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## **REPORT OF THE PORTFOLIO MONITORING MISSIONS IN TURKMENISTAN AND GEORGIA**

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## ACRONYMS AND ABBREVIATIONS

Aimag	Province (Turkmenistan)
AF	Adaptation Fund
Daikhan	Farmer (Turkmenistan)
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ELKANA	The Biological Farming Association of Georgia
EMA	Emergency Management Agency
EPLR	State Committee on Environmental Protection and Land Resources (Turkmenistan)
Etap	Administrative Unit below the Welayat (Turkmenistan)
EU	European Union
EWS	Early Warning System
GIS	Geographic Information System
GoG	Government of Georgia
GoT	Government of Turkmenistan
MoENRP	Ministry of Environment and Natural Resources Protection of Georgia
MRDI	Ministry of Regional Development and Infrastructure of Georgia
MTR	Mid-Term Review
NEA	National Environment Agency (Georgia)
RRB	Rioni River Basin
RTA	Regional Technical Adviser
Sardob	Underground water storage (Turkmenistan)
SLM	Sustainable Land Management
TE	Terminal Evaluation
VCA	Vulnerability and Capacity Assessments
Welayat	Political-Administrative Unit (Turkmenistan)
WUA	Water User Association
WUG	Water User Group

## INTRODUCTION

### Context and scope of the mission

1. As part of the Knowledge Management (KM) Strategy and the secretariat's work plan for FY17 which was approved by the Adaptation Fund Board (the Board) at its twenty-seventh meeting (Decision B.27/33), the Adaptation Fund Board secretariat (the secretariat) conducts missions to projects/programmes under implementation to collect and analyze lessons learned through its portfolio. So far, such missions have been conducted in Ecuador, Senegal, Honduras, Nicaragua, Jamaica, Argentina, Uruguay, Mongolia, and Egypt. This report covers the FY17 joint portfolio monitoring mission that took place in from June 5<sup>th</sup> to June 9<sup>th</sup> 2017 for the project "Addressing Climate Change Risks to Farming Systems in Turkmenistan at National and Community Level" implemented by United Nations Development Programme (UNDP) in Turkmenistan and executed by the State Committee on Environmental Protection and Land Resources, and from 12<sup>th</sup> to June 16<sup>th</sup> 2017 for the project "Developing Climate Resilient Flood and Flash Flood Management Practices to Protect Vulnerable Communities of Georgia" implemented by UNDP and executed by the Ministry of Environment, through the National Environment Agency, in Georgia.

2. The mission has targeted these two projects for the following reasons:

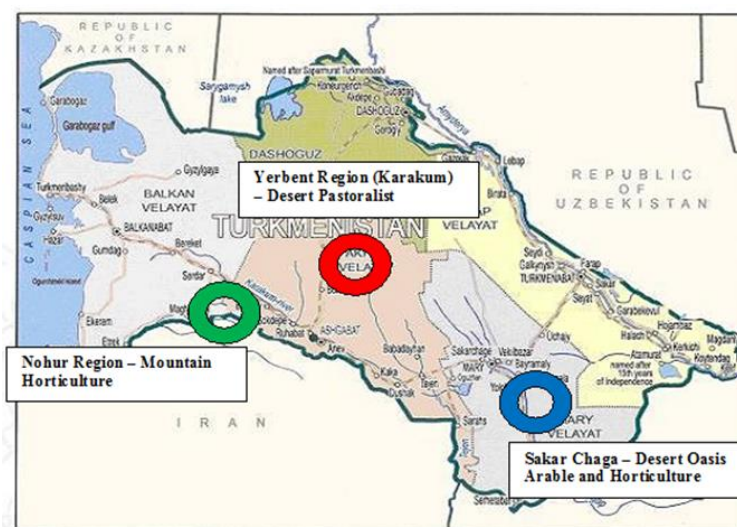
- a) Both projects were undergoing their last months of implementation (at the time of this report both projects had been finalized). This will help consolidate lessons on a number of community-based adaptation options under various agro-climatic conditions in Turkmenistan and on a basin-wide view to flood risk to understand and respond to the critical processes that lead to flooding within the river basins in Georgia;
- b) Both projects, besides targeting different ecosystems, developed and/or strengthened mechanisms to monitor climate change variability and impacts for better decision making and planning;
- c) The adaptation measures proposed in both projects, combined policy, early warning and concrete adaptation actions. The mission looked at how these measures have been identified, the approaches taken by the two projects to engage local communities, and to build stakeholder ownership, as well as the technical challenges faced, and the steps taken to ensure the sustainability of projects' outcomes.

