population, people living in these 'Ger' areas are particularly vulnerable.

Should another catastrophic dzud take place, this would occur at a time of extreme economic hardship and poor levels of preparedness. It is likely that it is the informal urban 'Ger' settlements, where just over one quarter of the entire country's population already resides, will be the most impacted within the capital. Another dzud would further increase the transient population of the city, increase urban density in the most 'at-risk' areas such as the steep slopes surrounding the city and the floodplains of its rivers. This 'forced' mass migration would contribute to the extreme levels of soil, air and water pollution as well as risk of flooding and landslides and increase social exclusion.

Ulaanbaatar city, located in the Tuul River Valley has been increasingly experiencing all forms of flood is largely due to climate change and ecological impacts on the upstream Tuul Ecosystem, as a result of increased tourism, agricultural and industrial activities and expansion of settlements in the area. This is not set to change due to the economic benefits of these industries but the country needs to carefully manage and conserve the Tuul River as it

supplies the water resources for the entire capital city where 60 percent of the countries population reside, and where major industries and businesses are located.

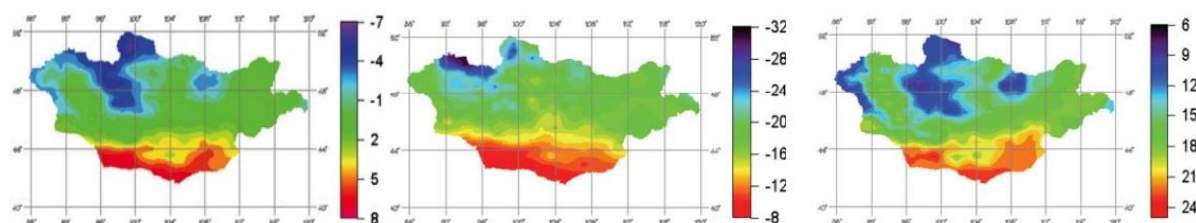
The combination of these factors and the exponential pace of in-migration has imposed huge pressures on the Government to address the challenges of rapid expansion of informal settlements and associated risks. The current economic challenged and the shift in leadership has meant the Government is required to retain a more macro- focus on the countries legislative and policy environment - focusing attention on the review. and development of evidence based policies to address prevailing challenges and national development and continued focus the implementation of larger IFI funded/multi-stakeholder programmes some of which focus on sustainable urban growth including in ger-areas. The Government are just about able to cope with creating the appropriate policy and planning environment in face of rapid urban expansion and do not have the resources to also prepare and plan for climate change impacts which are only set to deteriorate in future. Thus, the Government requires support to address the issue of expanding communities as a consequence of climate change as well as provide immediate attention to these Ger-communities who are left vulnerable to climate change affects upon arrival. Most urgently these vulnerable communities require support for urban resilience to climate change impacts through provision of multi-functional tertiary urban infrastructure, whilst building social cohesion - something UN-Habitat has extensive experience doing and is well positioned to undertake.



**Figure 1: Shows the expansion of Ulaanbaatar's physical area between the period 1990-2001(top) and 2001-2014 (bottom): A total of 2,019 hectares of built-up area was added to the urban extent between 1990 and 2001; and a total of 6,210 hectares of built-up area was added to the Ulaanbaatar urban extent between 2001 and 2014. Source: Atlas of Urban Expansion 2016, an initiative of UN-Habitat, NYU and the Lincoln Institute of Land Policy. <http://www.atlasofurbanex->**

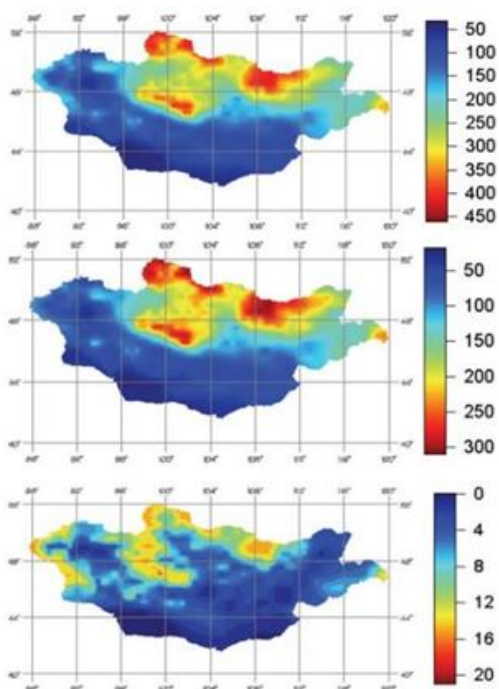


## Climate change projections



**Figure 2** Annual mean air temperature (left), mean air temperature in winter (middle) and mean air temperature in summer (right). Source: Assessment report on climate change 2009, pp. 36-37.

Mongolia has four distinct seasons, large temperature fluctuations, and little precipitation. The climate varies widely from region to region, not only due to differences in altitude, but those in latitude. The annual mean temperature is between  $-8^{\circ}\text{C}$  and  $6^{\circ}\text{C}$ , and varies considerably among regions. Summer temperatures range between  $10^{\circ}$  and  $26.7^{\circ}\text{C}$  and can reach a maximum of  $45^{\circ}\text{C}$ , while winter temperature ranges between  $-15^{\circ}$  and  $-30^{\circ}\text{C}$ , and can even dip below  $-50^{\circ}\text{C}$  (Figure 2).



**Figure 3** Geographical distribution of annual precipitation (top), summer precipitation (middle), and winter precipitation (bottom) in mm. Source: Assessment report on climate change 2009, p. 37.

In general, mean temperatures are highest in south Gobi ( $>6^{\circ}\text{C}$ ) and decrease to the northern parts of the country, with mean a temperature of  $0^{\circ}\text{C}$  in Mongolia's northern part of the Gobi desert region. Extreme temperature shifts across seasons (Figure 2, summer and winter) and abrupt shifts within shorter time spans (i.e. day/night, hour/hour, day/day) are mainly due to the country's long distance from oceans, the high mountains which surround it and its high elevation of more than 1.5 kilometres above sea level. It should be noted that annual mean air temperature at the land surface has increased by  $2.07^{\circ}\text{C}$  for the years from 1940 until 2013.<sup>2</sup>

Rainfall varies within the country and is strongly influenced by topography, increasing from south to north. Precipitation in Mongolia is generally low with annual averages of 300-400 mm in the northern mountain regions, 250-300 mm in the forest-steppe zones, 150-250 mm in the steppe zones, and 50-100 mm in the southern Gobi Desert (Figure 3, top). About 85 percent of the annual precipitation is recorded during the months from April to September, of which 50-60 percent falls in the summer months of July and August (Figure 3, middle). Although rainfall

is generally low in Mongolia, its intensity is high. Records show intense rainstorms that receive 40-65 mm of rain in only one hour. Precipitation during the winter months from December to March is highest in the northern mountain areas with 20-30 mm of snow, around 10 mm in the desert region and 10-20 mm in the other regions (Figure 3, bottom).

Due to its location, fragile natural ecosystems, the lifestyle of the people and the economic situation, Mongolia's sensitivity to climate change makes this an important topic to be addressed by the Mongolian government. The impact of already observed climate change related events caused high damages not only to its livestock, but also to the country's ecology

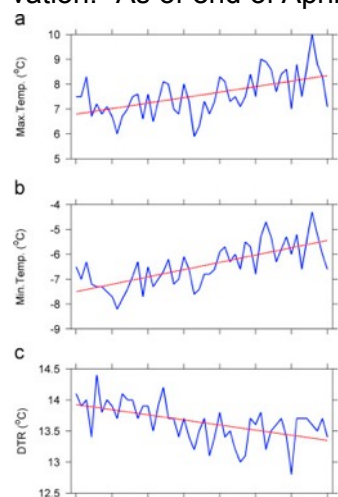
2 Mongolia Second National Communication under the UNFCCC, p. 41.

and socio-economic sectors. According to different scenario models, there will likely be an increase in temperature which intensity is expected to be higher during the summer seasons than the winter seasons. Similar increased projections are calculated with regard to precipitation. However, projected precipitation for the summer months are less than 10 percent, with slight decreasing projections for the 2011-2030 (2-4 percent decrease) and the 2046-2065 (0-0.4 percent decrease) periods. At the end of this century, in winter, a high intensity pattern of temperature is projected by 5.5-7.50°C in eastern and western regions of the country and by 5.0-5.50°C in the western region in summer. Winter precipitation is projected to increase by 55-75 percent in the central, western and eastern regions, whereas summer precipitation is projected to decrease by 5-10 percent in western Mongolia (Figure 3, bottom).

## Expected impacts

Mongolia is set to be significantly impacted by the effects of climate change. Although milder climatic forecasts might bring some benefits to a country such as Mongolia that endures harsh weather conditions, these are most likely to be outweighed by significant drawbacks for the country. As mean temperatures are to rise, secondary effects such as increases in extreme weather events become increasingly likely.

Climate change will exacerbate existing natural resource concerns due to changes in permafrost, or decreases in total glacier areas, for example. As a result, not only will the country's main water resources (lakes or surface water, for example) be significantly diminished, Mongolia will experience more desertification. Desertification has become a national disaster, affecting more than 70 percent of Mongolia's grassland. Moreover, climate related hazards such as heavy rain and snowfall, strong winds, sand and snowstorms, hail, and floods have become more and more frequent in recent years and are likely to intensify in the future. **Zud** or **dzud** – extremely harsh winters – deprive livestock of grazing and is a specific phenomenon that takes its toll in winter and spring with a high number of livestock dying of starvation. "As of end of April 2010, or about 22 percent, of the country's entire livestock, over 10 million animals, were lost as a result of the 2009-2010 winter [dzud] disaster and consequently the livelihoods of over 200,000 rural herdsman living in the affected regions were severely threatened"<sup>3</sup>. Between 2000 and 2010, droughts in Mongolia have also intensified and become increasingly frequent, inducing forest and steppe fires and causing dust and sand storms.



**Figure 4 Climate Variability across Mongolia in Celsius.** Source: Assessment report on climate change 2009, p. 39.

Ulaanbaatar, located in the Tuul River Valley at an elevation of about 1300 m, is fed by downstream water supplies coming from the Upper Tuul ecosystem, which covers an area of over 5000 square kilometres. Ulaanbaatar's water supplies, therefore depend entirely on the Tuul River and recharging of the groundwater aquifers. Any changing ecological conditions in the upstream ecosystem directly impact on the availability and regularity and flow of water resources. Increasing human influence and land use pressures in the Upper Tuul due to intensive grazing tourism, logging and harvesting have continued to deteriorate the ecosystem, and contributed to increase run off and intensification of the maximum and minimum flows of the river and increased flooding particularly over the past 15 years<sup>4</sup>.

To compound this, more extreme temperatures are being experienced during summer and winter across Mongolia as evidenced by Figure 4, which explores the climate variability

3 <sup>1</sup> Mongolia Second Assessment Report on Climate Change, 2014, p. 14.

4 <sup>1</sup> The Economic Value of the Upper Tuul Ecosystem in Mongolia, World Bank 2009, Page xiv

across Mongolia. This phenomenon would give rise to increased dzuds (extreme winters) as well as increased floods (hotter summers) and risk of water shortage due to droughts.

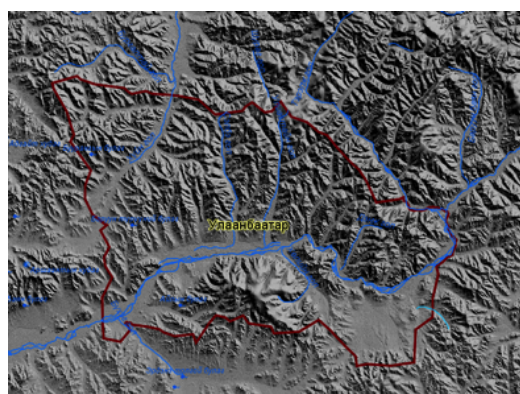
The Flood Risk Assessment of UB City also indicated annual mean temperatures have increased by 1.56 C over the past 60 years, which has led to a decrease in both duration and depth of snow cover, altered timing and length of snowmelt period, impacting on downstream flooding regimes.<sup>5</sup> This provides evidence of climate induced temperature changes being a direct consequence of the increased flooding being experienced in UB city and in particular to the poorly prepared Ger-areas. A further consequence related to changes in river stream regimes (and sometimes the impact of flooding) is increased water shortages.

### Flood risks and vulnerabilities

Central Mongolia, where Ulaanbaatar is located, has seen the most prominent increase in warm summer days and nights. A consequence of this has been increased and more frequent flooding in Ulaanbaatar City. As indicated by the recent the Flood Risk Assessment (FRA) study,<sup>6</sup> that looked at 35 floods that occurred within the period of 1915-2013, 60 percent of these floods took place within the decade of 2000-2010 and most occurred due to water flow and run-off from mountain slopes and along dry river beds during summer months.

While precipitation is heaviest in low-elevated land areas, they are a major cause for flash floods. The 2003 flash floods for instance killed 15 people, made 30 families homeless and destroyed 93 houses.<sup>7</sup> Floods often occur due to degradation of the land water retention capacity, urbanization in the hilly, steep sloped-areas, as well as deforestation in the watershed area. Limitations of the early warning systems, emergency management services, and lack of awareness among citizens and public servants increase climate risk.

Since 2000, Ulaanbaatar city has been increasingly experiencing all forms of flooding: river (fluvial) flooding; overland (pluvial) flooding, alluvial, flash and ground flooding, with Ger-areas most at risk. The FRA study<sup>8</sup> states that 50 percent of these floods were of 'alluvial' type, occurring due to water flow and run-off from mountain slopes and along dry riverbeds.



Ger areas of the city are structured like trees with main and narrow branching streets. There are two types of Ger settlements, which are vulnerable to flood. One is at the foothills and slopy areas of mountain hills and nearby and/or at mouth of gullies, natural drain trenches and ditches, which are the actual pathways of alluvial flash floods. Other settlements are at low laying flood plains, nearby the rivers and/or at mouth of floodwater flow.

**Figure 9 Major riverbanks of Ulaanbaatar- Selbe river goes between Sukhbaatar and Bayanzurkh districts**  
Source: Geo-Database on ecological health, Environmental Information Center 2016

The Ger areas of Bayangol and Tolgoit rivers and at the downstream of Uliastai, Gachuurt and Khuandai-Dendiin rivers, and densely populated downstream areas of Selbe River and Dundgol are designated as having high and very high levels of vulnerability. The most risky

5 Flood Risk Assessment and Management Strategy of Ulaanbaatar City 2015-Volume 1, World Bank, Page 52

6 Flood Risk Assessment and Management Strategy of Ulaanbaatar City 2015-Volume 1, World Bank, Page 13

7 OCHA Mongolia flash floods situation report, 2003. Online at <http://reliefweb.int/report/mongolia/mongolia-flash-floods-ocha-situation-report-no-1>



areas are located in downstream of Selberiver, Tuul-Dund gol, Tuul-Sonsgolon and Tolgoit rivers conjunctions where more dense settlement and inundation cover wider areas. New settlements are to be located in the Hui-Mandal, Bukhur-Turgen and Uliastai river basins.

Flood hazard are likely be increased in the northern and south-eastern parts of the city; Exposure is likely be increased in areas of unplanned settlements, expansion of Ger and summercamp areas, namely Khui-Mandal river sub-basin located in the north-western part of the city, Songinokhairkhan district, Gachuurt, Uliastai sub-basins, Bayanzurkh, and northern parts of Selbe and Tolgoit sub-basins.

The most frequently flooding Ger areas are located on the territories of: i) 12, 13, and 14 khoroots of Sukhbaatar district; ii) 21, 27, 8, 23<sup>rd</sup> khoroots of Bayanzurkh district; iii) 25, 7<sup>th</sup> khoroots of Songinokhairkhan district; and iv) 9<sup>th</sup> khoroot of Bayangol district.



Location where Ger-areas experience flooding in Khoroo 7, with water flowing down from Khoroots 24 & 25  
*Photo (UN-Habitat July 2017)*

### **Flood impacts in target communities – in photos**

Although findings of recent assessments indicate that 50 percent of floods were of ‘alluvial’ type, occurring due to water flow and run-off from mountain slopes and along dry river beds; river flooding, overland and ground water flooding and flash floods are all equally dangerous and tend to exacerbate already poor living conditions in Ger areas.

For instance, poorly constructed, old and inadequate infrastructure cannot withstand the pressures of floods and tend to malfunction or fail, increasingly deteriorating Ger community access to safe water (i.e. contaminated by combination of floods, waste and sanitation) and access roads/routes into and out of communities, and urban basic services, particularly sanitation, and gas/heating required to withstand the extremely cold temperatures (see annex 1 and 2 -Rapid settlement needs survey – conducted in target areas – for more detailed information).

The following pictures supplied through consultations with the local authorities met during project development, show the variety and types of floods and their impact on settlements and living conditions in some of the vulnerable Ger areas of Ulaanbaatar. Some problems captured include - the collapse of roads and surface layers leading to flooding from sinkholes – causing waste water to flood into settlements and un-disposed waste to be carried to other areas and even other khoroot settlements (particularly during alluvial flooding). The rise of



river floodwaters cuts of access routes to and from settlements preventing mobility of Ger residents. In some apartment buildings waters flood basements with power circuitry and result in power outages for residents in the entire building. Other Ger settlements have to bail grey water and black water out of their ger-tent homes due to flooded sewers and canals.

### Songino-khairkhan district 7<sup>th</sup> khoroo (Rain in 2017.06.20)



Flooding of main road sinkhole constructed by the Geodetic Water Facility Office of the Housing Authority *Photo (UN-Habitat June 2017)*



Sinkholes have flooded the streets and made large amount of waste float resulting to wastewater pollution. *Photo (UN-Habitat June 2017)*





“Mon Laa- candle industry” and gas station areas flooded with wastewater and garbage discharging garbage and wastewater Photo (UN-Habitat June 2017)



Basement of the 12<sup>th</sup> apartment of Khilchin hothon – flood water and ground-water penetrating from the walls and floors leading to power cut restriction of 670 households Photo (UN-Habitat June 2017)



Flood due to lack of flood sewage and canal in households near 0119<sup>th</sup> military unit and 1-4 streets Photo (UN-Habitat June 2017)

## Economic context

Mongolia was experiencing high levels of growth in 2011 due to its vast and rich natural resources, with the highest recorded growth figures of 17.5 percent globally, before the economy took downturn in 2012/2013 and reached a growth rate of only 0.1 percent in 2016. This was largely due to the fall in commodity prices and decrease in exports to China (95 percent of exports go to China) and a parallel decline in foreign investment that took place due to some policy changes which made international investment in the country more challenging. According to most recent statistics published by the World Bank, Mongolia's Gross National Income (GNI) amounted to US\$3,870 per capita, yielding economic growth of only 0.1 percent in 2016. This trend is projected to slightly increase with forecasted GDP growth rates of 2 to 3.7 percent for the years 2017 and 2019, respectively.<sup>9</sup>

Mongolia's economy is not very diversified and driven by two main sectors: the Mineral industry and agriculture. While the country's economic base was fundamentally agricultural, its mining industry contributes to around 20.3 percent to the country's GDP, and accounts for more than 80 percent of its export and 40 percent of government revenues<sup>10</sup>. The agriculture sector, on the other hand, is failing to realize its growth potential due to fallen commodity prices and the impacts of climate change.<sup>11</sup>

Ulaanbaatar (UB City) is a key, if not the key economic region in Mongolia accounting for approximately 64 percent of Mongolia's GDP. However, UB City also experiences very high inequality with 22 percent of the city residents below the poverty line and living on 2\$ a day and these are based primarily in the Ger areas. The on-going Ger area redevelopment programmes maintain a key focus on facilitating the growth of the informal sector, for strengthening micro-small-medium enterprises (MSME) and improving connectivity to the urban core, as potential drivers for improving the economic conditions of Ger Areas and UB city as a whole.

The diversification of the economy, and a healthier local business environment - promoting self-sufficiency and reduction of inequalities- while moving away from extreme reliance on export commodities is clearly the way forward to achieve more economic stability for the country.

## Social context

Mongolia has a population of 3.03 million, growing at a rate of 1.7 percent annually.<sup>12</sup> Almost half (i.e. 47 percent) of the country's population is currently living in its capital city (1.38 million) and the share of the urban population has increased to 67 percent of the total population<sup>13</sup>.

Since the 1990s, UB city has had limited formal extension of its core, which largely comprises apartment blocks with comprehensive utility services, including dedicated heating, water, and sanitation. However, successive waves of in-migration with Ger tents have reshaped the city's geography, with (i) little upgrading or extension of basic urban services; and (ii) government policy, since 2003, to grant each citizen about 700 square meters of land. A vast, low-density peri-urban area, commonly and collectively referred to as Ger areas, now

9 The World Bank, 2017. Per capita GNI is displayed using the World Bank's Atlas method, which smoothens a country's GNI per capita by price variations and exchange rate fluctuations, taking into account the year of observation and the two previous years. It further adjusts the country's own and the international rate of inflation, with the international inflation rate being the euro area, the United Kingdom, the United States and Japan since 2001. Online at <http://data.worldbank.org/country/mongolia>

10 UN-Habitat – Mongolia Country Profile.

11 IMF Country Report No. 03/277, p. 2.

12 The World Bank, World Development Indicators, 2017. <http://data.worldbank.org/indicator/SP.POP.GROW?locations=MN>

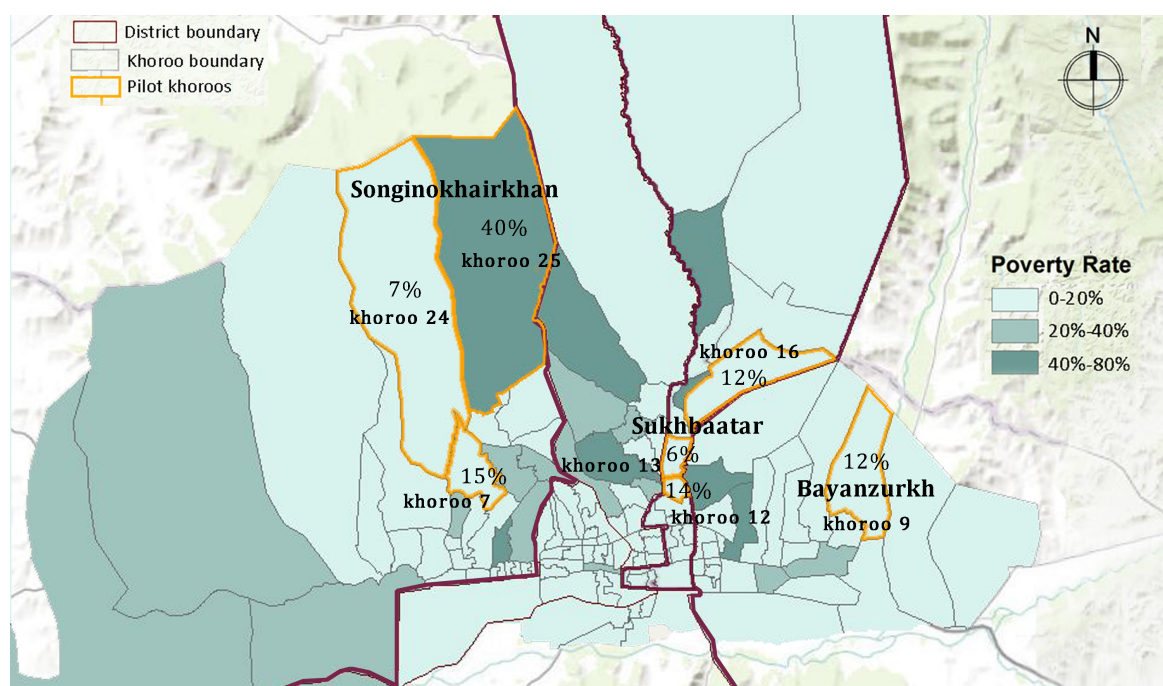
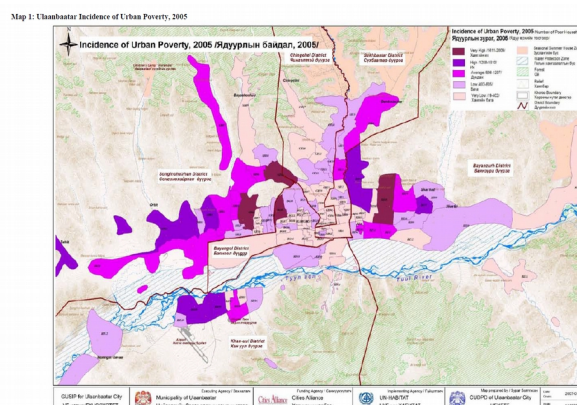
13 United Nations Statistics Division, 2017. Online at <http://data.un.org/Data.aspx?q=mongolia+urban+&d=POP&f=tableCodepercent3a1percent3bcountryCodepercent3a496>



extends around the city core- with three informal settlement tiers around the formal urban core area, the inner, middle, and fringe locations- these are characterized by unplanned settlements of low and medium income households with land ownership, un-serviced plots, unpaved roads and poor facilities. Settlement growth here much faster than urban development and is projected to increase by another 40 percent by 2020.

Although poverty is more pronounced in rural areas, inequality, particularly in access to various services is higher in urban areas,<sup>14</sup> and especially in Ger areas where there are very low levels of public services available and very few households that are connected to the city's water distribution network.

The Urban Poverty Profile – generated as part of the Citywide Pro-poor “Ger Upgrading Strategy and Investment Plan”(GUSIP) programme by Cities Alliance and UN-Habitat in collaboration with the Government provides a snapshot of Urban Poverty in Ger Areas of Ulaanbaatar City in 2005, which remains relevant till today. The following map clearly indicates that the highest incidence of poverty is focused around the three tiers of the sprawling Ger areas around the inner urban core – which has much lower poverty prevalence.



**Figure 5 Ulaanbaatar poverty mapping by household income.** Source: MUB 2016

The Ger area population is estimated at 800,000, representing 60 percent of Ulaanbaatar. Despite their size, Ger areas have until recently been considered temporary settlements. However, their official integration in the 2013 city master plan provides the necessary provision to plan the redevelopment of the Ger areas into a formal peri-urban area.

14 Government of Mongolia, UNDP and SIDA (2011, p87) Mongolia human development report



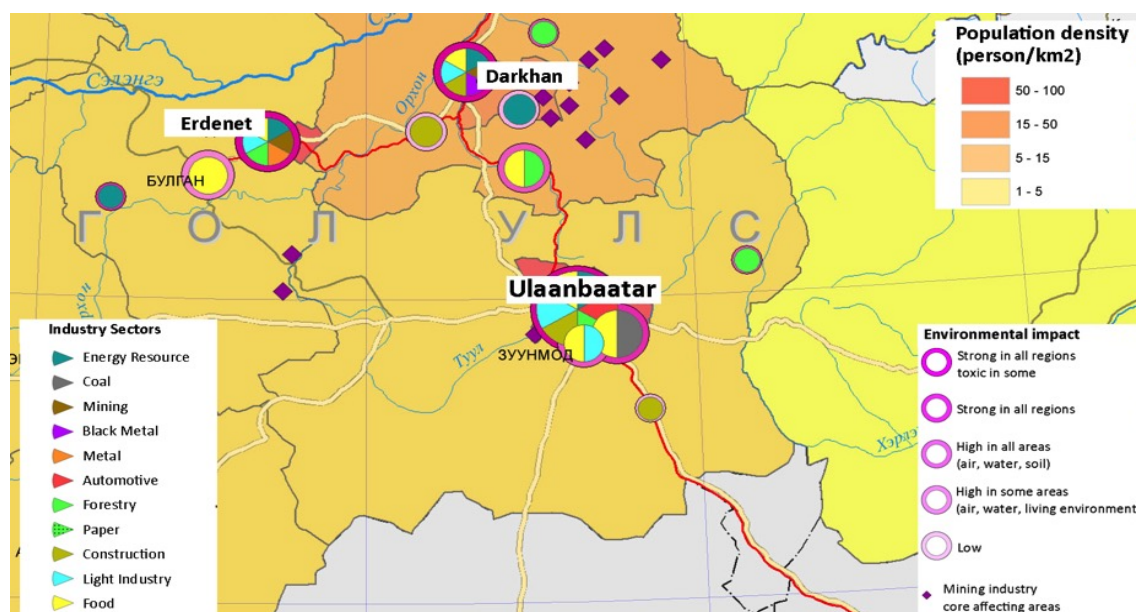
Lack of long-term planning, infrastructure investment, and land use regulation in Ger areas have resulted in haphazard development, limited availability of space for public facilities, poor access to socioeconomic services, insufficient livelihood opportunities, and insecure neighborhoods. The lack of basic urban infrastructure is preventing rational and dynamic urban development, increasing the costs of doing business and of accessing services. The city core where jobs and services are concentrated has experienced unprecedented congestion, due to rapidly increasing private vehicle ownership and use, while the urban road and public transport networks have not kept pace with this rapid growth in traffic demand.

The service gap between the city core and Ger areas means Ger residents are badly connected to the city core and poorly integrated in the urban economy, and this is one of the most urgent and difficult development challenges. While various government and development partner initiatives have significantly improved living conditions in Ger areas, approaches have generally focused on specific sectors, failing to design a sustainable vision and provide integrated solutions for the problems of peri-urban development.

## Environmental context

The Mongolian topography is characterized by a clear north-south divide. While the north is dominated by huge mountain ranges, deep forests and steppe, the southern parts of the country are of much lower elevation, and consist of mainly parched lands such as deserts and desert steppe. A significant area of the south is covered by the Gobi Desert, one of the largest desert regions in Asia that also covers parts of northern and north-western China. Mongolia is rich in mineral resources such as gold, silver, coal, precious stones, and gravel. Its mining sector is among the driving economic forces in the country, however these industrial activities are a major cause for parts of rivers becoming heavily polluted. Rivers, such as the Tuul River, for example, are not only utilized for industrial purposes, but also for household and drinking water consumption. The Tuul River is among the most polluted fresh water source in the country. It flows through the centre of Mongolia as well as Ulaanbaatar City.

The negative environmental impacts of city growth are urban air pollution caused by increased energy consumption and use of coal, pressure on water resources, accumulation of



**Figure 6 Environmental impact of industries in Ulaanbaatar and major cities around.** Source: GEF IW : LEARN & UNDP-GEF Baikal Project 2016

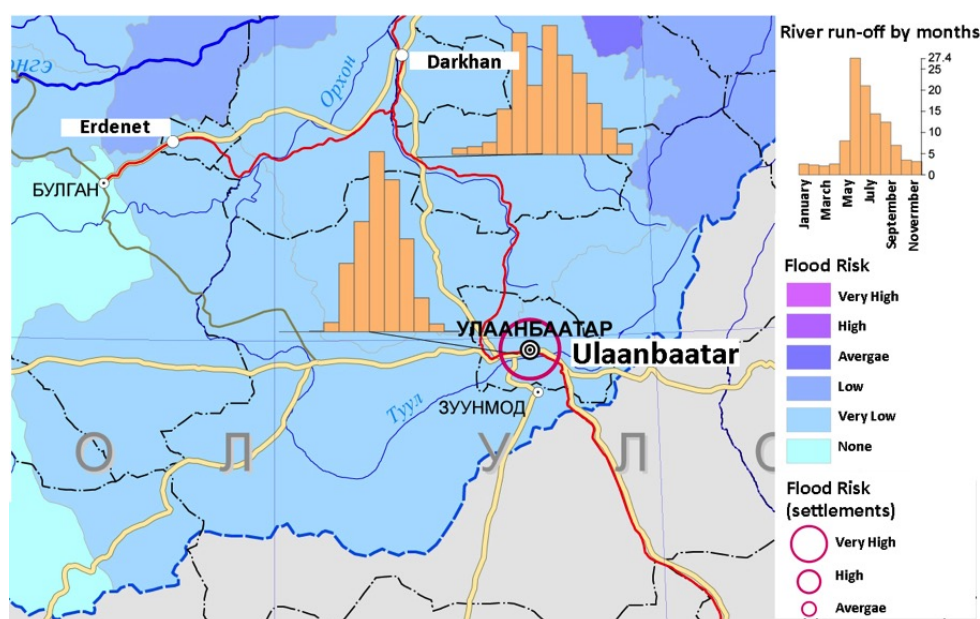
solid wastes, impact on forests and protected areas nearby. Figure 6 indicates that UB city is

the most polluted region of Mongolia due to multiple industries with strong to toxic levels of environmental impact felt across all areas of the city.

Living conditions in Ger areas are particularly inadequate. Poor sanitation—households almost exclusively rely on open pit latrines—and poor waste collection practices have created highly unsanitary living conditions. Air pollution is among the worst in the world, particularly during winter because of inadequate household heating systems, traffic jams and dust from unpaved roads. Access to water, supplied by kiosks operated by the Ulaanbaatar Water Supply and Sewerage Authority (USUG), is limited. There is a significant in-equality in access to water between ger residents who have to pay a premium for the cost of water, above all other residents/industries/businesses/institutions – it was found that the total volume of water use/consumption by ger residents (who constitute 60% of the city population) was 1.7 m<sup>3</sup> mill/year equating to 2.1% of the total consumption by the entire city; they however pay the highest water tariffs amongst local residents at 442 Tug/m<sup>3</sup> – higher than piped water to metered apartments (40 tug/m<sup>3</sup>), piped water to households (95 tug/m<sup>3</sup>) and even higher than piped water to industries and businesses (200 tug/m<sup>3</sup>).

In the same vein, a pressing issue to note is the significant decline in groundwater tables in Ulaanbaatar over the past 50 years. Current annual demand for water is in excess of 77 million cubic metres (supplied by USUG). With the population forecasted to rise by another 400,000 over the next 5 years, the demand will also increase significantly. Furthermore, land management practices for industry, tourism and settlements expansion upstream in the Tuul ecosystem will also have an impact on the availability of clean regular and sufficient river flow and groundwater resources for UB city.

Upstream ecological conditions in the Tuul ecosystem therefore have a direct relation the availability of groundwater and surface water downstream in Ulaanbaatar, where demand will continue to rise. Given the evidence of climate data for increased flooding due to rising temperatures, mechanisms for harvesting of storm and flood waters should be given serious if not equal consideration during the design of any hard- infrastructure interventions for climate change adaption - increasing amounts of flooding in Ger areas needs to be accompanied with storm water capture and recycling.

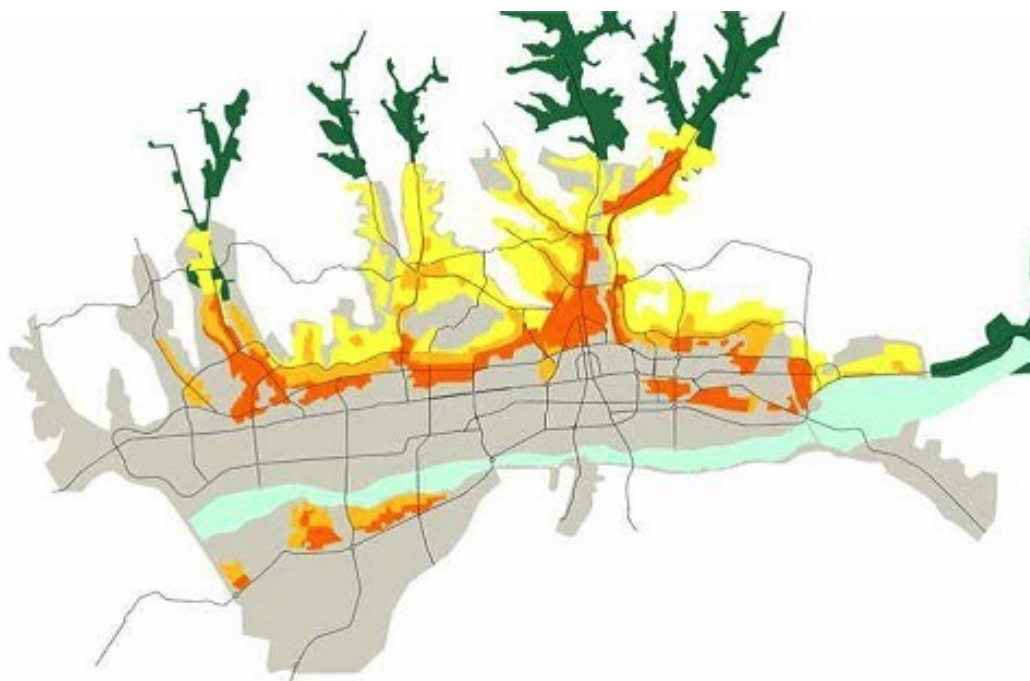


**Figure 7 Flood risk and river run-off in Ulaanbaatar and major cities around.** Source: GEF IW : LEARN & UNDP-GEF Baikal Project 2016

In 2011, most of the 40,000 people migrating to Ulaanbaatar settled in Ger areas; by 2022 at current growth rates Ger area population is estimated to grow by 400,000 from in-migration and natural growth. Under current conditions, the forecasted population increase is a serious threat to the city environment and population's health if the situation is not improved.

### Challenges and opportunities

The structure of Ulaanbaatar city consists of a vast, low-density peri-urban area, (Ger areas) around the city core- with three informal settlement tiers around the formal urban core area, the inner, middle, and fringe locations



**Figure 8 Ger district sections. Aqua blue-river basin, bright orange-central Ger areas, orange-middle Ger areas, yellow-peripheral Ger areas, grey-city area, green-green/camp zones.** Source: *Ulaanbaatar City Development Strategy-2020 and Development trend until 2030.*

Dramatic increases in urban population are coming with a wide range of challenges for the Government of Mongolia and have brought about profound consequences for its political, social and economic structures. The main challenges related to internal migration are limited capacities of government authorities to handle the volume and pace of in-migration, significant rural-urban inequalities, imbalanced social development, inadequate settlement structures to protect against extreme weather events, as well as limited access to basic services and infrastructures that are frequently insufficiently planned against severe weather events such as droughts floods or zhud disasters. These factors combined with poor waste management, air and soil pollution, water supply, and limited social services negatively impact the health and safety conditions of 'poorer' communities, their livelihoods and integration of migrants into the urban fabric.

However, there is high-level commitment to address climate change issues. The National Action Programme on Climate Change and the Second National Communication to UNFCCC both identify many programmes and projects concerning adaptation to climate change. The key challenges are in prioritising the proposed projects, finding mechanisms and instruments to make sure that private sector, civil society and individual citizens are all able to play their roles effectively.

The key climate change adaptation priorities and challenges seem to focus around the shortage of water and the increased flooding which is already impacting and set to severely impact

the expanding urban Ger communities of UB city – who already pay a premium for the cost of water, above all other residents.

## **Project approach**

With six out of every ten Mongolians living in urban areas, reducing vulnerability and increasing sustainability in urban areas will have a significant impact on national level development.

As Ulaanbaatar pursues its sustainability agenda by following the initiatives of wealthier nations through mass urbanisation, ambitious urban renewal projects and a focus on developing a city adapted to handle mobility issues around increasing traffic, it risks the chance to ignore the increased vulnerabilities to climate change related risks and thereby gradually reduces its own capacity for resilience. It is ironic that one of the historically most resilient and adaptive populations (through its nomadic heritage) is rapidly becoming one of the most at-risk and least prepared for climate change. For this process to be reversed, Mongolia's policy makers and urban planners not only design the city as they believe it 'should be', based on archaic principles of projection-based top-down urban planning but also 'plan' the cities as a place for people and design it with the population at its core, using bottom-up community led approaches.

Thus, at the basis of increasing urban resilience is to create incentives for the community to adapt by themselves, empowering the Ger-district communities to become the key stakeholders in their own resilience strategies. A key positive externality of such participative capacity building is the creation of a common social thread between the members of the community who have been removed from their tight-knit rural communities and find themselves living in an increasingly overcrowded environment. Stronger social ties amongst the urban poor reduces the threat of conflict and provides an essential support group post-disaster and at times of need. Without a strong and connected community at its foundation, strategies for improving their lives, including becoming more resilient to climate change, becomes very challenging. The creation of a sense of social harmony between the urban policy makers, the residents and the emergency responders allows for improved communication and the sharing of experiences which would ultimately lead to greater social resilience.

UN-Habitats; community development approach, the People's Process<sup>15</sup> lends itself to achieve this purpose very well, as successfully demonstrated by previous and ongoing projects implemented in Ger- communities on the areas of Water Sanitation and infrastructure services as well as urban health systems strengthening, urban planning and affordable housing in partnership with the Municipality of Ulaanbaatar and other stakeholders.

Building on the policy directions and strategies of the Government of Mongolia on climate change and resilience and complemented by consultation with national government experts, the Governor's office, District level Governor's and authorities on the priority climate adaptation need for flood resilience and identification of the most vulnerable locations which experience repetitive flooding, UN-Habitat has conducted Rapid Assessments in these Ger-Areas with most at risk communities and builds the following project components on the finding of this evidence within the framework of national policies and strategies.

## **Target communities**

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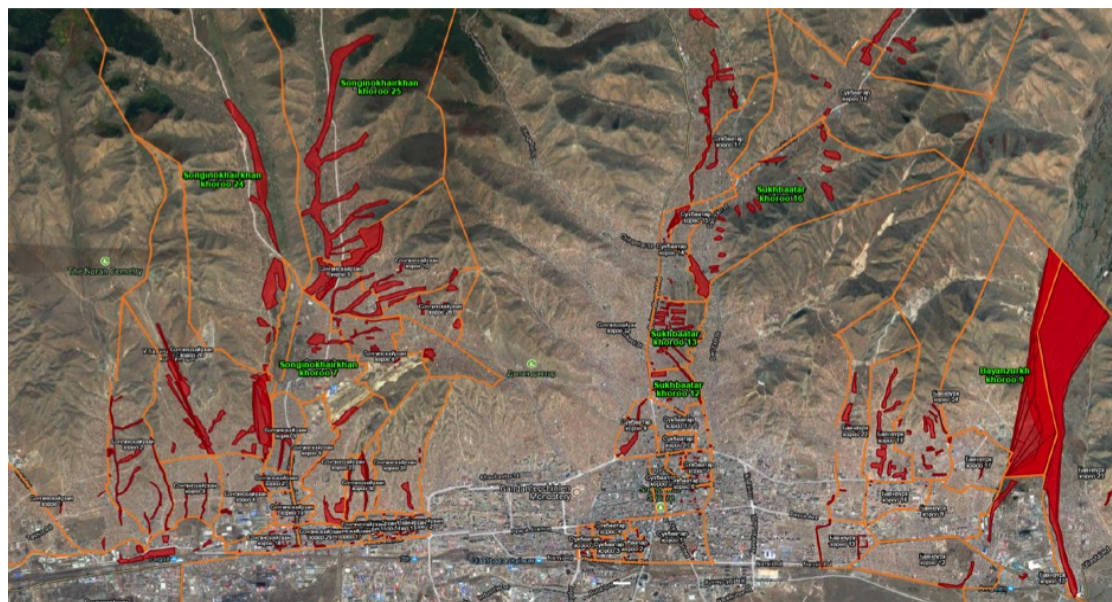
15 See Annexes 5,6 People's Process brochure and Poster.