3. In Turkmenistan, the secretariat was represented by the manager (for part of the mission), and two other representatives, whereas the mission team in Georgia was composed by the manager and one representative of the Secretariat. The methodology used for the monitoring missions comprised qualitative semi-structured interviews with key stakeholders from local government, non-government entities, ministries and the UNDP Turkmenistan and Georgia country offices. The mission visited project sites in two of the three target regions in Turkmenistan, notably Nohur and Karakum Provinces (called *aimag*). In Georgia, the mission representatives visited projects' sites in Samtredia, Tskhaltubo, Ambrolauri and Oni municipalities, part of the Rioni river basin. A set of guiding questions had been prepared for both missions and can be found in Annex 1. These questions covered also the aforementioned objectives.

## Project Context and Progress to Date in Turkmenistan

### Context

4. Turkmenistan is among the countries that are highly vulnerable to the effects of climate change, experiencing difficulties mainly in the fields of agriculture, water resources, public health and natural ecosystems. Water availability and supply are likely to suffer from increasing shortages due to elevated temperatures<sup>1</sup>, overall climate aridification and competition for water arising from regional trans-boundary water issues. Furthermore, Turkmenistan reliance on agriculture as a source of both income and food, renders the country particularly vulnerable to these climate change impacts. In 1995 the country ratified the UNFCCC and Kyoto Protocol. The first, second and third National Communications were prepared, and the National Strategy on Climate Change was approved in 2013. The Adaptation Fund (AF) project was a useful base from which various activities were extrapolated. A map of the country including the project locations is provided in Map 1 below.



Map 1: Project pilot locations in Turkmenistan

5. The project “Addressing climate change risks to farming systems in Turkmenistan at national and community level” conceptual background stems from the Sustainable Land Management (SLM) project funded by the Global Environmental Facility (GEF), and the German Agency for International Cooperation (GIZ), that served as the basis for consultation in the development of the AF proposal. The AF **project’s objective** is to strengthen water management practices at both local and national levels in response to climate change-induced water scarcity risks that are increasingly affecting farming systems in Turkmenistan. The project aimed at achieving this, through these components:

- Policy and Institutional Capacity Strengthening;
- Community based adaptation initiatives;
- Communal management systems for water delivery.

### Project main achievements

<sup>1</sup> According to Uzhydromet, water will decrease by 50% in 2050.

6. The project was approved by the Adaptation Fund Board in June 2011, and the agreement was signed by UNDP in September 2011. The inception workshop was held on 22 May 2012 and marked the commencement of the project implementation. The project finalized in August 2017, and a final evaluation report by UNDP was received on 18 August. The original expected duration of the project was three years; To date, the Board has transferred the total amount of USD 2,929,500 or 100% of the amount approved for the project. The project's implementation progress has on average been rated satisfactory. At project's finalization, the following results have been achieved:

- Multiple expert policy recommendations feeding into the adopted in 2016 new Water Code (80 percent of which were accepted);
- Completed community climate vulnerability assessment reports, as well as community investment plans for the three pilot regions;
- Completed multiple on-the-ground adaptation measures across the three pilot regions;
- Numerous community-level capacity development activities, related to establishing and operationalizing Water User Groups (WUGs);
- Establishment of eight WUGs, which in many respects could serve as prototypes of WUA, and at a minimum could provide useful lessons when WUAs are created in the country as part of a larger scale reform agenda.

## Project Context and Progress to Date in Georgia

### *Context*

7. Georgia, a lower middle-income country, is vulnerable to natural hazards including floods, flash floods, earthquakes, droughts, landslides, avalanches, and mud flows. Catastrophic events that have annual probability of occurrence of 50%, could imply an economic loss that could exceed 20% of Georgia's GDP.

8. As an independent state, Georgia has a short history of disaster risk management (DRM). After the collapse of the Soviet Union the country experienced a lack of financial, administrative, human and political capacity to exercise effective patterns for disaster risk reduction (DRR), despite the fact that Climate Change impacts were increasing the dangers of natural disasters. A map of the country including the project locations is provided in Map 2 below.



Map 2: Priority sub-catchments for floods and flash flood hazards in the Rioni River basin

9. The project **objective** is to improve resilience of highly exposed regions of Georgia to hydro-meteorological threats that are increasing in frequency and intensity as a result of climate change. The project intends to help the governments and the population of the target region of Rioni River Basin (RRB) to develop adaptive capacity and embark on climate resilient economic development. The project is comprised of three main components:

- Floodplain development policies in place to minimize exposure of highly vulnerable people of Rioni river basin to climate change induced flood risks;
- Direct investments and local actions in highly exposed and vulnerable communities improve flood management practice on 8,400 km<sup>2</sup> and build resilience of 200,000 people;
- Institutional capacity developed for early warning and timely alert communication to vulnerable communities of the Rioni river basin.