The Flood Risk Assessment and Management Strategy of Ulaanbaatar City supported by the World Bank, specified the most vulnerable target settlements for hazard and risk mapping and the production and improvement of adaptive infrastructure, which were: (1) Tolgoitzuunsalaa, (2) Mon Laa (3) District III, IV flood control levee (4) Selbe river (5) Gorkhi and (6) Baatarkhairkhan Uliastai river. These are located on the territories of i) 12, 13, and 14<sup>th</sup> khoroots of Sukhbaatar district; ii) 21, 27, 8, 23<sup>rd</sup> khoroots of Bayanzurkh district; iii) 25, 7<sup>th</sup> khoroots of Songinokhairkhan district; and iv) 9<sup>th</sup> khoroot of Bayangol district<sup>16</sup>.

Further consultation with Governor's and the three (3) district authorities of Songinokhairkhan, Sukhbaatar and Bayanzurkh districts identified the below 7 khoroots (sub-districts) as the most vulnerable in terms of being impacted by floods and/or areas from which run-off takes place on a frequent basis. These districts fall amongst the biggest in terms of population size and the fastest growing in Ulaanbaatar.

During the rapid assessment of these settlements by the UN-Habitat community mobilization team (see full assessments in Annex A), the areas in red have been identified by the communities as most frequently flooded.



**Figure 10 Flood risk areas in 7 khoroots in Songino-khairkhan (left), Sukhbaatar (middle), Bayanzurkh (right)** Source: Ulaanbaatar Information and Technology department 2014

UN-Habitat will focus flood resilience and other priority adaptation intervention in 6 of the 7 khoroots as follows: within the three districts of SonginoKhairkhan, Sukhbaatar and Bayanzurkh. The khoroots and sites of interventions have been split into two areas. Area 1 is in SonginoKhairkhan District and covers Khoroo 7 and Khoroo 24 & 25 (of which Khoroo 25 will be excluded because of limited willingness to cooperate at this stage) – and is classified as the 'Bayankhoshuu sub-centre' for the Ger-area development initiatives and programmes. Area 2 is in Sukhbaatar and Bayanzurkh Districts with Khoroots 12, 13 and 16 in Sukhbaatar and Khoroo 9 in Bayanzurkh District. Although most of the focus is on floods adaptation work in these areas for those khoroots which contribute to run-off, some protection work will also need to be undertaken to minimize the intensity and frequency of alluvial floods. Besides that, interventions will focus on addressing secondary impacts to flooding, such as reduced access to clean water and the outbreak of diseases.

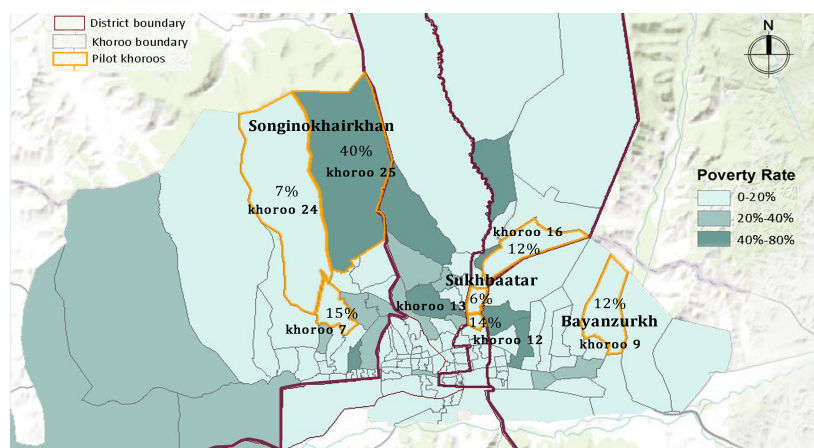
16 Flood Risk Assessment and Management Strategy of Ulaanbaatar City 2015-Volume 1, World Bank, Page 30

Area 1 contains a population of **47, 677** persons and khoroo 7 where the main focus of resilience adaptation activities will be focused, has a **poverty prevalence of nearly half, at 48 percent**. The area experiences frequent surface water and ground water flooding; is water-logged and faces serious health issues as a consequence due to floating garbage and overflowing of pit latrines.

Area 2 contains a population of **42, 098** persons and has a lower poverty prevalence. All 4 khoroo reported surface water flooding and lack of drainage. All khoroo also reported overflowing pit latrines as a consequence and one khoroo reported garbage floating down from neighbouring districts during floods.

**The combined population of these two areas are 89,775 Ger-residents of which approximately 42,205 residents (47 percent) are female; of which 27,775 residents (31 percent) are under 25 years old; 3756 are elderly, 1038 are disabled, 1768 are immigrants arrived within the last 6 months and 1142 are ‘informal people.’ Therefore a significant proportion of the communities are considered the most vulnerable (i.e. elderly, disabled, extremely poor, lacking social ties and integration with community).**

Khoroo communities in both areas cited numerous health issues related to climate change induced phenomenon around air pollution and flooding; with the main problems reported being cardiovascular diseases, stomach and liver diseases, respiratory diseases and allergies, skin diseases and infections, chickenpox and diarrhoea. Some are related to problems with access to clean water.



Khoroo communities in both areas cited financial constraints, lack of technical knowledge for adaptation measures and awareness of risks, and no drainage and connectivity to tertiary service networks as major factors preventing them from coping with current climate change impacts.

Khoroo communities also proposed a number of resilience building interventions following consultation with UN-Habitat which focused around hard adaptation measures such as construction of safer sanitation systems and sewerage canals, waste water and drainage infrastructures, establishing systems for waste management and safe disposal, tree planting, fencing and street lighting with community surveillance; and soft adaptation measures such as increased awareness of risks, hygiene education, community empowerment, community management and incentives systems.

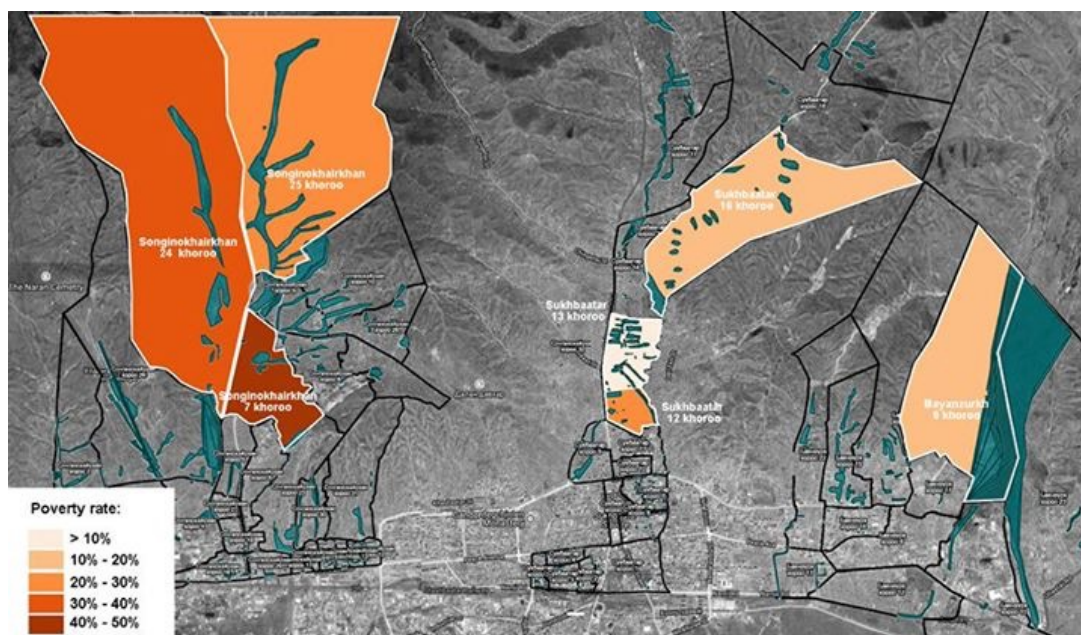


Figure 11 Rapid needs assessment for vulnerability analysis of communities in flood risk areas of Songino-khairkhan (left), Sukhbaatar (middle), Bayanzurkh (right), poverty prevalence Source: Ulaanbaatar Information and Technology department 2014, UN-Habitat Mongolia 2017

## 2. Project Objectives

### Main objective

The main objective of the proposed project is to **enhance the climate change resilience of the six most vulnerable Ger khoroo settlements focusing on flooding<sup>17</sup>** in Ulaanbaatar City by:

1. Improving the knowledge on hazard and risk exposure and vulnerability for these areas.
2. Improving the resilience and adaptive capacity of the Ger communities through a Community-Based approach.
3. Developing, improving and/or strengthening Ger area services and physical infrastructure assets, supported by enhanced capacities of responsible district level and khoroo authorities.

The main component of the project will be the provision of flood resilient physical infrastructure and services building on the priorities as communicated by the UB city authorities and evidence made available and supplemented with hazard and risk mapping and delivered within the framework of enhanced capacities and awareness for resilience and risk reduction at Ger -district and community level.

<sup>17</sup> As identified in the Flood Risk Assessment and Management Strategy of Ulaanbaatar City supported by the World Bank



### 3. Project Components and Financing

**Table 1** Project components and financing

Project Components	Expected Concrete Outputs	Expected Concrete Outcomes	Amount (US\$)
<b>1. Component 1</b>  Producing hazard and risk information / evidence for reducing vulnerability at the city level; and for Areas 1 & 2 across 3 Districts, comprising 6 khoroo Ger areas (sub-district) at high-risk of frequent flooding	<b>Output 1.1.</b>  <b>One (1) Ulaanbaatar Ger-Area Hazard Risk and Vulnerability Assessment Report</b> —including (a) review of urban development and land use masterplans and recommendations for land-use and urban development zoning; (b) identification of locations and adequacy of physical infrastructure and assets (evacuation centres, early warning system (sirens), critical infrastructure/services) and (c) recommendations for re-planning and re-development projects for Ger- and other local areas	<b>Outcome 1.1.</b>  Relevant threat and hazard information / evidence and recommendations for reducing vulnerability at the municipal and community level generated  (In line with AF outcome 1: reduced exposure at national (and city) level to climate-related hazards and threats )	200.000
	<b>Output 1.2.</b>  <b>Six (6) Detailed Ger-khoroo level flood risk, exposure and vulnerability assessments reports</b> , including flood hotspot maps (impacts vulnerability and risk), EWS needs, (especially health and disasters), resilient livelihoods opportunities, adaptation interventions in the short, medium, and long term by priority; assessment of community capacities to address climate change induced- floods and analysis of gaps for addressing flood-related impacts		180.000
	<b>Output 1.3.</b>  <b>Simulation model</b> for forecasting future impacts of climate change flooding in <b>UB city &amp; Ger-areas</b> established		200.000
	<b>Total</b>		<b>580.000</b> (15,5 PER-CENT)
<b>2. Component 2</b>  Participative action planning and capacity development for flood resilience in Ger-areas at the capital city, district/khoroo and community level	<b>Output 2.1.</b>  <b>One (1) Ulaanbaatar Ger-Area Resilience action plan</b>  A series of consultations/workshops at city, district and khoroo, focused on the findings of the <b>Ulaanbaatar Ger-Area Hazard Risk and Vulnerability Assessment Report</b> as well as the <b>six</b>	<b>Outcome 2.1.</b>  Target community members are aware of climate change impacts and participate in resilience action planning activities  (In line with AF outcome 3: strengthened aware-	80.000



	<b>detailed khoroo level flood risk, exposure and vulnerability assessments reports/maps</b> for general consensus on priorities and way forward, will be organized.	ness and ownership of adaptation and climate risk reduction processes at local level)	
	Output 2.2.  <b>Khoroo-level High-risk Ger areas resilience action plans</b>  A series of community level consultations/workshops introducing CBDRR concepts,focused on the findings of the community level risk and vulnerability assessmentsfor the 6 high-risk Ger areas to build general consensus on priorities and way forward, will be organized		120.000
	Output 2.3.  <b>Community-Based Disaster Risk Reductionand assets protection trainings</b> conductedfor district government and khoroo communities on the installation, protection/ maintenance and management of flood resilient infrastructure		180.000
	<b>Total</b>		<b>380.000</b> (10PER-CENT)
3. Component 3  Enhancing resilience of community level development and natural resource sectors	Output 3.1.  <b>Physical, natural, and social assets developed or strengthened in response to climate change impacts, - specifically flood-adaptation measures</b> and priority projects recommended in the Flood Risk Assessment and Management Strategy of Ulaanbaatar City and based on findings of risk and hazard mappings under Components 1&2	Outcome 3.1. Increased adaptive capacity within relevant development and natural resource sectors at the community level  (In line with AF outcome 4: increased adaptive capacity within relevant development and natural resource sectors)	2.640.000 (70,5 PERCENT)
	<b>Total</b>		<b>2.640.000</b>
4. Component 4  Awareness raising, knowledge management and communication	Output 4.1.  <b>Lessons learned and best practices regarding flood-resilient urban community development are generated, captured and distributed to other Districts and khoroo communities</b> , civil society, and policy-makers in government appropriate mechanisms	Outcome 4.1.  Project implementation is fully transparent. All stakeholders are informed of products and results and have access to these for replication  (In line with AF outcome	74.000

	Output 4.2.  <b>Trainings will be provided to city and district government officials on replication of climate-induced risk (flood) adaptation interventions and processfor other vulnerable locations/hazards in Ger areas</b>	2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses)	70,000
	Total		<b>154,000</b> (4PER-CENT)
5. Total components			3,754,000
6. Project/Programme Execution cost			394,000
7. Total Project/Programme Cost			4,148,000
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			352,000
<b>Amount of Financing Requested</b>			4,500.000

## Projected Calendar:

**Table 2** Projected Calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	06-2018
Project/Programme Closing	06-2023
Terminal Evaluation	09-2022

## PART II: PROJECT / PROGRAMME JUSTIFICATION

### A. Project components

The six target Ger communities in Ulaanbaatar are characterized by a high exposure to multiple climate hazards ranging from wind and dust storms, air pollution, and particularly by floods - cited as the main climate issue that required addressing by the communities - during the rapid needs assessment. Climate sensitivity is underpinned by rapid urbanization and population growth, leading to people residing in high-risk areas, in unsanitary conditions engaging in unhygienic behaviour, which exacerbates public health risks. Underlying vulnerabilities are poverty, limited social ties, limited access to basic services, gender inequalities and environmental degradation. Moreover, the adaptive capacities at household, community and governance level are barriers for change as is the very limited knowledge and awareness of risks and their own vulnerability.

To achieve the overall project objective, “**enhance the flood resilience of the six most vulnerable Ger settlements in Ulaanbaatar City,**” the project combines horizontally and vertically interrelated resilience strengthening of national and municipal institutions, khoroo<sup>18</sup> communities and their physical, natural and social assets.

The project intends to promote and improve vertical inter-departmental collaboration particularly by facilitating engagement between the Ministry of Environment and Tourism and the Municipal authorities at all levels, as a key gap that has not yet been addressed in Mongolia is the rollout and implementation of national level climate policies and strategies at the urban level. This approach will also allow for completion of feedback loop to inform and develop future urban climate policies, strategies and frameworks, building on the comprehensive adaptation measures to be implemented at city, district and khoroo community level.

By taking a comprehensive approach of city-level institutional capacity strengthening at city, district and (khoroo level) including support for community level actions for resilience building that respond to current and future needs, all actions will benefit the inhabitants of the Ger settlements while aiming to sustain the identified concrete adaptation measures, and also allowing for replication of best-practices in other high risk Ger communities. Therefore, with a strong mix of soft and hard interventions, it is anticipated that local resilience including at the household, community and informal settlements level is sustainably strengthened.

The specific needs of women, recent migrants and indigenous people, people with disabilities and youths will be considered at all stages of the project. This is achieved through engaging representatives of these vulnerable groups in community and stakeholder consultations with a community-based approach the people’s process<sup>19</sup> – where community 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.

**Component 1:** Producing hazard and risk information / evidence for reducing vulnerability at the city, district and khoroo community level– primarily for Ger areas at high-risk of frequent flooding.

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18 Khoroo - sub-district

19 Please refer to Annex 5 for more details about UN-Habitat’s community engagement approach – The People’s Process

In line with AF outcomes 1 and Mongolia and Ulaanbaatar Government priorities (see section D), this component will focus on reducing vulnerability to climate-related hazards and threats both at the city/town and community level by:

- 1.1. Producing one Ulaanbaatar Ger-Area Hazard Risk and Vulnerability Assessment Report;
- 1.2. Producing six Detailed Ger-khoroo community level flood risk, exposure and vulnerability assessments reports;
- 1.3. Develop a simulation model for forecasting future impacts of climate change flooding in UB city & Ger-areas

The information generated by the vulnerability assessments and simulation model will allow the municipality, district authorities and khoroo communities to understand climate change related impacts and risks and to identify appropriate and community specific resilience interventions based on this information. This component is required because the current information on climate change impacts and risk (e.g. the World Bank flood risk assessment) is not detailed enough to identify appropriate interventions at the community level. A city level assessment for Ger- areas is further required to confirm the community priorities that came out of the rapid- assessments conducted by UN-Habitat in the proposed 6 khoroo communities while also looking from a more macro-perspective at trans boundary impacts between khoros and districts. Assessments at the municipal level combined with simulation modelling done and maintained with the Ministry (MoET) will foster information sharing, allow for municipal level authorities to get a comprehensive understanding of climate change impacts and risks (besides flooding) and capacity transfer on relevant climate related policies and strategies from MoET, thus allowing authorities to react strategically, with foresight, for facilitation of climate adaptation measures in the most vulnerable urban areas.

All information collected, and assessment reports, plans and strategies will be made available on a digital format in Mongolian and English and uploaded on the Municipality of Ulaanbaatars' web portal and spatial database. The simulation model will be launched online by the Ministry of Environment and Tourism and linked to the cities environmental and geospatial databases <http://www.ubgeodata.mn/geocity>.

**Component 2:** Participative action planning and capacity development for flood resilience in Ger-areas at the capital city, district/khoroo and community level.

In line with AF outcomes 3 and Mongolia and Ulaanbaatar government priorities (see section D), this component will focus on strengthening awareness and ownership of adaptation and climate risk reduction processes and capacity by:

- 2.1. Developing an Ulaanbaatar Ger-Area Resilience action plan
- 2.2. Developing six community-level High-risk Ger areas resilience action plans
- 2.3. Conducting Community-Based Disaster Risk Reduction and assets protection trainings.

As discussed above, Component 1 will allow Ulaanbaatar municipality, district level authorities and the target khoroo Ger communities to plan for resilient development, including identifying low risk areas for development and identifying and prioritizing interventions that increase the resilience of the community (based on community needs identified during the rapid assessments and especially those of the most vulnerable groups) which are sustainable. The in-depth/detailed vulnerability assessments conducted will identify climate change impacts and risks and vulnerabilities and capacity development needs specific for target communities and ensure that proposed interventions are selected based on this information by looking at the following criteria:



- ☐ Responding to resilience building needs of the community, especially responding to flood risks
- ☐ Cost effectiveness of interventions
- ☐ Potential environmental and social risks

Proposed interventions will be presented in the resilience action plans. To ensure awareness and ownership over the project activities, targeted population groups will be involved in all steps (planning, implementation, monitoring, etc.) of project activities and trained to ensure effective implementation and sustainability of 'hard' interventions (focused on installation, protection/ maintenance and management of flood protection or resilient infrastructure). For the maintenance and management of flood resilient infrastructure, UN-Habitat proposes to build on the role and functions of the Community Development Committees (CDC's) that are formed as part of the People's Process for all projects and that are currently operational or have been operational - and will be strengthened by community nomination of members specifically to oversee the implementation, management and monitoring of community assets and infrastructure which help adapt to increased flooding and water resources management. They will also be the key recipients of community level trainings (Component 3) on the maintenance and management of adaptation infrastructure and more broadly awareness around the issue of urban resilience for their khoros.

The Ministry of Environment and Tourism will be invited to participate/observe the implementation of People's Process at the urban level and provide technical advisory inputs.

### **Component 3: Enhancing resilience of community level development and natural resource sectors**

In line with AF outcomes 4 and Mongolia and Ulaanbaatar government priorities (see section D), this component will focus on increasing the adaptive capacity of relevant development and natural resource sectors by:

- 3.1. Developing or strengthening physical, natural, and social assets in response to climate change impacts, - specifically flood-adaptation measures and priority projects recommended in the resilience plans.

Component 1 and 2 were required so that Ulaanbaatar municipality, target communities and households can identify areas, and assets most vulnerable to climate change and prioritize measures to protect existing assets and plan, construct and maintain appropriate new infrastructure that will protect the communities and their assets from climate change impacts and natural disasters, especially floods.

During the rapid assessments, Khoroo communities also proposed a number of resilience building interventions which would contribute to decreasing vulnerabilities particularly on public health, which were being exacerbated due to increased flooding adding to their already poor living conditions. Community proposals focused around hard adaptation measures such as construction of safer sanitation systems and sewerage canals, waste water and drainage infrastructures, establishing systems for waste management and safe disposal, tree planting, fencing and street lighting with community surveillance; and softer adaptation measures such as increased awareness of and trainings around risks, hygiene education, community empowerment, community management and incentives systems.