#### *Project main achievements*

10. The project was approved by the Board in December 2011, and the agreement was signed by UNDP in February 2012. The inception workshop was held on 4 July 2012, marking the commencement of the project implementation, and the project finalized in June 2017, submitting the final evaluation in June 2017. The Board has transferred the total grant amount of USD 5,316,500 approved for the project. The project's implementation progress has been rated satisfactory every year since the project's inception. At project's finalization, the following results had been achieved:

- Floodplain zoning policy framework and policy guideline notes were developed, which aims to integrate flood risk management into the land use planning process in Georgia. The document is based on flood hazard maps and risk modelling;
- Good quality maps for hazards (landslides and inundation) were developed. Landslide and mudflow maps prepared for six target municipalities (Oni, Ambrolauri, Lentekhi, Tsageri, Tskaltubo, Samtredia);
- Building codes were reviewed and recommendation for flood resilient building codes have been developed and presented to the relevant authorities; the project advocated for considering these recommendations in the new construction law that was developed under the leadership of the Ministry of Economy and Sustainable Development and is pending Parliament ratification;
- Institutional strengthening: Staff of the National Environment Agency (NEA), which was the project Executing Entity, have been trained on the use of Geographic Information System (GIS) in hazard mapping and risk assessment, risk and hydraulic modeling, flood forecasting and early warning. Staff of local municipalities has been trained in climate risk management and DRR.
- An innovative flood insurance model has also been developed. This calculates losses to be insured within each flood insurance zone (based on risk model and flood zoning).

## **FINDINGS OF THE MISSION**

11. The representatives of the secretariat met with a number of stakeholders during the two-week mission, discussing various aspects of the project implementation and execution, and undertook field visits in the provinces of Nohur and Karakum (Turkmenistan) and the municipalities of

Samtredia, Tskhaltubo, Ambrolauri and Oni municipalities, part of the RRB (Georgia). The agenda of the mission is provided in Annex 2 of this report. This section summarizes the findings of such visits and meetings during the two weeks of the mission.

## **Community-based adaptation options and technological innovation**

### Turkmenistan

12. One of the objectives defined in this portfolio monitoring mission was to collect lessons learned from a number of community-based adaptation options under various agro-climatic conditions, especially focusing on water management technologies in the project's pilot regions. The project adopted a **holistic approach** considering the economic aspect of water-dependent livelihoods in the pilot communities, furthermore it proved to be successful in creating local ownership and engagement of communities in project's activities.

13. The project objective was to increase resilience in three different agro-climatic zones in Turkmenistan by implementing hard water efficiency and irrigation measures, and to develop water user associations benefiting over 30,000 farmers. Climate change and variability, the lack of modern farming and management practices, along with lack of due attention to sectors other than those of the state order crops (cotton and wheat) has resulted in a sharp decline of agricultural production. This process of decline has been exacerbated by the slow take up of efficient water management technologies, which have limited the surface of land available for cultivation.

14. The project has been implemented in three pilot areas, Nohur (mountainous area), Karakum (desert) and Sakarchaga (oasis), each of them with a local project coordinator. As already noted in the project Mid-term Review (MTR), these pilot sites appear to have been chosen based on previous work in the areas (a UNDP-GEF project on sustainable land management was implemented in these pilot regions even though the project had different objectives), and in the view of scaling up the interventions in different regions with Government efforts, rather than based on a clear assessment of specific strategic criteria.

15. Various **community-based adaptation measures**, tailored to the specificity of each project intervention zone, were implemented for the sustainable development of the varying sectors of the Turkmen agricultural community: from standard irrigated agriculture, to desert and mountain farming. Several technologies were applied for example water hydraulic structures, stemming from traditional methods of accumulating and storing water (wells, *sardoba*, *kaks* (rain pits), dams, and reservoirs). As a result, about 4,000 agri-pastoralists of the Nohur mountainous region are implementing water harvesting and saving techniques. In the Karakum desert region, about 8,000 farmers are implementing community-based well and watering point management measures, including sand fixation.

16. **Nohur**, one of two pilot areas, visited by the mission, presents a type of agriculture that is arid mountain pasture animal husbandry of cows, sheep, and goats; irrigated vegetable and fruit cropping. In this area livestock is five times greater than the available pastures. Under the aforementioned UNDP-GEF project, capacity building session highlighting the importance of introducing fruit trees, and developing vegetable production through drip irrigation systems, were organized. Additionally, to reduce the pressure on pasture, if farmers were getting rid of two sheep,



they would receive one fruit tree as incentive. In this area, they grow peach, pomegranate, cherry, different vegetables and Turkmen juniper<sup>2</sup>.

17. Communities decided which investment they needed, and they received technical assistance from experts of the National Institute of Deserts, Flora and Fauna, and UNDP representatives. Construction of small-scale dams as watering points for livestock, and improved irrigation systems, are the main community-based adaptation measures applied in this area. A complete list of the various community-based adaptation measures in the two visited project sites, can be found in the below table<sup>3</sup>.