As the National Emergency Management Agency (NEMA) of Mongolia is already implementing effective Early Warning Systems (EWS) with plans to roll-out further initiatives under the *Centre for operative management and early warning (established 2013)*. Since the requirement for ensuring disaster and risk information to end line and vulnerable communities is met; the project will not focus proposed components in this area.

#### **Component 4:** Awareness raising, knowledge management and communications.

In line with AF guidelines and outcome 2 and Mongolia and Ulaanbaatar government priorities (see section D), this component will strengthen urban-level institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses, especially related to floods and ensure the project implementation is fully transparent, all stakeholders are informed of products and results and have access to these for replication. This is done by:

- 4.1. Capturing lessons learned and best practices regarding flood-resilient urban community development and distribute these to other communities, civil society, and policy-makers in government appropriate mechanisms
- 4.2. Conducting trainings to city and district government officials on replication of climate-induced risk (flood) adaptation interventions and process for other vulnerable locations/hazards in Ger areas

Lessons regarding increasing the flood resilience of communities need to be captured and municipal and district level government officials trained to ensure the sustainability of this project and effective replication of best practices.

All knowledge products generated will be made available on a digital format in Mongolian and English and uploaded on the Municipality of Ulaanbaatar's web portal and spatial database. <http://www.ubgeodata.mn/geocity>. The simulation model will be maintained by the Ministry of Environment and Tourism and be an ongoing data-sharing and risk analysis collaboration between the Municipality of Ulaanbaatar and the Ministry.

### **B. Economic, social and environmental benefits**

By implementing a combination of institutional, community and assets risk and vulnerability reduction measures, especially in vulnerable/poor urban areas, this project is expected to provide reductions in future climate related economic, household and livelihood losses, reductions in vulnerabilities of elderly, women, immigrants, disabled and youth and reductions in environmental degradation.

Given that communities, and especially vulnerable groups, will be involved throughout the project, they will have the opportunity to directly influence project activities and outcomes, thus influencing their direct project benefits. The design will be adapted to local impacts of floods and storms, but also exposure to air pollution. Moreover, local and durable materials will be used in energy efficient manner. The settlement vulnerability assessments and planning processes are required to identify safe areas for development and for understanding remaining future climate change threats to which the design should respond.

With reference to climate change projection for period of 2011 -2030. Urban development will be intensified and more land will be utilised in Bayanzurkh, Khan-Uul and Songino-Khairkhan districts, and the most of the planned new settlements are to be located in the Hui-Mandal, Bukhug-Turgen and Uliastai river basins. 3 khoroos of consulted 6 khoroos are located near these areas.

**Table 3** Economic, Social and Environmental benefits

Type of benefit	Baseline	With/after project
Economic	Climate change is already lead-	• Potential risks of assets loss will be reduced for house-

	<p>ing to economic and livelihood losses, especially caused by floods, but also by droughts</p> <p>The risks and vulnerability will be assessed under the project and baselines will be set after the assessment before the proposed project interventions.</p>	<p>holds, businesses and public organizations</p> <ul style="list-style-type: none"> <li>• Government budget and resources for disaster relief activities during and after a potential disaster will be reduced and saved</li> <li>• Households and public investments to the land development will be increased, financial security will be improved</li> <li>• Community participation in infrastructure Projects will benefit the community through cash income as semi-skilled and skilled labour is to primarily be sourced from the community.</li> <li>• Additional resilient technologies will be imparted and may provide future livelihood opportunities.</li> <li>• Other livelihood opportunities (e.g. in agriculture and fisheries and ecosystem management) are expected to improve household incomes.</li> </ul>
Social	<p>Climate change is already leading to negative social impacts, especially caused by floods, but also by droughts and dzuds,, leading to rural –urban immigration and social tension and incoherence.</p> <p>The risks and vulnerability will be assessed under the project and baselines will be set after the assessment before the proposed project interventions.</p>	<ul style="list-style-type: none"> <li>• The climate induced poverty and fatality rates, diseases and food security and safety issues will be reduced</li> <li>• The climate induced negative impacts on public mentality will be reduced and prevented</li> <li>• Safety and stability factors for settlement development will be improved</li> <li>• Disaster induced negative impacts on people's access to education and health services will be reduced</li> <li>• Social networks of the residents will be kept and improved</li> <li>• Potential rates of crime and robbery during and after the disaster will be reduced</li> <li>• Safe and resilient houses and infrastructure will increase security of women and other vulnerable groups and will reduce health issues.</li> <li>• New climate resilient infrastructure and services contribute to social well-being.</li> </ul>
Environmental	<p>Climate change is already leading to negative environmental impacts, especially differences in temperature and precipitation, leading to floods and droughts, which in turn leads to erosion, deforestation, etc.</p> <p>The risks and vulnerability will be assessed under the project and baselines will be set after the assessment before the proposed project interventions.</p>	<ul style="list-style-type: none"> <li>• Reduction in climate induced environmental degradation and losses and waste production because of environmental/ecosystem protection, community-based waste reduction and recycling schemes.</li> <li>• Natural water sources such as spring, river, underground water table and ground wells will be protected from disaster induced pollution</li> <li>• Air and soil will be protected from potential pollution due to a disaster</li> <li>• Climate induced exposure to the hazardous waste pollution will be prevented</li> <li>• Reduction of environmental health and waste related issues due to the improved flood infrastructure</li> <li>• Promotion of ecosystem-based adaptation in urban environment, will lead to environmental benefits</li> </ul>

The normative aspects in support of the implementation of adaptation for vulnerable Ger-settlements under Components 1 and 2, will benefit the entire Ulaanbaatar city and their officials as well as all of the Ger population through the generation of hazard and risk information at city level, which is currently not available. Therefore, the programme will indirectly

benefit all of the Ger population of **Ulaanbaatar which is an estimated 60 percent of the entire city population or 800,000 people.**

Through the major operational component (Component 3) the project will directly benefit the vulnerable populations of 6 Khoroo's :Khoroo 7 and Khoroo 24 (& 25) in SonginoKhaikhhan District; and Khoroo's 12, 13 and 16 in Sukhbaatar and Khoroo 9 in Bayanzurkh District. **The combined population of these two areas are 89,775 Ger-residents of which approximately 42,205 residents (47percent) are female.** However, with the high rates of in-migration and natural growth foreseen in these areas, the direct beneficiary numbers are likely to be much higher.

Furthermore, Component 4 on knowledge, lessons and awareness will benefit **all of the city, district and khoroo level authorities** with improved knowledge, trainings and capacities to improve urban resilience, through planning and response to climate change

### C. Cost effectiveness

The design and implementation of the project focuses on maximizing the size of the 'hard/concrete' component (70,5 percent) to directly benefit the most vulnerable populations; thus limiting the 'soft' components to only those activities required to supporting the appropriate implementation of the 'hard' component and ensuring sustainability of the project. Although the project aims at maximizing the impact/population benefitting from interventions by considering the most cost-effective interventions, the final selection of prioritized interventions will be made with the communities, via the participatory community-led approach of the People's Process, and will not only depend on technical cost-effectiveness (by comparison to alternative interventions) but also on:

- ☐ Appropriate response to resilience building needs of the community, especially responding to flood risks
- ☐ Potential environmental and social risks

This means the most cost-effective interventions will be identified and communities will be able to consider and select alternative interventions if appropriate.

The cost of implementing the selected hard/concrete interventions will be minimized by an economy of scale approach, which mainly entails large-scale procurement procedures (where possible) and by involving communities in the development / construction (where possible) through conditions mentioned in contractual agreements. Through implementation of the People's Process across multiple cities and sectoral contexts, time and again, this approach was found to be the most cost effective, as it builds on community decision-making, local know-how and networks and facilitation, where the maximum value of each dollar is utilized to the maximum benefit of the community, in a transparent decision making process.

Altogether, the project will be cost-effective by:

- ☐ Avoiding future costs associated with damage and loss due to climate change impacts (especially floods) and to ensure the interventions are sustainable;
- ☐ Efficient project operations because of 'in-house' technical support options and capacity building expertise and because of direct partnering with the municipality (thereby building their capacity as well as reducing costs);
- ☐ Community involvement with development / construction of 'hard' interventions through recruitment of semi-skilled and skilled workers and because of community capacity building
- ☐ Selecting technical options based on cost-, feasibility and resilience/sustainability criteria



A comparison of alternative interventions will be included in the full project proposal.

## D. Consistency with national or sub-national strategies

**Mongolia's National Development Strategy** is strongly aligned with the SDGs and defines the country's policy up to the year 2021. It is intended to enhance Mongolia's capacity to adapt to climate change and to reduce their negative effects on the environment and the people. The country's **Second National Communication under the UNFCCC** focuses on a number of priority adaptation areas in different sectors that are vulnerable to climate change: 1) animal husbandry, 2) arable farming, 3) water resources, 4) human health and 5) forestry—*from which this project will address sector 3 water resources and sector 4-human health* Further, the **National Climate Risk Management Strategy** that was developed in 2009, aims to build climate change related community resilience by reducing risk and facilitating adaptation. The proposed project supports the achievement of strategic objectives 3 and 4 of the National Development Strategy and further contributes to the objectives set out in the Climate Risk Management Strategy. The proposed project also supports the **National Green Development Policy 2015 and action plan**; specifically addressing *Strategic Target 2 - on strengthening of the environment protection and restoration measures to reduce the environment pollution and degradation, to keep eco-system balance and Strategic Target 6 -Plan and develop human settlements with consideration of climate change and within the capacities of natural resource and its' rehabilitation of a region.*

At the city level, all interventions fit under the **Ulaanbaatar Master Plan 2030** specifically under *Priority 1: Ulaanbaatar will be a safe, healthy and green city that is resilient to climate change and Priority 2: Ulaanbaatar will provide a livable environment for its residents through appropriate land use planning, infrastructure and housing.* UN-Habitat is already a partner working closely with the Municipality and ADB for the redevelopment of areas prioritized under the Master plan. Finally, this project proposes to address some the key strategic directions, recommendations and target areas within the **Flood Risk Management Strategy of Ulaanbaatar City**; interventions comprehensively fall under 3 of the 5 strategic directions of the Flood Risk Strategy - *which are No's 2 - Resilient Urban Development; 3-Flood protection infrastructure and 4- Safe people and resilient communities.*

**Table 4:** Project alignment with National and Ulaanbaatar priorities

Policy/Document	Year submitted/ratified	Relevant priorities
Initial National Communication to the UNFCCC	2001 / Superseded by the Second National Communication in 2010	<p>Adaptation actions in the following areas:</p> <p>1) Rangeland and Livestock</p> <p>2) <b>Water Supply and Demand:</b></p> <p>- adaptation measures are recommended in areas of water resources; residential water supply; pasture water supply; irrigation; water quality; and socio-economy issues.</p> <p>3) Arable Farming</p> <p>4) <b>Soil Degradation and Desertification</b></p>

		-adaptation measures that can prevent soil erosion and degradation in pasture are identified. These are: Improvement of legislative mechanisms for pasture use, focusing on local communities; establishment of a suitable farming and pasture system that is flexible towards climate variations; improvement of pasture water supply in order to avoid the concentration of animals around certain water sources; improvement of the road network; and restoration of the saxaul forest and other forests and planting woody vegetation in degraded area and area sensitive to soil moisture.
Second National Communication to the UNFCCC	2010	<p>Adaptation actions in the following areas:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Pastoral livestock</li> <li><input type="checkbox"/> Arable farming</li> <li><input type="checkbox"/> <b>Water resources</b></li> <li><input type="checkbox"/> <b>Human health</b></li> <li><input type="checkbox"/> Ecosystems adaptation</li> <li><input type="checkbox"/> Forestry</li> <li><input type="checkbox"/> <b>Barriers to adaptation</b></li> </ul> <p>Given that Mongolia is more urbanised than many other countries in Asia-Pacific – around 65percent live in urban areas – urban features heavily throughout various sector priorities, both in adaptation and mitigation, in the SNC</p>
National Action Programme on Climate Change	1 <sup>st</sup> phase 2011-2016 2 <sup>nd</sup> phase 2017-2021	<p>Five strategic objectives established:</p> <p><b>1) Set the legal environment, structure, institutional and management frameworks for addressing on climate change.</b></p> <p><b>2) Ensure environmental sustainability is maintained and reduce socio-economic vulnerabilities and risks through strengthening the national climate change adaptation capacity</b></p> <p><b>3) Mitigate GHG emissions and establish a low carbon economy through the introduction of environmentally friendly technologies and improvement in energy efficiency</b></p> <p><b>4) Enhance the national climate observation, research and monitoring network and strengthen employees' capacity</b></p> <p><b>5) Conduct public awareness campaigns and support citizen and community participation in actions against climate change</b></p> <p>In the first phase (2011-2016), national mitigation and adaptation capacities will be strengthened, legal, structural and management systems will be set up and community and public participation will be improved.</p> <p>In the second phase (2017-2021), climate change adaptation measures will be implemented and start up greenhouse gas mitigation actions.</p>
Technological Needs Assessment for UNFCCC	2013	<p>Provides a new GHG inventory and vulnerability assessment, though does not provide a detailed sectoral assessment in that way that Cambodia's SNC does, for example.</p> <p>Five strategic objectives established:</p> <p>1)Animal husbandry</p> <ul style="list-style-type: none"> <li>-Reducing land degradation and desertification</li> <li>- Improved livestock quality and livestock management</li> <li>- Improved herders' livelihood</li> <li>- Increased urban food supply</li> </ul>

		<p>(Every year, around 1.0 million USD is allocated from Government budget to facilitate scientific, environmentally sound measures against pasture insects and rodents. Monitoring system for pasture and soil has been created and is being strengthened.</p> <p>Existing national policy documents include strategic objectives to protect pasture, which occupy about 80percent of the territory. These objectives include improved pasture management, regulation of livestock numbers and herds' composition by matching with pasture carrying capacities, improved animal breeds, and regional development of intensified animal farming.)</p> <p>2)Arable farming</p> <ul style="list-style-type: none"> <li>- Improved agricultural technologies</li> <li>- Increased agriculture production</li> </ul> <p>(As of 2015, the total cropland has been accounted as 750 thousand ha and 450 thousand ha is re-used cropland, which was abandoned. Drip irrigation systems have been experimented since 1997 and currently used for limited area of vegetable field. )</p> <p>3)<b>Water resource</b></p> <ul style="list-style-type: none"> <li>- <b>Improved water resource management</b></li> <li>- <b>Increased urban water supply</b></li> <li>- <b>Increased pastureland and agriculture water supply</b></li> <li>- <b>Improved water quality</b></li> <li>- <b>Changed behavior of population to use water efficiently</b></li> </ul> <p>(As of 2015, state protected area covers 17.4percent of the total national land including a certain part of river headwater areas. Integrated river basin management plans have been developed for 7 river basins out of the planned 29.)</p> <p>4) <b>Human health</b></p> <ul style="list-style-type: none"> <li>- <b>Reduced risks to human health caused by natural disasters, communicable diseases and climate change</b></li> </ul> <p>5) Forestry</p> <ul style="list-style-type: none"> <li>- Ensured sustainability of forest resources</li> </ul> <p>(Community based forest resource management has been introduced and about 20percent of the forest area is currently under protection of community forestry groups, which comprise 74.8percent of the total community groups on environmental protection. Multi-purpose forest resource inventory is under the process.)</p>
Green development policy 2014-2030	1 <sup>st</sup> phase 2014-2020 2 <sup>nd</sup> phase 2021-2030	<p>Six strategic objectives established:</p> <p>1) Promote a sustainable consumption and production pattern with efficient use of natural resources, low greenhouse gas emissions, and reduced waste generation</p> <p><b>2) Sustain ecosystem's carrying capacity by enhancing environmental protection and restoration activities, and reducing environmental pollution and degradation</b></p> <p>3) Increase investment in natural capital, human development and clean technology by introducing financing, tax, lending and other incentives for</p>



		<p>supporting a green economy</p> <p><b>4) Engrain a green lifestyle by reducing poverty and promoting green jobs</b></p> <p>5) Encourage education, science, and technology to serve as the catalyst for green development, and develop cultural values and livelihoods that are in harmony with nature</p> <p><b>6) Develop and implement a population settlement plan in accordance with climate change, while considering the availability of natural resources and the resilience of regions</b></p> <p>In the first phase (2014-2020), Lay the foundation for green development</p> <p>In the second phase (2021-2030), Transformation to green development</p> <p>Relevant proposed interventions:</p> <p>2.3. Strengthen national capacity for the climate change negative impact mitigation and adaptation – <i>nr 4: Release adaptation measure versions by key economic and social sectors and develop a national adaptation strategy.</i></p> <p>2.9. Increase the capacity and productivity of water supply and sewerage facility, provide at least the 90percent of the population with drinking that meets hygiene standards, and provide access to improved sanitation to at least the 60percent of the population.</p> <p>2.11. Support initiatives to use conserved water by harvesting rain, snow and storm water, projects to use surface water collection, and research and development on ground water restoration and increasing of the resource.</p> <p>6.2. Reduction of air, water and soil pollution by implementing improved plan for urban land use, construction zoning and infrastructure and creating appropriate legal framework on accountability – <i>Nr. 4: Ulaanbaatar City Ger area sanitation improvement pilot project will be implemented and good practices will be shared and spread.</i></p> <p><i>Progress – The Project to Reduce Soil Pollution by Improving Sanitation in Ger areas" has been introduced in 2017; and is funded by the Japan Fund for Poverty Reduction, managed by the Ministry of Environment and Tourism and the Asian Development Bank"</i></p> <p><i>The project will introduce improved sanitation facilities for households in Ger districts of Chingeltei 12, 13 khoroo and Bayanzurkh 27 khoroo.</i></p> <p><i>The project will not only include sanitation facilities in Ger areas. It will include developing of regulations of wastewater management systems and wastewater treatment, which focus on small and medium sized enterprises and residents of Ger areas. They will work in areas of waste storage, collection, transportation, fertilizers, waste disposal and related controls.</i></p>
Ulaanbaatar 2020 master plan and development approach for 2030	2014	<p><b>Stormwater and flood management:</b> Engineering flood protection measures will include managing infrequent spring floods, draining rainwater from roads and squares, securing groundwater, strengthening channels and reducing land degradation.</p> <p><b>Protection:</b> The Master Plan plans 59.5km of channel (C1 – C24) is planned and C-1, C-2, C-3, C-11, C-13, C-14, C-20, C-21, and C-24 flood protection channel infrastructure to be built. C-3, C-14, C-15 will be built with flood protection dams. Further flood protection dams will be built at Dari-Ekh, Sharkhad, UrgakhNaran and Unurkhoroolol where there are deep rav-</p>

		<p>ines.</p> <p><b>Stormwater:</b> 82.5km of stormwater infrastructure will be built to ensure rainwater run-off is directed out of Ulaanbaatar during periods of high rainfall. The Master Plan plans for category 1 and category 2 roads to have open and underground road stormwater management systems.</p> <p><b>Extreme (1percent probability) flood protection:</b> Some of Ulaanbaatar's developed areas are in low-lying areas and within the river flood-plain. To address these issues, flood protection infrastructure will be built to protect the areas along the Tuul, Uliastai, Selbe and Tolgoit rivers. Proposed interventions to address flood risk is in the recently finalized FRMS referenced in the following document.</p>
Flood Risk Assessment and Flood Risk Management Strategy (FRMS) of Ulaanbaatar City	2015	<p><b>Flood Risk Management Strategy of Ulaanbaatar City; interventions comprehensively fall under 3 of the 5 strategic directions of the Flood Risk Strategy highlighted in bold below.</b></p> <ol style="list-style-type: none"> <li><i>1. Reduce flood risk and protect the environmental assets through improving risk knowledge and rehabilitating ecosystem of river basins and watersheds;</i></li> <li><b>2. Reduce flood risk through resilient urban development, land use and waste management, protection of social infrastructure and strengthened utility services;</b></li> <li><b>3. Protect the social and economic assets from flood through provision of structural protection with multifunctional and high quality engineering services;</b></li> <li><b>4. Reduce vulnerability of people, households and communities through improving social and emergency services, and building capacity for resilience and sustainable livelihoods;</b></li> <li><i>5. Implement good governance and effective flood risk management through mindset change and institutional transformation with advance of science and technology, and through strengthening economy, improving cost effectiveness of flood investment, and developing multi-sourced risk financing</i></li> </ol>
Nationally Determined Contribution	2015 (ratified the Paris Agreement 2016)	<p>The NDC identifies the following adaptation priorities:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Animal husbandry</li> <li><input type="checkbox"/> Arable farming</li> <li><input type="checkbox"/> <b>Water resources sector</b></li> <li><input type="checkbox"/> Forest resources</li> <li><input type="checkbox"/> <b>Natural disaster management</b></li> </ul> <p>The mitigation component focuses on: Energy, transport, industry, and agriculture</p> <p>Relevant identified gaps and barriers:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Weak management of disaster risks at local level, weak and inadequate early warning systems for prevention of droughts and dzud's, a lack of an enabling legal environment.</b></li> <li><input type="checkbox"/> <b>Insufficient human resources capacity and a lack of technical training on climate change and limited engagement of academic institutions.</b></li> </ul> <p>Relevant adaptation needs:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>To introduce water saving and water treatment technologies</b></li> <li><input type="checkbox"/> <b>To find solutions (and subsequently implement) for sustainable water supply in Ulaanbaatar</b></li> <li><input type="checkbox"/> <b>To enhance and improve early warning and prevention sys-</b></li> </ul>