<b>Adaptation measures in Nohur</b>	<b>Quantity</b>	<b>Adaptation measures in Karakum</b>	<b>Quantity</b>
Construction of dams by local people	8	Construction of new wells	15
Design and construction of a drip irrigation system	47ha	Reparation of existing wells	13
Greenhouse to grow vegetables and seedlings of local trees species <sup>4</sup>	0.5ha	Sand dune fixation	10ha
		Cleaning of takyrs and kaks	4
Repair of dams and springs	6	Construction of new sardobs	15
Improved concrete basins for water storage	3	Reparation of existing sardobs	4

18. The other project site visited by the mission is **Karakum**. In this area, the agriculture is based on desert pastoralism of camels, cows, sheep and goats. The main livelihood source in this area is livestock breeding. The project supported the construction of sardobs and wells, as well as installed cisterns available in five schools, guaranteeing water availability for these students throughout the year. During the summer season, water is shared among families (1 cubic meter per family)<sup>5</sup>. Thanks to the repair or construction of wells project beneficiaries could increase their livestock. Additionally, two Water User Groups (WUGs) prepared investment plans and submitted grant proposals for innovation projects. Some innovative technologies were introduced in the country for the first time, such as *Kak* lining, tested in 2 villages in this region. This is a water pond coating with geomembrane in the bottom and special cover on the top to avoid seepage of the water into sand and evaporation (see below picture).

<sup>2</sup> This plant grows 5 cm per year, and it takes 300 years to grow into a tree. The plantation of this tree is considered an adaptive practice as its roots grow horizontally and not vertically, thus it helps with soil fixation preventing land sliding. Furthermore, it keeps lots of nutrients preventing soil erosion, needs to be watered just within the first 3 years, and the lowest branches create a protective barrier for the roots, preventing goats to eat them.

<sup>3</sup> Adapted from: Melikyan, L 2017, Terminal Evaluation Report – UNDP Turkmenistan.

<sup>4</sup> One of the project beneficiaries owns a greenhouse given by the project (average cost per unit \$3,000) of 100m<sup>3</sup>, and he can grow up to 2 tons of cucumbers. He also cultivates pepper, and strawberries and he can give to the rest of the community members a share of his produce. This greenhouse is also used for demonstration purposes.

<sup>5</sup> In Sakarchaga (Oasis area) pilot region, the adaptation measures adopted helped to increase the harvest by 30%. Here the equal share of water was the main issue which was solved by the installation and/or repair of water regulating devices.



Figure 2: Project beneficiary explains the benefits of the newly introduced technique of Kak lining

19. As reported in the project Final Evaluation (FE), many but not all of the adaptation measures applied are innovative. One example that illustrates this: in Karakum the project supported the construction of water wells, which followed traditional design since “the residents refused to have wells with solar batteries, arguing that it costs more and with the same amount of money they could have more wells of traditional type”. Thus in this case, community needs, driven by acute shortage of water, prevented the introduction of innovative adaptation measures.

20. The State continues to play a far-reaching and predominant role in the economy and acts as the main provider in ensuring adequate living standards of the population, with subsidies, and price controls. This has been possible largely due to revenues from the hydrocarbons sector. However, it poses large budgetary burden and results in unsustainable and ineffective water delivery services to farmer and pastoralists communities. Despite the existence of water user and farmer associations, their role and capacities are limited to improve the water management and delivery options. A total of eight **Water User Groups (WUGs) were piloted and established** thanks to the AF project, and proved to be very successful in addressing a number of issues. Before the establishment of WUG, people had to go to the neighboring village to solve a dispute, or if any other issue would arise, and were characterized by a top-down management structure. With the establishment of WUG, issues are solved locally. A total of four local water adaptation investment projects have been funded through WUG and associated community organizations, and about 35,000 people have been benefitting of improved water services that are resilient to drought and climate aridification.

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*“We had eyes but we could not see, we were blind. This project opened our eyes again, gave us confidence, thanks to the information provided”.*

Member of WUG in Nohur

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21. The project proved to be efficient in fostering community engagement for building ownership. As an example, the findings of **Climate Change Risks and Vulnerability Assessments** undertaken by local specialists, were shared with communities, which in turn developed local development plans, based on their specific needs. This, according to the project team specialists,

is one of the main differences distinguishing this project modus operandi, versus other initiatives. In fact, the establishment of WUGs came from a community idea that helped solving issues due to water scarcity. Community ownership was demonstrated through the organizational structure of these groups, as one person is held accountable for each water dam, and in due case, reparation of pipes and dams is carried out by collecting money from local people, fostering a sense of **community responsibility**. Water reservoirs have been repaired and/or created, before (since 1916) people used water springs. These are managed by the WUGs and water distribution is tailored according to the type of crop. Women are represented in WUGs, as in each division there is one woman chosen for her leading attitude, this facilitates their involvement in community planning.



Figure 3: Water User Group member explains the community self-management scheme for water resources distribution.

22. In Turkmenistan, awareness of predicted adverse impacts of climate change and of appropriate adaptation responses, is limited. Some of the coping mechanisms employed by farmers, agro-pastoralists and pastoralists in the main agro-ecological systems are increasingly strained due to mounting water deficits. A very limited access to stable water delivery services jeopardize over 2,000,000 people living in the project target regions, whose majority is engaged in agriculture. The project supported the combination of **innovative and traditional measures**, to improve water capture, optimize water demand and improve water efficient applications.

### Georgia

23. One of the objectives defined in this portfolio monitoring mission was to collect lessons learned from adaptation options to build flood management practices in vulnerable communities.

24. Before the project, there had been heavy reliance on hard structural measures that had *“proved inadequate to resist progressively increasing flood discharge volumes and will therefore become increasingly so, in the face of climate change”*. Based on experience, the Government of Georgia had determined that traditional structural measures like the building of reservoirs and embankments cannot always be adopted in areas susceptible to flash floods. It was therefore concluded that Georgia could benefit from adopting more climate resilient and sustainable engineering solutions such as bio-engineering measures that involve the use of local natural

material and vegetative cover to restore the physical, biological and chemical flood-plain functions to improve water saturation and transmission to minimize the damage. During the project design stage, it was decided the project would fund a combined solution by improving existing **structural** and introducing **non-structural, bio-engineering options** that help increase natural infiltration and discharge transmission of the floodplain.



Figure 4: Agroforestry as a way to prevent soil erosion and mitigate flood and flash flood impacts in Samtredia, Rioni river basin in Georgia.

25. The structural measures contained in output 2.1 were largely defined prior to project approval based on the existing situation and priorities in the target municipalities, for example for rehabilitating existing structures. The non-structural measures funded under output 2.2, on the other hand, were to be based on an **employment guarantee scheme for flood management**. There was experience of such schemes in the target municipalities but only for rehabilitation work, not for anticipatory adaptive measures. Site-specific bio-engineering measures were designed, based on hazard maps by the NEA assigned staff and relevant municipalities with direct involvement and participation of local communities. Output 2.3 focused on developing floodplain seasonal productive systems (e.g. short season annual cropping, cattle rearing plots or seasonal pastures, agroforestry). Agroforestry was already being practiced in Georgia prior to the project, with positive results in terms of water infiltration. Broad areas for such practices had been identified in advance of project approval. Activities in general have been prioritised through consultations with local communities including heads of municipalities, NEA local staff responsible for management of the hydrometric network and national NEA and Ministry of Regional Development and Infrastructure (MRDI) staff.

26. It became much easier to convince the local populations when they saw the **impact**: the reduced flow in the river gave rise to a new island where forest started growing naturally. Senior members of the community attested that for the last 40-50 years there had not been an island in the river. As often with forest-related projects, the time to establish a forest cover was a challenge, and reforestation was started too late compared to an ideal situation. Establishing forest takes at least three years, and the project only had 2 years left when reforestation started.

27. The project took an overall approach that can be considered innovative through its **comprehensive nature**. To complement activities to increase economic resilience implemented



through the employment guarantee scheme, the project sought to use local materials and employ local workforce wherever possible. Similarly, tree species used in reforestation for bank protection included species of non-timber value such as walnuts and acacia (a source of nectar for bees kept for honey). Learning techniques in planting and maintaining trees and building fences was another benefit for local communities.

28. The project as a whole provided important lessons to assessing, mapping and addressing flood risks that turned out to be very useful in response to the destructive Tbilisi flood of 2015. According to government representatives, the use of non-structural measures for flood control implemented in the project is innovative, too.

29. In terms of budget, the project supported 1/3 hard measures and 2/3 soft measures. Though “**hard**” **measures** are costlier per unit produced, they can be more effective in protecting in areas where availability of land is limited. A 1-kilometer levee protected 30 ha of agricultural land in a mid-stream community, enough for 40 families to use. The Ministry of Regional Development and Infrastructure (MRDI) was one the main governmental partner of the project, and according to the Bank Protection Unit under the Roads Department, the annual budget allocated to riverbank protection is between 5-7 million GEL<sup>6</sup> (about 2.5 million USD), this is insufficient to cover all the country needs.

30. Opportunities to use soft measures may be highest in downstream municipalities. In upstream areas, vaults made of large boulders were seen by government respondents to be the preferred option. In terms of **soft measures**: Reforestation is the most successful solution in areas where the landslides are not deep, using trees that have deep roots and that can anchor the landslide in place. The Head of Samtredia municipality stated that the involvement of part of the communities did not create conflict for those that could not directly benefit of projects activities, on the contrary it provided interest in continuing these activities in the long-term, such as agroforestry.

31. The **employment guarantee scheme** had worked very well and was one of the cornerstones of the project. The use of the scheme was rooted in long-standing local practice, and is strongly supported by the local communities that suffer from limited economic development opportunities and high levels of unemployment. While the use of the scheme enabled directly increasing the economic resilience of the local populations, it also provided an opportunity to transfer useful skills and capacities to the community members.