		<p><b>tems for natural disasters</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>To conduct disaster risk assessments at local and sub-national levels</b></li> <li><input type="checkbox"/> <b>To improve forecast quality through increasing super computer capacity</b></li> <li><input type="checkbox"/> <b>To establish Doppler radar network covering entire territory of the country</b></li> </ul>
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## E. Compliance with relevant national technical standards

**Table 5:** Compliance with relevant notional technical standards

Expected concrete output/intervention	Relevant rules, regulations, standards and procedures	Compliance, procedure and authorizing offices
<p>Output 1.1.</p> <p>One (1) Ulaanbaatar Ger-Area Hazard Risk and Vulnerability Assessment (HRVA) Report</p>	<p>The project will follow the Disaster Protection Law of Mongolia renewed in 2017 and the guidance of Ulaanbaatar (UB) 2020 Master Plan and development approaches for 2030 which implemented the Mongolian law on urban development of Ministry of Construction and Urban Development (MCUD)</p>	<p>As per the Disaster Protection Law, the local governments should each have their own plan for disaster protection prepared based on risks and vulnerability assessment against disaster for the territory under their administration.</p>
<p>Output 1.2.</p> <p>Six (6) Detailed Ger-khoroo community level flood risk, exposure and vulnerability assessments reports</p>	<p>Climate change national development plan Resolution #2 specified under Phase 11- 2017-2021, the strategic objective (4): Expand climate change network, technological innovation, expand research and evaluation, and improve human resource capacity</p>	<p>The RVA shall be done by a specialized organisation with RVA license as per the rules for RVA approved by the central government.</p>
<p>Output 1.3.</p> <p>Simulation model for forecasting future impacts of climate change flooding in UB city &amp; Ger-areas established</p>		<p>The National Emergency Management Agency shall oversee the TVA implementation and reporting. During the preparation of the HRVA reports under Outputs 1.1 and 1.2, recommendations for zoning requirements on land-use zoning, sustainable environmental management and storm-water and flood management will adhere to the UB 2020 cited regulations mentioned</p> <p>The project will contribute to the indicators specified on using supercomputer to calculate future trends of climate change and climate</p>
<p>Output 2.1.</p> <p>One (1) Ulaanbaatar Ger-Area Resilience action plan</p> <p>Output 2.2.</p> <p>Six (6) Community-level High-risk Ger areas resilience action plans</p>	<p>The project will follow Disaster Protection Law of Mongolia renewed in 2017 and the guidance of Ulaanbaatar (UB) 2020 Master Plan and development approaches for 2030 which implemented the Mongolian law on urban development</p>	<p>The preparation of resilience action plans will be done as per the approved guidelines of the Government. During the preparation of Resilience action plans for (Output 2.1) Ulaanbaatar Ger areas and for (Output 2.2) Khoroo community level, recommendations for zoning requirements on land-use zoning, sustainable environmental management and storm-water and flood management will adhere to</p>



<p>Output 2.3.</p> <p>Community-Based Disaster Risk Reduction and assets protection trainings</p>	<p>Law on Disaster Protection (2013)-regulates the rights and duties of the state, local authorities, enterprises, entities and individuals in relation to disaster protection</p>	<p>the UB 2020 cited regulations mentioned</p> <p>All trainings will contribute to local disaster prevention and be undertaken in full consultation with local authorities at district and khoroo levels and city level disaster management bodies of NEMA.</p>
<p>Output 3.1.</p> <p>Physical, natural, and social assets developed or strengthened</p>	<p>The following norms and standards will be obeyed in design preparation and implementation of physical development of flood control facilities:</p> <ul style="list-style-type: none"> <li>• Norms and Standards of Settlements Planning and Implementation: BNbD 30.01.14-04</li> <li>• Methodical guidelines for comprehensive urban development assessment for a settlement development: UB 30-201-9</li> <li>• Basic Principles of Designing Works for Hydraulic Constructions: BNbD 33-01-03</li> <li>• Flood Embankment Norms and Standards: BNbD 33-07-09</li> <li>• Hydrology Parameters Estimation Norms and Standards: BNbD 2.01; BNbD 14-86, UB 1986</li> </ul>	<p>The design and implementation of flood control facilities will be done as per Mongolian building code and related rules and regulations through UN competitive procurement process.</p> <p>All adaptation infrastructure developed will follow the principles of designing hydraulic constructions</p> <p>UN-Habitat community assets and infrastructure strengthening works always follow technical compliance with SPHERE standards and are the most appropriate locally adapted models.</p>
<p>Output 4.1.</p> <p>Lessons learned and best practices regarding flood-resilient urban community development are generated</p> <p>Output 4.2.</p> <p>Trainings will be provided to city and district government officials on replication of climate-induced risk (flood) adaptation interventions and process for other vulnerable locations/hazards in Ger areas</p>	<p>Climate change national development plan Resolution #2 specified the strategic objectives (4). Expand climate change network, technological innovation, expand research and evaluation, and improve human resource capacity' and (5) Support the community to provide climate change information and support active participation in climate change activities and activities.</p>	<p>The project will contribute to the indicators specified for climate change assessments to inform adaptation policies and planning</p>

## F. Duplication with other funding sources

UN-Habitats has worked with Ger- communities in UB city on the sectors of Water Sanitation and infrastructure services as well as urban health systems strengthening, urban planning and affordable housing in partnership with the Municipality of Ulaanbaatar and other stakeholders. The agency also has regional level expertise on climate change in urban areas through its long running Cities and Climate Change Initiative (CCCI) which has been successfully implemented in multiple cities across 12 countries in Asia Pacific.

UN-Habitat is currently implementing community development projects, in some of the target Ger-areas *Bayankhoshuu* and *Selbe* sub-centres where the agency leads the key component of community mobilization and consultations for UB city and all partners for the ongoing *Ulaanbaatar Urban Services and Ger Areas Development Investment Programme of ADB*, through the establishment of Community Development Councils (CDC's) a key component of the agency's flagship *People's Process*. The agency also has prior experience implementing major WASH infrastructure projects in the other proposed locations of *Songinokhairkhan (SKhD)*.

Due to ongoing presence and good working relationships with stakeholders in these areas, the project setup and implementation of activities could begin quite smoothly with minimum delays.

**Table 6:** Duplication with other funding sources

Relevant projects/programme (incl. amount and impl agency)	Lessons learned	Complimentary potential
AF: UNDP (US\$5,5 million grant for Ecosystem-based Adaptation to Maintaining Water Security in Critical Water Catchments in Mongolia)	Project to coordinate to integrate knowledge regarding EBA(Ecosystem Based Adaptation) and integrated climate change resilience while strengthening knowledge management of national institutions and disseminating of findings.	<ul style="list-style-type: none"> <li>-document threats to ecosystem function and resilience to provide recommendations for avoiding and mitigating impacts.</li> <li>- land use and water resources monitoring and decision-making system in two eco-regions.</li> <li>-adaptation assessment and monitoring implemented in two target watersheds.</li> <li>- suite of physical measures to improve ecosystem resilience established in two target watersheds.</li> <li>-introduction of regulatory and financial management techniques</li> <li>- Institutional support for integrating climate change risks in land and water resource management planning.</li> </ul>
GEF-SCCF: IFAD (US\$1,5 million grant for Mongolia Livestock Sector Adaptation Project)	Project is focused upon developing herder productivity, including concepts such as fodder production and marketing.	-empowering poor rural population to achieve higher incomes through sustainable improvements in their livelihoods through a) Market development; b) Pasture management and c) climate change adaptation.

		<p>-focused on resource user side of climate change adaptation in market development, improved pasture management, establishment of an early warning system and disaster insurance schemes.</p>
<p>GCF, GCF Readiness: XacBank, GIZ, UNEP (US\$60 million grant for business loan programme for GHG emissions reduction, US\$300 thousand grant for support to the NDA, US\$3 million grant for further readiness project (exact details unclear)</p>	<p>Promoting the use of energy efficient and renewable energy solutions in the Mongolian MSME market.</p> <p>The MSME program will mainstream energy efficiency and renewable energy investments in the Mongolian private sector. It will do so by developing market conditions conducive to RE and EE investment, allowing it to compete alongside the traditionally cheaper, conventional, high-emission alternatives.</p>	<p>-encourages national institutions to get direct access to the Fund, with the ultimate goal to enhance country ownership and to access and allocate the fund's resources effectively.</p> <p>-aims to develop the capabilities to nominate potential implementing entities and to establish the enabling environments that will promote submission of project proposals in consistency with strategic objectives of national development policies and counter climate change programs.</p> <p>- prepare the country to act quickly, and engage with the Fund efficiently in the future.</p>
<p>WB: ADB (Ulaanbaatar city water resources management project; Economic Value of the Upper Tuul Ecosystem in Mongolia)</p>	<p>-Upper Tuul area has a high economic value and contributes to the income and marketed products in many sectors.</p> <p>-conservation is necessary as ecosystem degradation and biodiversity loss will result to costly results.</p> <p>-conservation will result to more benefits in the future.</p> <p>-local land and resource users must bear through limiting their activities to ecologically sustainable levels.</p>	<p>-developed and applied ecosystem valuation method that generates information about the economic benefits of environment conservation</p>
<p>WB: UNDP (Improving Disaster Risk Management in Mongolia; Climate change adaptation project;)</p>	<p>Policy and regulatory frameworks enable clearer roles and responsibilities for improved disaster risk reduction and management.</p> <p>Local-level disaster management mechanisms have procedures and competencies tailored for urban and rural vulnerabilities.</p> <p>Feasible local level mechanisms for disaster risk reduction and response further replicated</p>	<p>-reduced risks and consequences of natural and man-made disasters at national and community levels</p> <p>-improved sustainability of natural resources management and resilience of ecosystems and vulnerable populations to the changing climate</p> <p>-facilitated decentralized disaster management through sustainable prevention, response and coordination mechanisms, thus reducing vulnerabilities of urban and rural poor.</p>



		<p>- enhance disaster management capacities by clarifying roles and responsibilities, formalizing local-level disaster management mechanisms and applying tailored approaches for disaster prevention, preparedness and response in urban and rural settings.</p>
Asia Foundation: Securing our future : Mongolia Watershed Monitoring Network component	<p>This project generated materials related to community monitoring of water resources that will be utilized to enhance land and water resource monitoring/ planning, maintenance of ecosystem integrity and water security and to support ecosystem-based adaptation implementation.</p>	<p>-purpose of the project is to engage teachers and students, community groups, citizen and river movement advocates, and government officials in scientific data collection on river water conditions and share that information among members to improve the environment.</p> <p>-through the initiative, Mongolian teachers and citizens in target area were taught to conduct river quality monitoring.</p>
Japan Fund for Poverty Reduction, managed by the Ministry of Environment and Tourism and the Asian Development Bank : “The Project to Reduce Soil Pollution by Improving Sanitation in Ger areas”	<p>The project commenced in June 2017 and will introduce improved sanitation facilities for households in Ger districts of Chingiltei 12, 13 khoroo and Bayanzurkh 27 khoroo. In the case of Bayanzurkh, 13 people live in 1 plot and share a pit latrine which frequently overflows in warm seasons.</p> <p>The project will not only include sanitation facilities in Ger areas, it will include developing of regulations of wastewater management systems and wastewater treatment, which focus on small and medium sized enterprises and residents of Ger areas. They will work in areas of waste storage, collection, transportation, fertilizers, waste disposal and related controls.</p>	<p>At the onset of the project the 27khoroo of Bayanzurkh district experienced flooding of households living near the Selbe River due to water discharge from the four damsels of Dar-Ehi. Therefore, the Minister of Environment and Tourism (MoET), initiated a rainwater drainage project.</p> <p>This indicates the urgency and priority of addressing floods related issues vis-à-vis sanitation/drainage in Ger areas.</p> <p>UN-Habitat intends to coordinate with this project to share information and approaches and lessons during the course of project implementation; and facilitate cooperation between municipal/district authorities and the Ministry of Environment and Tourism around the issue of floods so as to generate tools/methodologies to be applied consistently across Ger-Areas with a view to supporting the MoET develop an institutional framework for floods resilience in Ger Areas.</p>

## G. Learning and knowledge management

A dedicated Component (4) addresses Awareness raising, knowledge management and communication. Whilst this provides the cornerstone for capturing and disseminating lessons learned, other project components directly contribute to knowledge management mechanisms and dissemination of lessons learned from local to national and to international levels (see table below).

Assessments at the municipal level combined with simulation modelling done and maintained with the Ministry (MoET) will foster information sharing, and allow for capacity transfer to municipal level authorities thus allowing local authorities to react strategically, with foresight, and make evidence and knowledge based decisions on climate adaptation measures and urban resilience issues.

At the local level, a participatory approach (involving communities and local authorities in planning and implementation activities) will lead to increased local knowledge on climate change adaptation, especially related to urban floods. Project demonstration sites will contribute, from the start and in an on-going way, to sharing lessons and training through local disseminators/community mobilizers. During the project implementation, Public information tools such as noticeboards, leaflets will be prepared and distributed to target communities and a re-dressal mechanism setup. Synergies will be explored with NEMA committee in the municipality for transmission of key/urgent messages to other (non-target) Ger-communities during project implementation. Community level trainings will be held on identified needs such as climate/environmental risks, hygiene education, community leadership and management. The project will also use a participatory monitoring process, which will enable the beneficiary communities to work directly with the project's M&E and Public Information officer, to highlight issues in delivery and to strengthen adaptation benefits, including in replication and sustaining the project's gains.

At the national level, the government will be able to draw from lessons learned through this project, including replication and scale-up of good practices. Information will be consolidated in reports and tools methodologies, guidelines and public information products. A direct linkage will be established, through the partnering departments of the various line ministries at the city/town level, with the ministries at the national level facilitating countrywide dissemination to other urban areas/cities/towns, informal settlements, policy-makers and civil society. All knowledge products generated will be made available on a digital format in Mongolian and English and uploaded on the Municipality of Ulaanbaatar's web portal and spatial database: <http://www.ubgeodata.mn/geocity>. The simulation model will be maintained by the Ministry of Environment and Tourism and be an on-going data-sharing and risk analysis collaboration between the Municipality of Ulaanbaatar and the Ministry.

Lessons regarding increasing the flood resilience of communities need to be captured and municipal and district level government officials trained on the best practices and knowledge products to ensure the sustainability of this project and effective replication of best practices.

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 Pacific.

At the 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 within the Urban Planning and Design Branch for consolidation of all knowledge products related to Climate Change – this will complete the cycle in linking to UN-Habitat's regional Cities and Climate change Initiative (CCCI) for Asia and the Pacific.

**Table 7:** Learning and knowledge management

Expected Concrete Outputs	Learning objectives (lo) & indicators (i)	Knowledge products
Output 1.1.	(lo): First ever Hazard Risk and Vulnerability Assessments	-One (1) Ulaanbaatar Ger-Area Hazard Risk and Vulner-

<p>One (1) Ulaanbaatar Ger-Area Hazard Risk and Vulnerability Assessment Report</p> <p>Output 1.2.</p> <p>Six (6) Detailed Ger-community level flood risk, exposure and vulnerability assessments reports</p> <p>Output 1.3.</p> <p>Simulation model for forecasting future impacts of climate change flooding in UB city &amp; Ger-areas established</p>	<p>in Ulaanbaatar Ger area as whole and detailed in specific areas will be done with consultations of all stakeholders</p> <p>(i)</p> <ul style="list-style-type: none"> <li>- Number of involved stakeholders</li> <li>- Number of risks identified</li> <li>- Number and types of vulnerability</li> <li>- Number of data types</li> </ul>	<p>ability Assessment Report</p> <p>Six (6) Detailed Ger-community level flood risk, exposure and vulnerability assessments reports</p> <p>- Documentation of Stakeholder Analysis and Mapping</p> <p>- Collected data including the evidence bases</p>
<p>Output 2.1.</p> <p>One (1) Ulaanbaatar Ger-Area Resilience action plan</p> <p>Output 2.2.</p> <p>Six (6) Community-level High-risk Ger areas resilience action plans</p> <p>Output 2.3.</p> <p>Community-Based Disaster Risk Reduction and assets protection trainings</p>	<p>(lo): First ever Resilience Action Plans in Ulaanbaatar Ger area as whole and detailed in specific areas will be done with consultations of all stakeholders</p> <p>(i)</p> <ul style="list-style-type: none"> <li>- Number of actions defined</li> <li>- Number of stakeholders to be involved</li> <li>- Number of Community resilience building actions defined</li> <li>- Number of conducted trainings</li> </ul>	<p>- One (1) Ulaanbaatar Ger-Area Resilience action plan</p> <p>Six (6) Community-level High-risk Ger areas resilience action plans</p> <p>- Documentation of consultations</p> <p>- Documentation of action planning processes</p> <p>- Documentation of training modules</p>
<p>Output 3.2.</p> <p>Physical, natural, and social assets developed or strengthened</p>	<p>(lo): Flood control facilities developed based on the comprehensive risk and vulnerability assessment and climate change impacts simulation</p> <p>(i)</p> <ul style="list-style-type: none"> <li>- Number and types of flood control facilities</li> <li>- Estimated capacity of the constructed facilities</li> </ul>	
<p>Output 4.1.</p> <p>Lessons learned and best practices regarding flood-resilient urban community development are generated</p> <p>Output 4.2.</p> <p>Trainings will be provided to city and district government officials on replication of climate-induced risk (flood) adaptation interventions and process for other vulnerable locations/hazards in Ger areas</p>	<p>(lo): Documentation of lessons learned and best practices regarding flood-resilient urban community development</p> <p>(i)</p> <ul style="list-style-type: none"> <li>- a database of lessons learned and best practices developed</li> <li>- number of trainings conducted</li> </ul>	<p>- Documentations of lessons learned and good practices</p> <p>- Documentations of training modules</p>

## H. Consultative process

This design of the project has been informed by in-depth khoroo community level consultations and district level consultations with presiding Governor's, conducted as part of a rapid needs assessment on climate vulnerability in the two target areas (6 Khoros) .

Meetings were conducted with the designated khoroo representatives and consultations were made with the 6 Khoros communities including the most vulnerable groups; disabled, elderly, informal people, indigenous people, and recent migrants.

Demographic and technical information were collected around the following categories (1) Beneficiary Information (2) Climate change impacts, barriers for adaptation, possible interventions (3) Strengthened Institutional capacity (4) Health issues around climate change (5) Urban development and housing (6) Physical infrastructure (7) Water resources and sanitation (8) Waste and waste infrastructure (9) Natural assets for protection, rehabilitation and (10) Improved policies regulations. (10) A community vulnerability and risk map was also developed as part of the consultation .The full details of the Rapid Settlements Needs Assessments are attached as Annex 1,2 to the concept proposal.

Preliminary discussions were held with city officials working in the areas of hydrology, meteorology and pollution, waste management to understand the urban climate context and supporting policy environment as well as most pressing adaptation needs; and with the head of the Mayor's office to understand recent initiatives of UB City on climate change, and their position on the greatest risks and most urgent needs, for which UN-Habitat support and expertise is needed.

UN-Habitat has been a longstanding partner for the Municipality of Ulaanbaatar and the agencies expertise in dealing with Ger communities and ability to implement upgrading and adaptation projects on a significant scale recognized and valued by all partners. A list of UN-Habitat projects interventions in Ger settlements in Ulaanbaatar, are included in Annex 4.

**Table 8:** Consultations and Meetings with key stakeholders

Stakeholder, incl. role/function	Consultation objective	Outcome	Conclusion
Climate Change Research Department, Hydrology and Meteorology Institute, Ministry of Environment and Tourism (MoET)  Dates: 19-25 Apr 2017	Discuss the climate change adaptation and mitigation context for Mongolia and UB city	The focus so far was found to be on national level climate change adaptation. The need for urban policies on climate change and more information and data at city level  A simulation model would be extremely useful for forecasting risks and will be an entry point for MOET and local government cooperation for real-time data sharing and further replication of the initiative for other areas. City officials require capacity building. Public Education and Awareness on climate and resilience in Ger areas very low	Agreed on the need for city level climate risk and impact assessment particular focus on Ger-areas necessary, including increasing Public Education and Awareness on climate and capacity building
Working group for Waste Management Law revision  Ministry of Environment	Discuss the climate change adaptation and mitigation context for	Team briefed on the results of their assessment of country and UB city current situation of waste management	Agreed to work further to discover more needs of CC adaptation in UB Ger areas and exchanged



and Tourism (MoET)  Dates: 19-25 April 2017	Mongolia and UB city	and suggested some of sanitation and waste management issues as potential interventions under the scope of CC adaptation	some of ideas and existing data.
Ulaanbaatar City Governor's office  Dates: 4 May 2017  One of its responsibilities is UB city engineering preparedness for any disaster and operation and maintenance of engineering infrastructure including flood and drainage facilities	Explore their interest in the area of urban resilience and climate change adaptation for Ger Areas	Of the areas of air pollution, waste management, water resource management and flooding which are most impacted by Climate Change, the Mayor's office prioritized the issue of floods resilience as the key priority that requires international support. The UB city flood risk management strategy documents (FRMS) were shared and support was requested for adaptation on flood risks in Ger areas.	UN-Habitat agrees to focus on the thematic area of floods resilience in line with agencies prior work in the sectors and in Ger areas, and building on the recent flood risk assessment and management strategy developed by the city government.
Songinokhairkhan District – 24, 25 and 7 <sup>th</sup> Khoroo Governors, officials and Communities (6)  Dates: 20-21 July 2017	Meetings with the Khoroo Governors in the Ger-areas designated as most at risk as per UB city FRMS to confirm their urgent needs and interest in partnering in project	All Governors confirmed increased and frequent flooding and shared information on high risk areas. Governors provided their local authority teams to supply access and any information required by UN-Habitat team leader and community mobilizers. <sup>20</sup>	Consensus to be a target location for climate change adaptation and floods resilience
Sukhbaatar District 12, 13 and 16 <sup>th</sup> Khoroo Governors, Officials and Communities (see table below)  Dates: 24-25 July 2017	Meetings with representative and communities including the most vulnerable groups; disabled, elderly, informal people, indigenous people, and migrants	Communities were very responsive and participated in the UN-Habitat rapid needs assessments - See Annex 1, 2 for the results from Rapid Settlements Needs Assessment	Target communities are highly vulnerable and require assets strengthening for adaptation to floods and management of water resources, as well as for air quality improvement, waste management, and water sanitation infrastructure.
Bayanzurkh District, 9 <sup>th</sup> Khoroo Governor, Officials and Communities  Dates: 25 July 2017	Meetings with representative and communities including the most vulnerable groups; disabled, elderly, informal people, indigenous people, and migrants	Communities were very responsive and participated in the UN-Habitat rapid needs assessments - See Annex 1, 2 for the results from Rapid Settlements Needs Assessment	Target communities are highly vulnerable and require assets strengthening for adaptation to floods and management of water resources, as well as for air quality improvement, waste management, and water sanitation infrastructure.