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*“This project generated employment possibilities  
and the involvement of the population in the  
contextual site is key for a long-term perspective”*

*Head of Samtredia Municipality*

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32. The project activities were aligned with the goals of the Second National Communication (SNC) of Georgia to the UNFCCC. The SNC had looked into the Rioni River and its delta for the combined effects of intensified floods and coastal land submersion due to sea level rise. The project was designed to respond to the flood and flash flood risks in the most vulnerable river basin – Rioni, in

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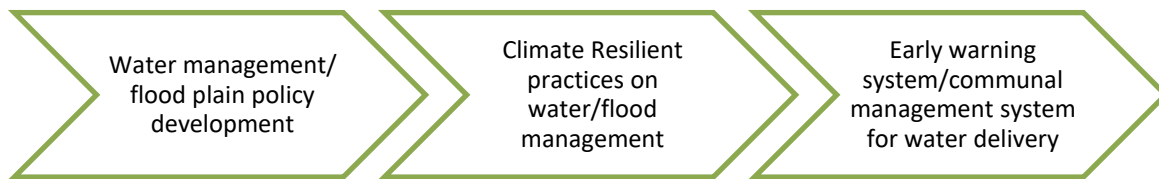
<sup>6</sup> Georgian Lari.

the areas most stricken by poverty. The project also aligns with the National Environment Action Plan. National Disaster Risk Reduction Strategy was developed during the project, and UNDP, aided by its experience from the Adaptation Fund project, helped develop assessments for it. Experiences from the project helped in the response to the catastrophic Tbilisi 2015 flood, for instance through development of hazard maps. Georgia does not have an approved National Adaptation Plan yet.

33. The project mostly considered women and men to benefit equally from the impact of the protective works, and **gender** was seen relevant especially in terms of opportunities of women and men to participate in project activities such as work and trainings. According to local government respondents, the nature of work in the project, focusing on physical work, was perhaps more easily accessible for men. However, women had been involved in non-physical activities such as financial and administrative issues and logistics. Women were also involved in the reforestation activities conducted by the NGO ELKANA. In short, there would certainly be opportunities for more explicit assessment on the differences in project impacts for women and men such as the employment opportunities related to non-timber forest products promoted by reforestation activities.

### Evidence-based decision making and institutional strengthening

34. Both projects combined policy, concrete adaptation actions, and delivery and scale up approaches. The missions looked at how these policies have been identified, the approaches taken by the two projects to build stakeholder ownership, as well as the technical challenges faced, and the steps taken to ensure the sustainability of projects' outcomes.



#### Turkmenistan

35. In Turkmenistan, the mission analyzed the progress made towards the project component related to strengthening institutional capacity to develop climate resilient water policies in agriculture. Component 1 of the project aimed to address the capacity building and reform requirement at national and regional government level to promote **evidence-based policy making** in: (i) water management techniques implemented from a cost benefit perspective with equal focus on supply and demand side approaches, and (ii) the value of water is recognized as a commodity through progressive water pricing. The purpose of this was to create an enabling environment that will support effective community level water management and the shift towards Integrated Water Management.

36. Based on the Vulnerability and Capacity Assessments (VCA), a report on **socio-economic impacts of climate change risks** on the local economies of three project regions was prepared (As shared by the project team, this intervention approach was based on Charles Kelly methodology of *Developing a Rapid Environmental Assessment*<sup>7</sup>). A preliminary cost-benefit analysis was

<sup>7</sup> Environmental Impact Assessment (EIA) procedures are well developed for non-disaster situations. However, they are conceptually and operationally inappropriate for use in disaster conditions, particularly in the first 120 days after the

conducted, and consultative workshops were organized to discuss the findings of the studies in all three pilot areas, as well with the representatives from the former Ministry of Water Resources, Ministry of Economy and Development and the Ministry of Nature Protection of Turkmenistan. The findings from the study will inform the national reporting to the UNFCCC (for which the GoT receives assistance from UNDP) and it contributed to the National Economic Program of Action on Adaption and Mitigation to Climate Change (NEPAAM) of Turkmenistan.

37. The project's contribution in capacity building and decision-making has been proved efficient, since the majority of the **revised water code** provisions came from project experts (80 percent of which were accepted)<sup>8</sup>. The project provided recommendations and significant inputs to the new Water Code (2016). Specifically: i) the concept of "association of water users"; ii) rights of water users in relation to the establishment of WUAs / WUGs; iii) transition of water management to the basin principle and establishment of basins' councils; iv) the competences of state bodies and local authorities related to water resources management; and v) the norms of the differentiated approach in determining the tariffs for water supply services. The newly adopted Water Code includes articles that enable community-based management of water resources by expanding the authority over management of the water resources to WUGs/WUAs. Among other rights, WUGs become full-fledged participants of the agricultural sector, able to perform irrigation works and be paid.

38. In Turkmenistan there is a limited pricing structure for water, with charges for industrial and commercial agriculture, but with most social tariffs allowing free access to lower income users and state farmers. Several **draft sub-laws** have been drafted by the project experts, specifically a draft a law on WUAs that was with the Cabinet of Ministers at the time of the mission with no expectations of being adopted soon, and a methodology of differentiated tariffs for services of water supply was developed. The proposals drafted by the project, imply applying **progressive and differentiated water tariff** (that must reflect actual consumption, measured in a reliable way). Nevertheless, according to the project Final Evaluation, there was "a need for a more comprehensive reform related to pricing incentives and mechanisms for water usage, with an approach that fully takes into account the inflexibility of farmers' decision-making related to water usage in areas where leaseholders are accountable for delivering centralized state orders for production, and may not have the ability to significantly modify their water management and usage".

### Georgia

39. In Georgia, the mission analyzed the progress achieved towards the project component related to strengthening institutional capacity and evidence-based policy making to develop floodplain policies and flood plain management at national and local level.

40. As innovative element, thanks to international expertise, the project supported the development of a **flood insurance scheme** (weather index-based) with detailed insurance packages, covering villages highly exposes to disasters. This has been developed for the whole basin (which is over and above the original plan to develop schemes for only the 6 target municipalities). As innovative element at local level, the risk model has been used as the basis for a flood insurance model which calculates premiums to be paid within each flood insurance zone and the associated payouts for each different magnitude of flood event. The insurance model is

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disaster has begun. Charles Kelly methodology incorporates the requirements for an environmental impact assessment procedure appropriate for disaster conditions. These requirements are captured in guidelines for a Rapid Environmental Impact Assessment (REA) for use in disasters.

<sup>8</sup> The new Water Code features Project recommendations on Articles 1, 4, 6, 12, 39,40, 60, and 112, as reported in the project Final Evaluation.

based on the principle of ‘pooled risk’ based on mutually agreed formula for calculation of premiums based on risk zones. The scheme was extensively discussed and agreed with the senior government officials as well as insurance sector; however, the Government should take lead in piloting this scheme in the Rioni basin. Flood insurance that the project sought to foster was something very new and innovative for Georgia. Unfortunately, it turned out not possible during the life of the project for insurance companies to fully adopt those models, apparently due to the novelty of the idea and the unfeasibility of insurance premium for the insured. Nevertheless, several insurance companies are still working and expanding this field.

41. The main challenge reported in this project component, is the population tendency to stick to a status quo bias, and country budget constraints. “Property insurance in Georgia is more challenging to introduce”, according to the Head of Climate Change Department (Ministry of Environment and Natural Resources Protection).

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*“Communities are very satisfied with the project, which is extremely important: they have given it a mark of 4.9 out of 5.0.”*

*Grigol Lazierievi – Ministry of Environment and Natural Resources Protection, Head of Climate Change Department.*

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42. Furthermore, **hazard and inundation maps** were produced for the whole Rioni River Basin (RRB). As part of the Association Agreement between Georgia and the European Union, now municipalities are obliged to have not only emergency management plans but also long term risk management plans, floodplain zoning and inundation maps, showing low, medium and high risk of zones. The selection of project territories was done through zoning and risk profiling, now this methodology is part of NEA modus operandi, as many of its staff were trained. Flood maps and landslides maps in one of the municipalities are used to regulate building permits, and owners of plots located in high risk areas should now think about insurance schemes and private protective infrastructure. For the developed of these geological maps, also with support of NEA staff, several field visits were conducted and municipalities’ staff were trained on how to read and use these maps.

43. People are generally aware of the possible hazards; however, they have to apply construction regulations for new properties to be built, whose applications are assessed by the municipalities. The infrastructure and architectural department of the municipality provides people with relevant information, and the hazard and inundation maps are located in the city hall and are available for general consultation purposes. Hard copies and technical documents are available, but not on line. As part of outreach activities to raise awareness about maps, the municipalities hold meetings with community leaders, who were responsible to provide relevant information to their villages.

44. One of the main challenges encountered to enhance land-use regulations (land-use planning, including zoning and development controls, e.g. expansion, economic development categories, etc.) to ensure comprehensive floodplain management and spatial planning by using the maps produced, is that Georgia is still using old laws (i.e. water law). The Emergency Management Department (EMD) submitted their recommendations to reduce flood risk (related to building codes), but these measures are not yet enforced, and municipalities are guided by old regulations. After 2018 EMD will gain a supervising function, supervising municipalities on how these emergency plans will be



implemented by municipalities. Overall, the project provided very good bases to update emergency plans in the municipalities.