**Please refer to Annex 3 for list of district office governors and officials surveyed/met for and during Rapid Assessments**

20 An additional Governor from Khoroo 25 (a newly established settlement) was not ready to partner on the initiative as they cited they did not experience flood impacts. Khoroo 25 is located upstream and outfall flows down to other Khoros from this location

For the preparation of the full proposal, the findings of the needs assessment will be shared with city officials and concerned technical departments for their insights and technical feedback on most appropriate adaptation measures; building on the needs and requests as identified by the target communities and district officials. The UN-Habitat community mobilization team will return to target communities, where possible with participation from UB city mayors office technical staff, for the purpose of making a preliminary selection of interventions with communities with consideration of adaptation benefits, costs and environmental and social impacts and risks

## I. Justification

The proposed project components, outcomes and outputs fully align with national and local government/institutional priorities and gaps identified, with identified community and vulnerable groups needs and with the Adaptation Fund outcomes as stated will be stated in the Adaptation Fund results framework at the full proposal stage. 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 Mongolia's and Ulaanbaatar's current climate change response. The project aims to maximizing the funding amount for the concrete adaptation component (component 3); funding allocation to the other (softer) components is required for complementarity/support for component 3 and sustainability and quality assurance of the project. 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.

**Table 9:** Overview of impact of AF funding compared to no funding (baseline) related to expected project outcomes

Outcomes/planned activities	Baseline (without AF)	Additional (with AF)	Comment and alternative adaptation scenario's
Outcome 1.1.  Relevant threat and hazard information / evidence and recommendations for reducing vulnerability at the municipal and community level generated	Detailed/specific climate change threat and hazard information / evidence is not available for Ulaanbaatar, which means the government and communities can't plan for adaptation / resilience measures	The activities related to this outcome will allow the municipal government of Ulaanbaatar and communities to collect information to start planning for adaptation / resilience measures, especially related to floods, also besides and /or beyond the project	Without relevant threat and hazard information / evidence and recommendations for increasing resilience, especially at the community level, interventions will not be appropriate.  The government lacks the capacity and financial resources to execute activities related to this outcome without support
Outcome 2.1.  Target community members are aware of climate change impacts and participate in resilience action planning activities	Ulaanbaatar municipality and communities can't plan for adaptation / resilience measures without effective planning processes based on activities executed under outcome 1.1.	The activities related to this outcome will allow the municipal government of Ulaanbaatar and communities to plan for adaptation / resilience measures, especially related to floods.	The municipal government and communities lack the capacity to organize communities and plan effectively for adaptation / resilience.  Without capacity development trainings and workshops planning for adaptation / resilience measures will risk inefficiency and the selection of interventions that are not appropriate
Outcome 3.1. Increased adaptive capacity within relev-	Target communities have no options (capacity and financial	The activities related to this outcome will allow target communiti-	Large scale interventions have the risk of not being community driven and appropriate,

ant development and natural resource sectors at the community level	resources) to protect their people and assets against climate change impacts, especially floods	esto protect inhabitants and assets against climate change impacts, especially floods	which would lead to adaptation benefits for fewer people with the same project cost and a greater chance of negative social and environmental impacts.  Alternative adaptation scenarios are resettlement or construction of more structural buildings (e.g. flats), which are both not in line with needs of the communities and are more costly.
Outcome 4.1.  Project implementation is fully transparent. All stakeholders are informed of products and results and have access to these for replication	Communities and the municipal and national government have limited knowledge of resilient planning and protection of towns, communities and assets	Communities and the municipal and national government have increased knowledge of resilient planning and protection of towns, communities and assets	Communities and the municipal and national government need to develop their own capacity and knowledge products related to resilient urban development, especially in response to floods.  Without activities related to outcome 4.1. there is a risk that interventions won't be replicated and sustained

## J. Sustainability

The project sees that the main way to sustain the achievement of the project in the long run is by linking the adaptation initiatives and lessons to the establishment of an institutional framework, which supports the community-led climate resilience building and its further replication.

By fully engaging settlement households in project activities, including assessments, the development of plans/ strategies and monitoring, the project aims to achieve building of communities' awareness and capacities and furthermore ownership and leadership in the area of disaster management and urban resilience at community level. The establishment of CDC's through the People's Process has also been a demonstrated success as a cornerstone for community governance which has continued to function long after the end of the project, for the maintenance and management of the strengthened social and physical infrastructure assets produced by this project, and in future, around the needs and priorities as defined by communities themselves.

Investing in increasing the resilience of vulnerable physical, natural, and social assets and ecosystems is a sustainable economic approach. It will not only avoid future costs related to climate change and disaster impacts but it will also enhance livelihood options, improve the health and security of the community.

The city and community level resilience, recovery and upgrading plans will also be considerate of the environment, including for instance the protection of ecosystems or the reduction of waste production to ensure environmental sustainability.

Information on how to maintain and sustain proposed priority interventions will be included in the full project proposal.

## K. Environmental and social impacts and risks

**Table 10:** Overview of the environmental and social impacts and risks identified

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
<i>Compliance with the Law</i>	X (see section E)	
<i>Access and Equity</i>		X
<i>Marginalized and Vulnerable Groups</i>		X
<i>Human Rights</i>		X
<i>Gender Equity and Women's Empowerment</i>		X
<i>Core Labour Rights</i>		X
<i>Indigenous Peoples</i>		X
<i>Involuntary Resettlement</i>		X
<i>Protection of Natural Habitats</i>		X
<i>Conservation of Biological Diversity</i>		X
<i>Climate Change</i>		X
<i>Pollution Prevention and Resource Efficiency</i>		X
<i>Public Health</i>		X
<i>Physical and Cultural Heritage</i>		X
<i>Lands and Soil Conservation</i>		X

The proposed project seeks to fully align with the Adaptation Fund's Environmental and Social Policy (ESP). Outlined below is a brief description of the initial analysis that has been carried out to evaluate environmental and social impacts and risks of the project, and areas where further assessment is needed.

Activities under Component 1, component 2 and component 4 are all soft activities. According to the Adaptation Fund's Environmental and Social Policy, "Those projects/programmes with no adverse environmental or social impacts should be categorized as Category C<sup>21</sup>." No environmental and social impacts, whether direct, indirect, transboundary or cumulative are envisaged to arrive as a result of any of the soft activities under Components 1, 2 and 4. Despite this, however, steps will be taken to ensure that no negative environmental or social impacts can occur.

The activities under Component 3 are 'hard/concrete' interventions, and as such some activities have the potential, without an environmental and social safeguarding system, including mitigation measures, to create negative environmental and social impacts. However, by limiting the scope / size of interventions, none of the to-be-proposed interventions should fall in Category A of the Adaptation Fund's impact classification, which leaves a classification of Category B or C.

The scope /size of interventions will be limited by ensuring that proposed interventions will be numerous, small scale and very localized, and managed by communities where possible, who have a stake in avoiding environmental and social impacts. This means that the potential for direct negative impacts is small and localized, that there can be few indirect impacts, and that transboundary impacts are highly unlikely. Given this, cumulative impacts are also unlikely.

21 <sup>21</sup> Adaptation Fund Environmental and Social Policy, paragraph 28, Page 8



Community consultations planned for the development of the full proposal will entail:

- ☐ Identification of issues, concerns and needs in communities, especially related to flood risks
- ☐ Identification of possible 'hard' adaptation / resilience interventions to respond to these issues, concerns and needs
- ☐ First screening of environmental and social impacts and risks of these interventions

An environmental and social risks management plan will also be included in the full proposal document.

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

### A. Record of endorsement on behalf of the government<sup>22</sup>

Mr. Batjargal Zamba Special Envoy for Climate Ministry of Environment and Tourism of Mongolia Government Building-2, United Nations Street 5/2 Ulaanbaatar Tel: 976-7000 0743 Fax: 976-11-310743 e-mail: zbatjargal@mne.gov.mn	Date: <i>August 4, 2017</i>
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<sup>22</sup> 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.



**MINISTRY OF ENVIRONMENT,  
AND TOURISM**

**ENVIRONMENT AND CLIMATE FUND**

7th floor, 22 building, Amar street, 8th micro-district,  
Sukhbaatar district, Ulaanbaatar, Mongolia  
Tel: (976-11) 310753, Fax: (976-11) 310743  
E-mail: [contact@ncf.mn](mailto:contact@ncf.mn), <http://www.ncf.mn>

Date 2017.08.04 No 115

**To: The Adaptation Fund Board Secretariat**

c/o Global Environment Facility Secretariat  
1818H Street, NW, MSN P-4-400  
Washington DC, United State of America  
Email: [secretariate@adaptation-fund.org](mailto:secretariate@adaptation-fund.org)  
Fax: +1 2025223240/5

**Subject: Endorsement for: "Flood Resilience in Ulaanbaatar Ger Areas (FRUGA) -  
Adaptation through community-driven small-scale protective and basic-services  
interventions**

**Dear Sir/Madam,**

In my capacity as National Focal Point for the UNFCCC of Mongolia, I confirm that the above national project is in accordance with the government's national priorities in implementing adaptation activities to reduce the adverse impacts and risks posed by climate change in Mongolia. Accordingly, I am pleased to endorse the above project proposal for support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat) and executed by the Ministry of Environment and Tourism, the Municipality of Ulaanbaatar (MUB) and Ger-Communities within Songinokhairkhan, Bayanzurkh and Sukhbaatar Districts of Ulaanbaatar. Several other line ministries/departments, district and sub-district (khoroo) authorities and non-governmental organization will also be involved in the implementation of this project.

The project concept note builds on the national, municipal and district level strategies and priorities which seek to address key and urgent climate change adaptation requirements being faced by vulnerable Ger-communities in Ulaanbaatar. To this end, following consultation with key stakeholders, in-depth rapid needs assessments were conducted across 3 priority districts and 7 sub-district (khoroo) communities, to support the project development process. These most-vulnerable communities in high-risk areas were identified together with the Mayor's office and municipal authorities; in support of the urgent thematic priorities identified in close consultation with Ministry of Environment and Tourism and key national government entities.

In addition to being fully aligned with the Ulaanbaatar 2020 Master Plan and Development Directions for 2030 as well as the Ulaanbaatar Floods Risk Management Strategy 2015; the project proposal aims to support the implementation of commitments in the Mongolia National Action Programme on Climate Change (Phase II - 2017-2021); the National Green Development Policy (2014-2030) and the Intended Nationally Determined Contributions (INDC) to the 2015 Agreement under the United Nations Framework Convention on Climate Change (UNFCCC). My Ministry is grateful for the direct support in this regard. I sincerely hope that this proposal will be considered favorably by the Adaptation Fund. Yours sincerely,

Dr. Zamba BATJARGAL

Special Envoy for Climate Change,

Ministry of Environment and Tourism, Mongolia

**Record of endorsement on behalf of the government**      *here:*  
*key national executing entity:*

T. Gantumor Governor's Office of Ulaanbaatar City Municipality 1560 Khangarld Palace TS Jigjidav-9 street бага тоiruu-3 Chingeltei district Ulaanbataar Mongolia	Date: <i>August 4, 2017</i>
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**GOVERNOR'S OFFICE  
OF ULAANBAATAR CITY MUNICIPALITY**

15160 khangarid palace Ts.Jigijav-9 street bagatoruu-3  
Chingeltei district Ulaanbaatar MONGOLIA  
Tel/Fax: (976-11) 31-53-47  
<http://www.ubservice.mn>

**THE ADAPTATION FUND  
BOARD SECRETARIAT**

Date 04.08.2017  
Ref 01/1613

Endorsement for: "Flood Resilience  
in Ulaanbaatar Ger Areas  
(FRUGA) - Adaptation through  
community-driven small-scale  
protective and basic-services  
interventions

Dear Sir/Madam,

In my capacity as General Manager and Head of Governor's Office of Ulaanbaatar City, I confirm that the above national project is in accordance with the government's national priorities as well as Ulaanbaatar city governments' priorities in implementing adaptation activities to reduce the adverse impacts and risks posed by climate change in Mongolia.

Accordingly, I am pleased to endorse the above project proposal for support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat) and executed by the Ministry of Environment and Tourism, the Municipality of Ulaanbaatar (MUB) and Ger-Communities within Songinkhairkhan, Bayanzurkh and Sukhbaatar Districts of Ulaanbaatar. Several other line ministries/departments, district and sub-district (khoroo) authorities and non-governmental organization will also be involved in the implementation of this project.

The project concept note builds on the national, municipal and district level strategies and priorities which seek to address key and urgent climate change adaptation requirements being faced by vulnerable Ger-communities in Ulaanbaatar. To this end, following consultation with key stakeholders, in-depth rapid needs assessments were conducted across 3 priority districts and 7 sub-district (khoroo) communities, to support the project development process. These most-vulnerable communities in high-risk areas were identified together with the Governor's office and municipal authorities; in support of the urgent thematic priorities identified in close consultation with Ministry of Environment and Tourism and key national government entities.

The proposal aims to support the implementation of the Ulaanbaatar 2020 Master Plan and Development Directions for 2030 as well as the Ulaanbaatar Floods Risk Management Strategy 2015. In addition, the proposal is fully aligned with commitments in the Mongolia National Action Programme on Climate Change (Phase II

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- 2017-2021); the National Green Development Policy (2014-2030) and the Intended Nationally Determined Contributions (INDC) to the 2015 Agreement under the United Nations Framework Convention on Climate Change (UNFCCC).

The Municipality is grateful for the direct support in this regard.

I sincerely hope that this proposal will be considered favorably by the Adaptation Fund.

YOURS SINCERELY,

GENERAL MANAGER AND HEAD OF  
GOVERNOR'S OFFICE OF ULAANBAATAR  
CITY  GANTUMUR

**B.**

**Implementing Entity certification**

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans including Mongolia's National Development Strategy, Second National Communication under the UN-FCCC, National Climate Risk Management Strategy, National Green Development Policy and Action Plan (2015), Ulaanbaatar Master Plan 2030, and the Flood Risk Management Strategy of Ulaanbaatar City, and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme 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 this project/programme.

*For Rongling*

*Rafael Tuts*  
Director, Programme Division  
UN-Habitat

Date: August 2, 2017

Tel.: +254-20-762-3726

Email: raf.tuts@unhabitat.org

Project Contact Person: Nadine Waheed, Human Settlements Officer,  
Regional Office for Asia and the Pacific

Tel.: +81-92-724-7121

Email: Nadine.Waheed@unhabitat.org

# Annex 1

## RAPID SETTLEMENT NEEDS SURVEY

BUILDING URBAN CLIMATE RESILIENCE  
UN-HABITAT - ADAPTATION FUND  
SUKHBAATAR and BAYANZURKH DISTRICTS

### 1. Beneficiaries

No.	Municipality/ District	Ulaanbaatar			
	Name of community	Sukhbaatar			Bayanzurkh
		12 Khoroo	13 Khoroo	16 Khoroo	9 Khoroo
1	Total population	7,268	9,119	11,945	13,766
2	Number of Female	-	4,568	6,128	7,023
3	# of< age 14	2,114	2,572	3,697	2,355
4	# of age 15-24	1,013	1,351	1,664	2,149
5	# of age 25-60	3,741	4,694	5,826	6697
6	# of> age 60	400	447	758	670
7	# of disabled population	213	239	288	724
8	# of indigenous people	-	-	-	-
9	# of immigrants	518	40	179	194
10	# of informal people	276	76	100	95
11	# of households	2,189	2,522	3,127	3,,785
12	Poverty rate (percent)	657households(30percent)	180 households(7percent)	396 households (13percent)	572 households (15percent)
13	How many people will benefit from the following proposed interventions in the community:				
	Physical / structural interventions (specify what is relevant): - Drainage canals in most vulnerable areas - Improved (eco) pit latrines - Construction of fence around dams	50percent	75percent	50percent	95percent



	- Tree plantation (through involvement of school children)				
	Trainings	30percent	90percent	30percent	90percent
	Communication	60percent	90percent	40percent	90percent
	Information - including: Analysis of catchment area (rather than political boundaries) to study flood control measures needs	50percent	90percent	50percent	90percent
14	Are there early warning systems in place covering different types of hazards (e.g. floods, cyclones, storms, droughts, etc.)	- information is posted on khoroo office Facebook page	- kheseg leaders go around houses to deliver communicate warnings	- no public warning system at khoroo level - district office has public warning system installed (loud speaker)	- written warning is given by khoroo and kheseg leaders to households located in areas which could be affected by flood
15	Existence of drainage system	No drainage canal but one dam (770m)		No drainage canal but 1 earth dam with no concrete coating	
16	Existence of sewage system	No central sewage system		Only 10 business facilities are connected to the central system	No central sewage system
17	Existence of different groups (ethnic, women, elderly, disabled, youth) who are treated differently. If so, how?	518 Chinese immigrants get welfare from the government but do not participate in election	No	No	No
		Elderly receive pension and disabled receive monthly allowance (equivalent to minimum wage)			
18	Participation of women in decision-making process. If no, why?	High participation	High participation	High participation	High participation
19	Main livelihoods / sources of income in community?	Government and private sector employment; running small business (shops, restaurants, repair and maintenance services)			
		Few households have kitchen garden	Some residents have part time employment in construction material shop / market area		Some have household level production (felt making, sewing, etc.)
20	Main environmental problems <b>(Choose Top 3)</b> 1) River flooding 2) Surface Flooding (rainwater) 3) River Bank Erosion (soil disappearing) 4) Inland erosion 5) Pollution (dirty air, dirty water, dirty	2. some houses are built in swampy, unsafe areas (basin way blocking natural flow of water) - houses and streets flooded in 2006 5. air pollution during	2. water is collected in the streets during rain, flood  5. soil pollution from lack of proper disposal of grey	2. surface flooding of roads and compounds (no reported flood issue for past 2 years)  5. air pollution during winter from burning coal	2. surface flooding of roads and compounds  5. air pollution from burning of garbage

	soil) 6) Rubbish (waste management) 7) Drainage (e.g. blocked drains) 8) Sanitation (problems with toilet) 9) Decline in forest areas 10) Plant Disease 11) Insects or bugs (flies, mosquitoes) 12) agriculture sustainability	winter from burning coal for heating - soil pollution due to lack of waste disposal 6. garbage floats from neighboring district(Chingiltei) 8. pit latrines are often dug 1 meter frombecause of hard surface filling up and overflowing	water and pit latrines - air pollution during winter from burning coal for heating  8. pit latrines are often overflowing	for heating  8. pit latrines are often overflowing - ground elevated due to frozen soil	- air pollution during winter from burning coal for heating 6. waste from hospital and from waste disposal center comes to the area due to lack of proper dis- posal 8. pit latrines are often overflowing
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## 2. Climate change - impacts, barriers for adaptation and possible interventions analysis

No.	Municipality/ District	Name of community	Most problematic climatic hazard	Effects on the community	Factors stopping your community from coping with current impacts	Possible resilience building interventions identified
1	Ulaanbaatar	SB 12 khoroo	<ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring and when it rains (also grey water)</li> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating</li> <li>- soil pollution due to lack of waste disposal</li> <li>- dam situated in the middle of the khoroo is highly polluted because some households and construction companies dispose waste in it</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to health for the people</li> <li>- households are prone to diseases due to waste disposal surrounding dam areas</li> </ul>	<ul style="list-style-type: none"> <li>- mostkhoroo / international agency projects are not addressing resident's health issues</li> <li>- a community project of 4 household sharing one toilet was introduced but could not be implemented due to financial issues</li> <li>- surveillance camera is installed and operated by the police. Police and khoroo office's cooperation is weak in surveillance of garbage disposal</li> <li>- top down process of policies</li> </ul>	<ul style="list-style-type: none"> <li>- residents are more likely to solve such problems within small groups</li> <li>- introduction of improved pit latrines and shared latrines</li> <li>- plant trees around the dam and in community plots</li> <li>- fence the dam area to prevent people from throwing trash</li> <li>- install street lights and surveillance camera</li> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster preparedness, etc.</li> </ul>
2		SB 13 khoroo	<ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring and when it rains (also grey water)</li> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating (and burning of tires and construction materials)</li> <li>- soil pollution due to lack of waste disposal</li> <li>- flooding especially after rain</li> <li>- dam is highly polluted</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to health for the people</li> <li>- households are prone to diseases due to waste disposal surrounding dam areas</li> </ul>	<ul style="list-style-type: none"> <li>- financial difficulty</li> <li>- khoroo does not have independent budget for flood control</li> <li>- no incentive or community for those who try to clean the area</li> <li>- residents try to fix canals but lack professional know how</li> <li>- 5 people are in charge of cleaning the khoroo for small salary but it is not stable as cleaning happens only before important events or national holidays</li> </ul>	<ul style="list-style-type: none"> <li>- residents are more likely to solve such problems within small groups</li> <li>- introduction of improved pit latrines and shared latrines</li> <li>- plant trees around the dam and in community plots</li> <li>- fence the dam area to prevent people throwing trash</li> <li>- street lights, surveillance camera</li> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster preparedness, etc.</li> </ul>

			because some households and construction companies dispose waste			
3		SB 16 khoroo	<ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring and when it rains (also grey water)</li> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating (and burning of tires and construction materials)</li> <li>- as the waste recycle center is located on top of the ridge, waste and burnt materials comes down to the residential areas</li> <li>- lack proper disposal of hospital waste</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to health for the people</li> <li>- households are prone to diseases due to waste disposal surrounding dam areas</li> </ul>	<ul style="list-style-type: none"> <li>- financial difficulties for the khoroo</li> <li>- electricity bills become burden for households</li> </ul>	<ul style="list-style-type: none"> <li>- sewerage canals need to be built and connected to central connection</li> <li>- electric heating system needs to be introduced</li> <li>- residents are more likely to solve such problems within small groups</li> <li>- introduction of improved pit latrines and shared latrines</li> <li>- plant trees around the dam and in community plots</li> <li>- fence the dam area to prevent people throwing trash</li> <li>- street lights, surveillance camera</li> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster preparedness, etc.</li> </ul>
4		BZ 9 khoroo	<ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring and when it rains (also grey water)</li> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to health for the people</li> <li>- due to waste disposal in the dam areas surrounding households are prone to dis-</li> </ul>	<ul style="list-style-type: none"> <li>- financial problems for khoroo</li> </ul>	<ul style="list-style-type: none"> <li>- concrete existing earth dam, connect through pipe, road in swampy areas</li> <li>- residents want to move or improve Tsagaandavaa recycle center (waste disposal)</li> <li>- redevelop bus stop, connect public amenities to central water and sewage system</li> <li>- residents are more likely to</li> </ul>



			- lack of proper waste disposal from the hospital - as the final bus stop is located here and as there are no public toilets, people void in the open polluting the area	eases		solve such problems within small groups - introduction of improved pit latrines and shared latrines - plant trees around the dam area and in community plots - fence the dam area to prevent people throwing trash - street lights, surveillance camera - use proper chemical for waste disposal - community awareness about waste disposal, hand washing, disaster preparedness,
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### 3. Strengthened institutional capacity

No.	Municipality/ District Name of community	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9Khoroo
1	Is there a community plan for hazard risk reduction/ climate change adaptation?	Yes	Yes	Yes	Yes
2	Have there been any training on risk reduction and resilience?	Training provided once by district office	Training provided by World Vision 3 times last year	Training provided once by district office	Training provided by State Emergency Department
3	Is there a municipal CC and resilience plan incorporated into planning schemes?	Yes	Yes	Yes	Yes
4	Is there any community level awareness of exposure to at least one key hazard?	Yes	Yes	Yes	Yes
		Insufficient	Insufficient 10-30 people participated in last training session which happened in the streets where people are most likely to meet	- insufficient awareness of flood. - written warnings are provided only to households who could be affected - earthquake training has been regularly provided	Insufficient

### 4. Health issues related to climate change

No.	Municipality/ District
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	Name of community	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9Khoroo
1	# of households to report an occupant with diarrhea in last 3 months in this settlement	5 people	1 person 3 suffered from dysentery	6 people	5 people
2	# of households to report an occupant with malaria/ dengue last year	No	No	No	No
3	Existence of drainage issues that may give rise to mosquito borne diseases	No	No	No	No
4	Main health problems/ issues	- infections due to lack of awareness about hand washing (hand and mouth diseases) - diarrhea, infectious disease, respiratory disease, chickenpox			

### 5. Urban development and housing

No.	Municipality/ District				
	Name of community	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9Khoroo
1	Is this community organised /built according to an urban plan? (or is this settlement considered informal?)	Informal settlement There is a community group of 6 people in each kheseg to manage community issues.	Informal settlement There is a community group of 20 people in each kheseg to manage community issues.	Informal settlement No group	Informal settlement There is community group to manage redevelopment issues
2	# of dwellings with 'average' or 'poor' quality walls	Mostly poor (>2000)	Mostly poor (>2400)	Mostly poor (>3100)	Mostly poor (>3780)
3	# of overcrowded dwellings	Mostly dense settlement	Mostly dense settlement except for swampy areas	Old areas are dense settlements Newer settlements are not dense	As this is newer settlement the settlement is not dense
4	# of dwellings destroyed by last hazard	0	- 28 households near Nogoontalbai were affected by flood last year - toilet water overflowed in most plots	- 1 affected by flood - 10 houses in river valleys affected	- 60th street basin overflowed and 162 household were in state of emergency during flood (as listed by the State Emergency Department)

### 6. Physical infrastructure

No.	Municipality/ District				
	Name of community	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9 Khoroo

1	Are the streets and roads in this settlement planned and paved?	- all improved except 2 streets	- some are graveled (only temporary improvement)	- 3 streets improved with gravel but as the streets got elevated, plots become lower and water comes through the slopes into the plots	- onepaved street
				- as the area is located on the ridge slope roads are particularly difficult during winter season	
2	How many schools are there in this settlement? Are they built in a resilient manner?	no kindergarten	1 kindergarten 1 planned (200 children)	no kindergarten	1 kindergarten (250 children)
3	How many hospitals/ health posts are there in this settlement? Are they built in a resilient manner?	1 community health center	1 community health center	1 community health center 1 nursing home	1 community health center 1 hospital
4	Are the necessary protective infrastructures in place (e.g. dams, walls) to reduce impact of flooding, storms, etc. in this community?	No drainage canal but one dam (770m)		No drainage canal but 1 earth dam with no concrete coating	
5	Does this settlement have an operational drainage system? Is it sufficient to drain precipitation and avoid flooding?	No	1 canal but insufficient	No	No

## 7. Water resources and sanitation

No.	Municipality/ District	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9 Khoroo
	Name of community				
1	# of households with toilet	1000 pit latrines	1569 pit latrines	2200 pit latrines	1081 pit latrines
2	percent of households using following types of toilets: 1) Shared community toilet 2) Share neighbors 3) Connected to septic tank 4) Straight pipe 5) Connected to town sewerage system	100percent pit latrines	- 1 public toilet - 10 houses connected to sewerage network	- 5 public toilets (for 50 households)	- 4 public toilets - 12 public facilities have septic tanks (kindergarten, khoroo office) and 4 households
3	Average type of toilet: 1) Water seal 2) Flush 3) Pit	100percent pit latrines	100percent pit latrines	- 95percent pit latrines	95percent pit latrines

3	# of households with toilet discharging directly into the environment (unimproved pit toilet or straight pipe to sea/river/etc.)	0	0	0	0
3	How to dispose of used toilets? a) Take out to throw away b) Suction out c) Bury and dig new one	- bury and dig new ones	- bury and dig new ones - few households who can afford use suction	- bury and dig new ones	- bury and dig new ones - few houses use chemicals to dissolve
4	Main water resource	- 4 water kiosk sell / provide water to the community (water trucked) - 1 water kisok connected to central system	- 4 water kiosk sell / provide water to the community (water trucked) - 3 water kisok connected to central system	- 6 water kiosk sell / provide water to the community (water trucked) - 3 ground wells - 4 water kisok connected to central system	- 14 water kiosk sell / provide water to the community (water trucked)
5	# of households that own (not shared) formal water connection with meter	0	0	0	0



### 8. Waste and waste infrastructure

No.	Municipality/ District				
	Name of community	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9 Khoroo
1	Existence of regular waste collection by council or private organization	One private service company (Devshil) collects waste every day		One private service company (Suzuki Yume) collect waste every day	Public services company(No. 3) collects waste every day
2	# of households to dispose waste in river, creek, or sea	Few households dispose waste in the dam Construction waste is not collected by the service providers so is disposed in public places (dam)			
3	# of households to burn or bury waste	0			

### 9. Natural assets protected or rehabilitated

No.	Municipality/ District				
	Name of community	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9 Khoroo
1	Does this community report issues with pollution/ environmental degradation (e.g. forest or mangroves)? And how many people affected (livelihoods)	0	Reports that waste thrown in the dams affecting air quality	Some reports about waste disposal issues	- issues reported with hospital waste disposal - issues reported with Tsagaandavaa recycle center – to move the center to a new place
2	Has any step been taken in this community to improve/ maintain/ reduce impacts on natural assets? If not, why?	0	Have cleaned some parts of the dam	No.	- residents submit their reports to the office while office sends it to municipality but no actions are taken – office has given small salary to those who cleaned the mountain area where garbage comes from recycle center

**10. Improved policies & regulations**

No.	Municipality/ District	Sukhbaatar 12 Khoroo	Sukhbaatar 13 Khoroo	Sukhbaatar 16 Khoroo	Bayanzurkh 9 Khoroo
	Name of community				
1	Does the city / community has the necessary building regulations for resilient development? Are they enforced properly in this community?	No	No	No	No
2	Has any policy been introduced or adjusted to address climate change in the community?	No	No	No	No

**11. Community vulnerability and risk map**

1. Community map showing flooded area  
Khoroo 12 Sukhbaatar District



2. Community map showing flooded area  
Khoroo 13 Sukhbaatar District



3. Community map showing flooded area  
Khoroo 16 Sukhbaatar District

4. Community map showing flooded area  
Khoroo 9 Bayanzurkh District



Overview table

Communi-	Population / ben-	Main climate	Effects on commu-	Underlying vul-	Barriers to adapt	Resilience building in-
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ties / ward	eficiaries	change impacts / Hazards	nities	nerability		terventions identified
SB 12 khoroo	3,450	<p>Floods, extremely cold winters</p> <ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring and when it rains (also grey water)</li> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating</li> <li>- soil pollution due to lack of waste disposal</li> <li>- dam situated in the middle of the khoroo is highly polluted because some households and construction companies dispose waste in it</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to health for the people</li> <li>- households are prone to diseases due to waste disposal surrounding dam areas</li> </ul>	<ul style="list-style-type: none"> <li>- informal settlement</li> <li>- high un/under employment,</li> <li>- little access to basic services (water, sanitation)</li> </ul>	<ul style="list-style-type: none"> <li>- dependency on coal for cooking and heating particularly during winter</li> <li>- poor or non existent drainage</li> <li>- lack of central sewerage system to dispose grey water and for connecting latrines</li> <li>- lack of awareness and empowerment to respond to risks</li> <li>- mostkhoroo /international agency projects are not addressing resident's health issues</li> <li>- a community project of 4 household sharing one toilet was introduced but could not be implemented due to financial issues</li> <li>- surveillance camera is installed and operated by the police. Police and khoroo office's cooperation is weak in surveillance of garbage disposal</li> <li>- top down process of policies</li> </ul>	<ul style="list-style-type: none"> <li>- residents are more likely to solve such problems within small groups</li> <li>- introduction of improved pit latrines and shared latrines</li> <li>- plant trees around the dam and in community plots</li> <li>- fence the dam area to prevent people from throwing trash</li> <li>- install street lights and surveillance camera</li> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster preparedness, etc.</li> </ul>
SB 13 khoroo	7,860	<p>Floods, extremely cold winters</p> <ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to</li> </ul>	<ul style="list-style-type: none"> <li>- informal settlement</li> <li>- high un/under employment,</li> <li>- little access to basic services (water, sanitation)</li> </ul>	<ul style="list-style-type: none"> <li>- dependency on coal for cooking and heating particularly during winter</li> <li>- poor or non existent drainage</li> <li>- lack of central sewerage system to dispose grey water and for connecting latrines</li> <li>- lack of awareness and em-</li> </ul>	<ul style="list-style-type: none"> <li>- residents are more likely to solve such problems within small groups</li> <li>- introduction of improved pit latrines and shared latrines</li> <li>- plant trees around the dam and in community plots</li> </ul>



		<p>and when it rains (also grey water)</p> <ul style="list-style-type: none"> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating (and burning of tires and construction materials)</li> <li>- soil pollution due to lack of waste disposal</li> <li>- flooding especially after rain</li> <li>- dam is highly polluted because some households and construction companies dispose waste</li> </ul>	<p>health for the people</p> <ul style="list-style-type: none"> <li>- households are prone to diseases due to waste disposal surrounding dam areas</li> </ul>		<p>powerment to respond to risks</p> <ul style="list-style-type: none"> <li>- financial difficulty</li> <li>- khoroo does not have independent budget for flood control</li> <li>- no incentive or community for those who try to clean the area</li> <li>- residents try to fix canals but lack professional know how</li> <li>- 5 people are in charge of cleaning the khoroo for small salary but it is not stable as cleaning happens only before important events or national holidays</li> </ul>	<ul style="list-style-type: none"> <li>- fence the dam area to prevent people throwing trash</li> <li>- street lights, surveillance camera</li> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster preparedness, etc.</li> </ul>
SB 16 khoroo	5,100	<p>Floods, extremely cold winters</p> <ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring and when it rains (also grey water)</li> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating (and burning of tires)</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to health for the people</li> <li>- households are prone to diseases due to waste disposal surrounding dam areas</li> </ul>	<ul style="list-style-type: none"> <li>- informal settlement</li> <li>- high un/under employment,</li> <li>- little access to basic services (water, sanitation)</li> </ul>	<ul style="list-style-type: none"> <li>- dependency on coal for cooking and heating particularly during winter</li> <li>- poor or non existent drainage</li> <li>- lack of central sewerage system to dispose grey water and for connecting latrines</li> <li>- lack of awareness and empowerment to respond to risks</li> <li>- financial difficulties for the residents</li> <li>- electricity bills become burden for families</li> </ul>	<ul style="list-style-type: none"> <li>- sewerage canals need to be built and connected to central connection</li> <li>- electric heating system needs to be introduced</li> <li>- residents are more likely to solve such problems within small groups</li> <li>- introduction of improved pit latrines and shared latrines</li> <li>- plant trees around the dam and in community plots</li> <li>- fence the dam area to prevent people throwing trash</li> <li>- street lights, surveil-</li> </ul>

		<p>and construction materials)</p> <ul style="list-style-type: none"> <li>- as the waste recycle center is located on top of the ridge, waste and burnt materials comes down to the residential areas</li> <li>- lack proper disposal of hospital waste</li> </ul>				<p>lance camera</p> <ul style="list-style-type: none"> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster preparedness, etc.</li> </ul>
BZ 9 khoroo	12,400	<p>Floods, extremely cold winters</p> <ul style="list-style-type: none"> <li>- cannot dig pit latrines below 1 meter therefore they overflow frequently particularly during spring and when it rains (also grey water)</li> <li>- air pollution is particularly accumulated in this area during winter from burning coal for heating</li> <li>- lack of proper waste disposal from the hospital</li> <li>- as the final bus stop is located here and as there are no public toilets, people void in the open polluting the area</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard to health for the people</li> <li>- due to waste disposal in the dam areas surrounding households are prone to diseases</li> </ul>	<ul style="list-style-type: none"> <li>- informal settlement</li> <li>- high un/under employment,</li> <li>- little access to basic services (water, sanitation)</li> </ul>	<ul style="list-style-type: none"> <li>- dependency on coal for cooking and heating particularly during winter</li> <li>- poor or non existent drainage</li> <li>- lack of central sewerage system to dispose grey water and for connecting latrines</li> <li>- lack of awareness and empowerment to respond to risks</li> <li>- financial problems for khoroo</li> </ul>	<ul style="list-style-type: none"> <li>- concrete existing earth dam, connect through pipe, road in swampy areas</li> <li>- residents want to move or improve Tsagaandavaa recycle center (waste disposal)</li> <li>- redevelop bus stop, connect public amenities to central water and sewage system</li> <li>- introduction of improved pit latrines and shared latrines</li> <li>- plant trees around the dam area and in community plots</li> <li>- fence the dam area to prevent people throwing trash</li> <li>- street lights, surveillance camera</li> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster</li> </ul>

						preparedness
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# Annex 2

## RAPID SETTLEMENT NEEDS SURVEY

BUILDING URBAN CLIMATE RESILIENCE

UN-HABITAT - ADAPTATION FUND

BAYANKHOSHUU SUB-CENTER Songinokhairkhan District

### 1. Beneficiaries

No.	Municipality/ District	Songinokhairkhan		
	Name of community			
		7 Khoroo	24 Khoroo	25 Khoroo
1	Total population	20,128	13,689	13,680
2	Number of Female	10,259	7,145	7,082
3	# of< age 14	6,241	931	-
4	# of age 15-24	2,752	936	-
5	# of age 25-60	9,931	445	-
6	# of> age 60	775	706	-
7	# of disabled population	254	45	-
8	# of indigenous people	-	-	-
9	# of immigrants	-	689	342
10	# of informal people	-	690	-
11	# of households	5,510	4,040	3,481
12	Poverty rate (percent)	3,019 households (15percent)	958 households (7percent)	5,472 households (40percent)
13	How many people will benefit from the following proposed interventions in the community:			
	Physical/ structural interventions (specify what is relevant): - Drainage canals in most vulnerable areas - Improved (eco) pit latrines - Construction of fence around dams Tree plantation (through involvement of school children)	75percent	50percent	10percent
	Trainings	50percent	60percent	25percent

	Communication	90percent	70percent	30percent
	Information	80percent	60percent	40percent
14	Are there early warning systems in place covering different types of hazards (e.g. floods, cyclones, storms, droughts, etc.)	No	No	No
15	Existence of drainage system	1 narrow drainage canal exists near Mon Laabut insufficient because it overflows due to blockage by garbage	No	No
16	Existence of sewage system	No	No	No
17	Existence of different groups (ethnic, women, elderly, disabled, youth) who are treated differently. If so, how?	No	Some households have religious and political difference	No
		Elderly receive pension and disabled receive monthly allowance (equivalent to minimum wage)		
18	Participation of women in decision-making process. If no, why?	Highparticipation	Moderate participation	High participation
19	Main livelihoods / sources of income in community?		- garbage collecting	-kitchen gardening - some have household level production (felt making, sewing, etc).
		-seasonal part time jobs		
		- government allowance (child support) - government and private sector employment; running small business (shops, restaurants, repair and maintenance services)		
20	Main environmental problems <b><u>(Choose Top 3)</u></b> 1) River flooding 2) Surface Flooding (rainwater) 3) River Bank Erosion (soil disappearing) 4) Inland erosion 5) Pollution (dirty air, dirty water, dirty soil) 6) Rubbish (waste management) 7) Drainage (e.g. blocked drains) 8) Sanitation (problems with toilet) 9) Decline in forest areas 10) Plant Disease 11) Insects or bugs (flies, mosquitoes)	2. waste water from other neighboring areas and ceramic industry waste water is collected in this khoroo  5. air pollution during winter from burning coal for heating  6. due to narrow flood canal garbage floats into streets and household plots  8. frozen pit latrine melts and overflows on to the streets and plots in spring/summer times affecting the	2. on the west side of this khoroo river valleys are common so ground water comes up and overflows flooding the area with garbage 5. air pollution during winter from burning coal for heating  8. on the east side of the khoroo the area is rocky mountainous so it is difficult to dig beneath 1.5m for pit latrines - due to strong winds and storms Ger houses and fences collapse	- thekhoroo is relatively new settlement so no particular problems reported yet  5. air pollution during winter from burning coal for heating



	12) agriculture sustainability	environment		
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## 2. Climate change - impacts, barriers for adaptation and possible interventions analysis

No.	Municipality/ District	Name of community	Most problematic climatic hazard	Effects on the community	Factors stopping your community from coping with current impacts	Possible resilience building interventions identified
1	Ulaanbaatar	7 khoroo	<ul style="list-style-type: none"> <li>- unclean environment: garbage floats due to flood water</li> <li>- air pollution during winter from burning coal for heating</li> <li>- cannot dig pit latrines below 1.5 meter therefore overflow during spring and during flooding</li> <li>- people feel that the weather is getting warmer and air quality is too dry</li> <li>- flood water coming from khoroo 24 (and also khoroo 25 and 8) create water logging in this khoroo.</li> <li>- waste from ceramic industry in khoroo 8 also comes to this khoroo</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- air pollution during winter is a perennial hazard</li> <li>- streets and roads are not pedestrian friendly</li> </ul>	<ul style="list-style-type: none"> <li>- financial difficulty for khoroo</li> <li>- residents lack knowledge to fix canals</li> <li>- dependency on coal for cooking and heating particularly during winter</li> <li>- poor or non existent drainage</li> <li>- lack of central sewerage system to dispose grey water and for connecting latrines</li> <li>- lack of awareness and empowerment to respond to risks</li> </ul>	<ul style="list-style-type: none"> <li>- introduction of improved pit latrines and shared latrines</li> <li>- to plant trees around the dam area and in community plots</li> <li>- use proper chemical for waste disposal</li> <li>- community awareness about waste disposal, hand washing, disaster preparedness, etc.</li> </ul>
2		24 khoroo	<ul style="list-style-type: none"> <li>- air pollution during winter from burning coal for heating</li> <li>- strong wind and storm</li> <li>- soil pollution due to lack of waste disposal</li> <li>- dry dusty environment</li> <li>- warmer weather</li> </ul>	<ul style="list-style-type: none"> <li>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</li> <li>- diarrhea and other infectious disease are caused by soil contamination</li> <li>- children and elderlies suffer from heatstroke</li> <li>- Ger houses, fences and private properties collapse due to strong wind and wind-storm endangering people's lives</li> </ul>	<ul style="list-style-type: none"> <li>- dependency on coal for cooking and heating particularly during winter</li> <li>- poor or non existent drainage</li> <li>- lack of central sewerage system to dispose grey water and for connecting latrines</li> <li>- lack of awareness and empowerment to respond to risks</li> </ul>	<ul style="list-style-type: none"> <li>- plant trees and create green spaces</li> <li>- plant trees in dusty streets and in individual compounds</li> <li>- build waste recycling facility</li> <li>- promote use of improved toilet (ADB project has built one community improved toilet for 20 household.</li> </ul>

3		25 khoroo	Few	Few	-	-
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### 3. Strengthened institutional capacity

No.	Municipality/ District				
	Name of community	7 Khoroo	24 Khoroo	25 Khoroo	
1	Is there a community plan for hazard risk reduction/ climate change adaptation?	No	In process	No	
2	Have there been any training on risk reduction and resilience?	Certain amount of information is given by the khoroo but insufficient and ineffective	- training is provided once a year by the district office. - State Emergency Department provided 2 training sessions in spring and fall seasons (annually)	Training provided by khoroo for over 400 residents	
3	Is there a municipal CC and resilience plan incorporated into planning schemes?	Not clearly incorporated	Yes	Unknown	
4	Is there any community level awareness of exposure to at least one key hazard?	Very few residents have information and conscience	Not likely	Yes	

#### 4. Health issues related to climate change

No.	Municipality/ District			
	Name of community	7 Khoroo	24 Khoroo	25 Khoroo
1	# of households to report an occupant with diarrhea in last 3 months in this settlement	- 50 percent of children aged 0-5 years suffers from diarrhea resulting from lack of proper hygiene practices - respiratory infectious disease is increasing due to air pollution	- heatstroke particularly for children and elders as there are no shades in the area - children suffers from diarrhea resulting from lack of proper hygiene practices	- not many reports
2	# of households to report an occupant with malaria/ dengue last year	Respiratory diseases due to allergic reactions	Due to sever dryness, skin disease allergy asthma and throat disease	-
3	Existence of drainage issues that may give rise to mosquito borne diseases	No	Few reports of mosquito and mites bites.	-
4	Main health problems/ issues	- cardiovascular disease and hypertension - malfunction of stomach, liver (for all ages)	- cardiovascular disease and blood pressure increase - heatstroke - lack of health care trainings	-
		- infections due to lack of awareness about hand washing (hand and mouth diseases) - diarrhea, infectious disease, respiratory disease, chickenpox, allergic reactions		

#### 5. Urban development and housing

No.	Municipality/ District			
	Name of community	7 Khoroo	24 Khoroo	25 Khoroo
1	Is this community organised /built according to an urban plan? (or Is this settlement considered informal?)	Informal settlement  No group	Informal settlement  There is one Red Cross community group for disaster relief purpose	Informal settlement  No group
2	# of dwellings with 'average' or 'poor' quality walls	Mostly average (>5500)	Mostly average (>4000)	Mostly average (>3400)
3	# of overcrowded dwellings	Mostly dense settlement	Not dense settlement	Not dense settlement
4	# of dwellings destroyed by last hazard	28 households affected by flood 78 household apartment basement affected by flood cutting off electricity	5 Ger houses and fences collapsed due to strong wind and storm in 2016 30 cars drowned in flood when concrete bridge collapsed in 2000	No

## 6. Physical infrastructure

No.	Municipality/ District			
	Name of Community	7 Khoroo	24 Khoroo	25 Khoroo
1	Are the streets and roads in this settlement planned and paved?	No	3,5m asphalt road planned in the main road 2,7m dirt road improved for even surface	No
2	How many schools are there in this settlement? Are they built in a resilient manner?	1 school 3 kindergarten	2 school 2 kindergarten	1 school 1 kindergarten
3	How many hospitals/health posts are there in this settlement? Are they built in a resilient manner?	1 community health center	1 community health center	1 community health center
4	Are the necessary protective infrastructures in place (e.g. dams, walls) to reduce impact of flooding, storms, etc. in this community?	No	No  Need to build dam by the Baruun Salaa Bridge and canals are needed along the riverside	-
5	Does this settlement have an operational drainage system? Is it sufficient to drain precipitation and avoid flooding?	No	Flood canal was recently built near School No. 128	-

## 7. Water resources and sanitation

No.	Municipality/ District			
	Name of Community	7 Khoroo	24 Khoroo	25 Khoroo
1	# of households with toilet	2204	1616	1392
2	percent of households using following types of toilets: 1) Shared community toilet 2) Share neighbors 3) Connected to septic tank 4) Straight pipe 5) Connected to town sewerage system	- 86 households in public housing with shared community toilet  20 percent apartment complex "Khilchin hothon" is connected to sewerage network 78 percent pit latrines	- 2 public toilets  -10 households in "Erhchuluu hothon" apartment complex is connected to sewerage system  90 percent pit latrines	- 100percent pit latrines
3	Average type of toilet: 1) Water seal 2) Flush 3) Pit	78percent pit latrines	90percent pit latrines	100percent pit latrines
4	# of households with toilet discharging directly into the environment (unimproved pit toilet or straight pipe to sea/river/etc.)	0	1000 household is in the swampy areas of 7th and 9th kheseg. Their pit latrines might be affecting the waterway.	-
5	Main water resource	- 4 water kiosk sell / provide water to the community (water trucked) - 12ground wells	- 1 water kiosk sell / provide water to the community (water trucked) -24 ground wells	- 3 water kiosk sell / provide water to the community (water trucked) -19 ground wells
6	How to dispose of used toilets? - Take out to throw away - Suction out - Bury and dig new one	Bury and dig new one		
7	# of households that own (not shared) formal water connection with meter	22percent	10percent	0

## 8. Waste and waste infrastructure

No.	Municipality/ District			
	Name of Community	7 Khoroo	24 Khoroo	25 Khoroo
1	Existence of regular waste collection by council or private organization	Yes	Yes	Yes
		Municipality urban service company is responsible for waste collecting and waste management but since it is a public service company, the service is insufficient and ineffective.		
2	# of households to dispose waste in river, creek, or sea	Only when garbage disposal service has not come on time		-
3	# of households to burn or bury	551 households (burns tires, clothing,	130 households	-



	waste	shoes etc.)		
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### 9. Natural assets protected or rehabilitated

No.	Municipality/ District			
	Name of community	7 Khoroo	24 Khoroo	25 Khoroo
1	Does this community report issues with pollution/ environmental degradation (e.g. forest or mangroves)? And how many people affected (livelihoods)	-waste and pollution due to flood -streets are not pedestrian friendly	0	0
2	Has any steps been taken in this community to improve/ maintain/ reduce impacts on natural assets? If not, why?	- the water inside the flooded plot was pumped by the State Emergency Department. - kheseg leaders work to pump waters from residents' plots - residents want to take action, but it can not be implemented because of financial problems.	- provided Ger house to 12 households affected by the strong wind-storm - build pit latrines for 40 households that did not have toilets - distribute trees to 300 households to prevent dryness and dust	- distributed trees to 100 households to prevent dryness and dust

### 10. Improved policies & regulations

No.	Municipality/ District			
	Name of community	7 Khoroo	24 Khoroo	25 Khoroo
1	Does the city / community has the necessary building regulations for resilient development? Are they enforced properly in this community?	Yes but implementation is low	Yes	Unknown
2	Has any policy been introduced or adjusted to address climate change in the community?	In khoroo and district level	No	-

### 11. Community vulnerability and risk map

1. Community map showing flooded area  
Khoroo 24, 25 Songinokhairkhan District

2. Community map showing flooded area  
Khoroo 7 Songinokhairkhan District



Overview table

Barriers to adapt	Resilience building interventions identified
<p>al difficulty for khoroo its lack knowledge to fix</p> <p>lency on coal for cook- heating particularly vinter</p> <p>r non existent drainage central sewerage sys- ispose grey water and ecting latrines</p> <p>awareness and empow- o respond to risks</p>	<p>- introduction of improved pit la- trines and shared latrines</p> <p>- plant trees around the dam and in commu- nity plots</p> <p>- use proper chemical for waste disposal</p> <p>- community awareness about waste disposal, hand washing, disaster prepared- ness, etc.</p>
<p>24 khoroo</p> <p>25 khoroo</p>	<p>8,200</p> <p>3,500</p> <p>- air pollution during winter from burning coal for heating</p> <p>- strong wind and storm</p> <p>- soil pollution due to lack of waste dis-</p> <p>- toilet waste and grey water freezes during the winter then melts during spring leading to pollution</p> <p>- diarrheaaand other</p> <p>- informal settlement</p> <p>- high un/under em- ployment,</p> <p>- little access to basic services (water, sanita- tion)</p> <p>- dependency on coal for cook- ing and heating particularly during winter</p> <p>- poor or non existent drainage</p> <p>- lack of central sewerage sys- tem to dispose grey water and for connecting latrines</p> <p>- plant trees and create green spa- ces</p> <p>- plant trees in dusty streets and in individual compounds</p>

		positional - dry dusty environment - warmer weather	infectious diseases are caused by soil contamination - children and elderly suffer from heatstroke - German houses, fences and private properties collapse due to strong wind and windstorm endangering people's lives		- lack of awareness and empowerment to respond to risks	- build waste recycling facility - promote use of improved toilet - community awareness about waste disposal, hand washing, disaster preparedness, etc  (ADB project has built one community improved toilet for 20 households.)
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# Annex 3

## List of district office governors and officials surveyed during Rapid Assessments

No.	District	Khoroo	Position	Name	Contact
1	Sukhbaatar	12	Khoroo Governor	Dolgormaa	96653039
			Social worker	Amarjargal	96002645
			Community health center	Conver	96653039
2		13	Khoroo Governor	Bayar-Erdenee	96002645
			Manager	Tuvshin	91887211
			Community health center	Sankol	11358005
3		16	Khoroo Governor	Erdenesukh	99114391
			Manager	Khajidmaa	88067766
			Community health center	Mandam	11358006
4	Bayanzurkh	9	Khoroo Governor	Gankhuyag	99242399
			Manager	Tuul	99249666
			Community health center	Enkh-enerel	93230393
5	Songinokhairkhan	7	Khoroo Governor	Oyunchimeg	99985044
			Manager	Nyambayar	99828898
			2 <sup>th</sup> kheseg leader	Uranchimeg	95117443
			7 <sup>th</sup> kheseg leader	Badamkhand	89827779
			9 <sup>th</sup> kheseg leader	Dorjmaa	88552710
			10 <sup>th</sup> kheseg leader	Munkhtsetseg	99173749
			11 <sup>th</sup> kheseg leader	Altangerel	88246226
6		24	Khoroo Governor	Tumurbaatar	93130024
			Manager	Tsend-Ayush	88071143
			Community council representative	Myagmardorj	88896952
7		25	Khoroo Governor	Batchuluun	99196740
			Manager	Sevjidsuren	89918808
			Social worker	Otgonchimeg	88405861

# Annex 4

## UN-Habitat projects list – Interventions in Ulaanbaatar, Mongolia

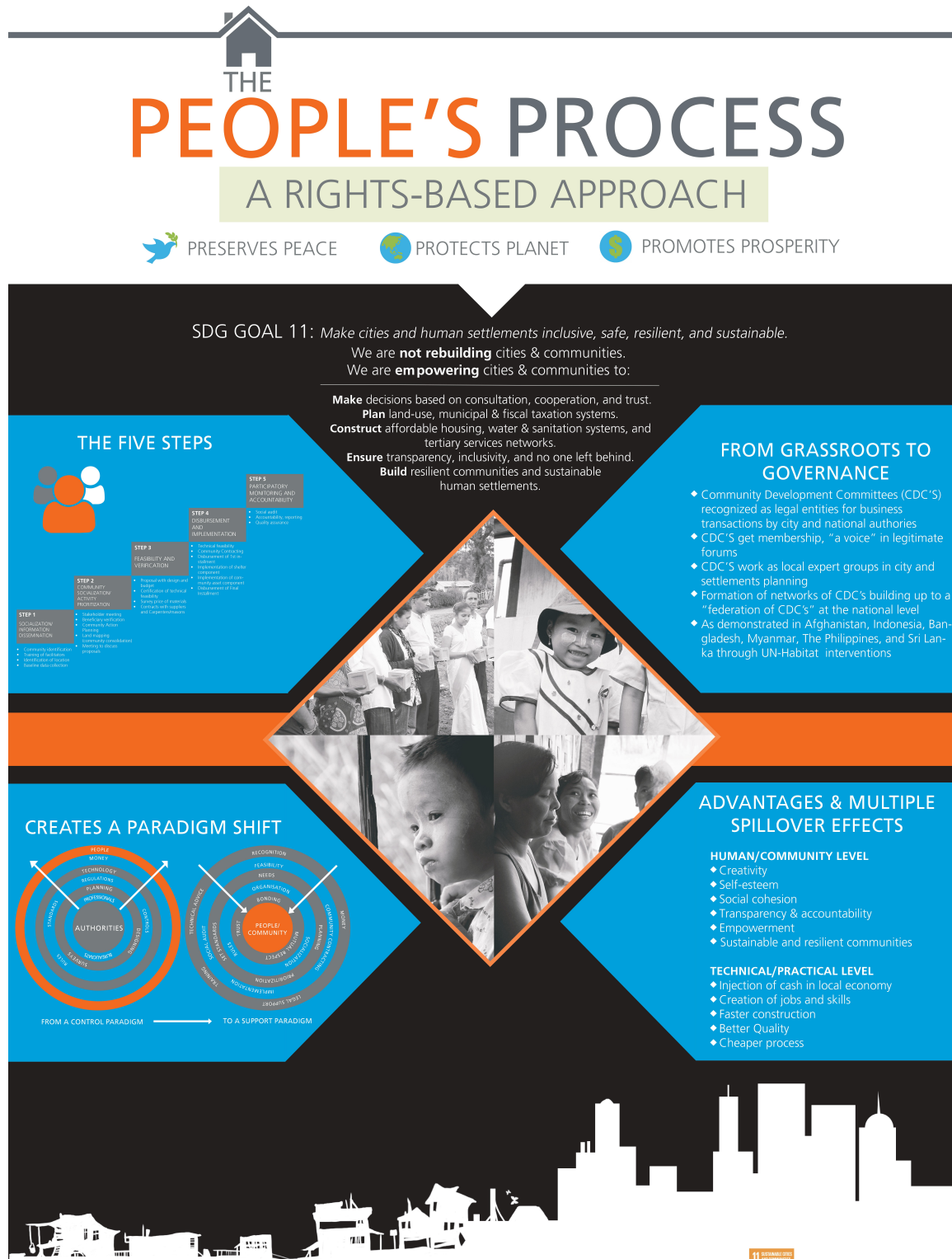
Project	Objective	Donor	Implementing	Cities/
Managing Cities in Asia- Ulaanbaatar: Urban Renewal and Affordable Housing 2016-2017	This is ADB PPTA for a project development on improved housing conditions in Ulaanbaatar ger areas. The project outcome will be the establishment of replicable, sustainable, and comprehensive solutions for affordable housing and ger areas redevelopment. UN-Habitat is supporting the ADB in participatory concept and methodology development of affordable housing and urban renewal	Asian Development Bank (ADB)	Municipality of Ulaanbaatar City (MUB)	Ulaanbaatar City
Community Engagement and Small and Medium Enterprises Development under the ADB Ulaanbaatar Urban Services and Ger Areas Development Investment Program, Mongolia 2015-2018	The objectives of the project are to enhance residents' quality of life, to ensure that communities are fully involved in and benefit from the redevelopment process of the sub-center, and to generate employment in selected Ger areas.	Municipality of Ulaanbaatar City (MUB)	Municipality of Ulaanbaatar city, Asian Development Bank	Ulaanbaatar City
Community Engagement for Slum Upgrading within the Health System Strategy in Songinokhairkhan District, Ulaanbaatar, Mongolia, 2015	The main expected results of UN-Habitat's support to project is that the communities in the Ger settlements of the Songinokhairkhan district are actively and meaningfully engaged in the implementation of the Strategy of Health System Strengthening.	World Health Organization (WHO)	Songinokhairkhan District Governor's Office, District Health Center, WHO	Songinokhairkhan District, Ulaanbaatar City
Guidelines for Participatory Urban Development in Ulaanbaatar City 2013-2014	This project aims to establish written guidelines on the process of community mobilization, organization, and strengthening which can be readily available reference materials for the staff and officials of MUB and districts responsible for Ger area projects implementation. This project will likewise train the key focal community leaders who will serve as trainers from the 9 districts of Ulaanbaatar to establish the foundation of strong community organizations which can develop and manage projects using the community-led and participatory approach.	Municipality of Ulaanbaatar City	Governor's Office of Ulaanbaatar City	Ulaanbaatar City
Community Engagement Support to Public-Private Partnership in New Ger Area Redevelopment in Ulaanbaatar City 2013-2015	This community engagement component will facilitate the community engagement in the MCUD-funded project to ensure that the design and plans of the infrastructure projects are according to needs of the residents, that issues especially pertaining to making land available for the project are adequately discussed and resolved within the community.	Mongol Diving LLC	Ministry of Construction and Urban Development (MCUD) – Municipality of Ulaanbaatar ATMOR LLC/ Mongolia Diving Company; Community groups	Ulaanbaatar City
Ulaanbaatar Urban Services And Ger Areas Development Investment Programme (Ulaanbaatar Urban Renewal Community Participation) 2012-2014	This is ADB PPTA for a Multi Facility Funding Programme development on Ger area Development and Investment Programme. UN-Habitat supported the PPTA in participatory planning of the required basic and social infrastructures in the selected areas.	Asian Development Bank (ADB)	Municipality of Ulaanbaatar	Ulaanbaatar City
Citywide Pro-poor "Ger Upgrading	The overall objective of the project is to prepare a Citywide Pro-poor "Ger-area Upgrading Strategy and	Cities Alliance	Municipality of Ulaanbaatar	Ulaanbaatar



Strategy and Investment Plan" (GUSIP) 2006-2010	Investment Plan" (GUSIP) for Ulaanbaatar through a structured consultative process, involving public sector agencies, Duureg (District) and Khoroo (Sub-District) Councils, Ger-area communities, private sector agencies, civil society organizations and non-governmental organizations.			City
Community-Led Ger Area Upgrading in Ulaanbaatar City 2009-2013	The overall objective of the Project was to improve the quality of life of selected ger area communities through community-led upgrading by empowering the communities through mobilization and organization. The Project builds on the ongoing urban development and strategic planning efforts in Ulaanbaatar City.	JICA	Municipality of Ulaanbaatar	Ulaanbaatar City

# Annex 5

## UN-Habitat People's Process Benefits Poster



# Annex 6

## UN-Habitat People's Process Impacts Brochure

### Origin of the People's Process

During the early 1980s, UN-Habitat worked with the Government of Sri Lanka to pioneer a community engagement philosophy that placed the communities at the heart of their own development – this philosophy would later become the cornerstone of UN-Habitat's community development programmes in urban and rural environments.

During that time, the municipality of Colombo integrated the People's Process into its own development agenda and operationalized over 1500 Community Development Committees (CDCs) to work with local government for implementation of a large-scale housing programme. This was the first example of the People's Process being adopted by government.

### Fundamental principles

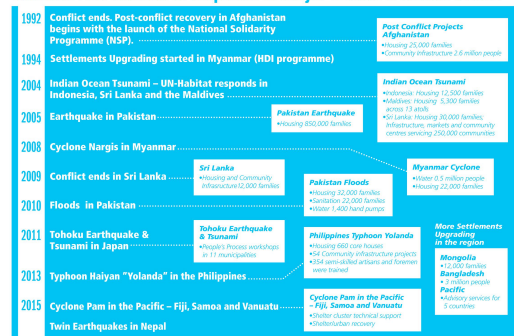
The People's Process brings about a paradigm shift moving from a model of control by authorities to one of support to people – this is done through a participatory community development methodology built around 5 steps



### Multiple spillover effects

The People's Process achieves sustainability by combining technology with local knowledge. Moreover interventions are cheaper (approximately 30% more value for money), enhances the local economy, unlocks potential for local entrepreneurial opportunities, and national construction standards are familiarized to local artisans through training. The approach also ensures human rights through inclusivity and sustainability through a low environmental footprint.

### Timeline : UN-Habitat in response to major events & critical issues



### UN-Habitat Regional Office for Asia and the Pacific (ROAP)

ACROSS Fukuroku Building, 8th Floor, 1-1-1 Tenjin, Chuo-ku, Fukuoka 810-0001, Japan  
Tel: (81-92) 724-7121 Fax: (81-92) 724-7124 E-mail: [habitat.fukuoka@unhabitat.org](mailto:habitat.fukuoka@unhabitat.org) Website: <http://www.fukuoka.unhabitat.org/>

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## 35 YEARS OF PEOPLE AT THE HEART OF THEIR OWN DEVELOPMENT

The People's Process: From Grassroots to Governance



Representatives of a Community Development Committee (CDC) that worked to develop and construct the first women's park in a province of Afghanistan. *Rehabilitation Afghanistan*



## People's Process

A structural framework that places people's needs and their rights at the heart of urban development