45. As part of the modernization of meteorological and hydrological system for the RRB, the project supported the installment of an EWS. Nevertheless, to achieve a paradigm shift, the **hydro-meteorological modelling and EWS** needs good observation methods at national level, as for now the system was just installed in the RBB area, and can support not just the reactive approach but also the prospective approach. This year events showed that the systems developed under this project worked efficiently, also according to the local population. A series of targeted trainings in advanced method of risk assessment and forecasting were delivered for the NEA staff and partner organizations. An innovative element of the project was the introduction of a **modelling software** even though, as expressed the NEA representatives, additional training and replication to other river basins is needed. The EWS led by NEA for long and short term flood forecasting of hydrological risks, was established at the sub-national level. A weather monitoring station was installed within the Farmers Service Center, which is part of the Ministry of Agriculture's extension services. The station provides automatic measuring of rainfall, temperature and humidity through GIS. A total of 20 weather posts (installed within the Farmers Service Center which is part of the Ministry of Agriculture's extension services), 5 meteorological stations and 10 hydrological posts<sup>9</sup> have been installed in the six targeted municipalities. These stations are connected to the Central Agency that analyses and collect the data, through NEA staff. Now data comes on a real time during emergencies.

46. The project fostered the introduction of a new paradigm in development: **risk informed decision making** and development initiatives to avoid disaster aftermath high reconstruction costs, and recovery phase should avoid replicating the risk, following a build back better (BBB) approach. The project itself has played a transformative and catalytic role in the way the country is approaching flood and flash flood management practices, combining disaster risk reduction and climate change adaptation into multi-level planning tools and policies. A **Floodplain zoning policy framework and policy guideline notes** aiming to integrate flood risk management into the land use planning process in Georgia, were developed. The document includes rules for controlling development and land use designation for each flood zone, and it describes the management plans and activities to be implemented. The document is based on flood hazard maps.

## **The use of monitoring and reporting to improve adaptive management**

### *Turkmenistan*

47. At the community level, monitoring of water use and distribution of benefits to the community is done through the water user groups (WUGs) and farmers unions. This is key to ensuring the sustainability of the project outcomes, as the project assets are automatically transferred to the communities for their use. Through the project, communities have been trained in the rational use of water and have received adequate water storage or distribution equipment, among other support.

48. At the project level, the mission learned that during implementation, more adaptation-specific indicators had been developed that would help better measure the adaptation benefits throughout the project lifetime. With the assistance from the project team, funding proposals were developed by the WUGs with the active participation of the local communities. Key findings of the vulnerability and capacity assessment (VCA) were translated into 11 indicators of climate risks and degrees of

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<sup>9</sup> Historical hydro-met data was paper based, and now has been digitalized.

change in the last 20 years and 9 indicators of the impact of climatic factors on economic activity of local communities. These included indicators such as “reduced pressure on pasture”, “increase in yield or revenue”, or “decrease in productivity loss”. On this basis, action plans were developed to reduce the impact of climate risks on the life of local communities in the three pilot regions, through concrete measures.

49. However, the Terminal Evaluation report of the project, dated July 2017, states that “The M&E framework could have been of better quality, much more informative, involve key partners, stakeholders and especially beneficiaries in the target locations, e.g. tracking the actual use of the provided adaptation measures, yields and sales, etc. In the same vein, this project was ideally suited for having rigorous impact evaluation with control groups.” It appears therefore that, despite the development of adaptation-specific indicators through the action plans, such changes were not reflected in the project results framework.

50. At the central government level, there is currently no system to monitor the achievements of projects such as the AF project, except that the approved indicators are regularly monitored by the project team and reported to the State Committee following a standardized reporting format. UNDP has started supporting the government in developing a monitoring system for development processes, and the Sustainable Development Goals (SDGs) have started being integrated into the mid-term plan of the Ministry of Economy and Development, following the government’s selection of the SDG indicators to be monitored in Turkmenistan. It is planned to develop, through other funding, a national monitoring, reporting and verification system for adaptation planning and management, to measure changes in vulnerabilities from adaptation actions at the national level.

### Georgia

51. At the project level, the mission learned that the monitoring and evaluation should have been strengthened. At project design phase, the results framework could have been improved and no monitoring plan was established at the start of the project. A monitoring plan was developed after the Mid-term Review (MTR) recommended it. As reported in the Terminal Evaluation report, dated February 2017, “Monitoring and evaluation did not benefit from any quality assurance or technical expertise contrary to the actual expertise involved in all other aspects of the projects. As a result, the M&E system could have been developed based on a stronger RBM approach in the design of the results framework and indicators and including a monitoring plan in line with UNDP corporate requirements from the onset of the project. A review of the results framework and of the indicators was suggested by the MTR but not accepted in the management response”. Clear and measurable indicators should have been developed at project design phase.

52. Some of the project targets were clearly overestimated compared to what was realistically possible. For instance, the target set at project completion under the agroforestry output was 600 ha, even though at project finalization stage less than 100 ha were reforested. The project team explained that the original goal had been based on subjective assessment rather than specific studies, and reaching it was completely unrealistic both in terms of cost and in terms of land available for reforestation. Another example, under output 2.2 focusing on *“Community-based adaptation measures, such as bank terracing, vegetative buffers, bundles and tree revetments implemented building on an existing municipal employment guarantee scheme”*, the mission learned that, indicator 2.2. did not provide a valid indication regarding the achievement of the outcome, particularly because there was no specific monitoring plan developed to collect and analyse the information. Nonetheless, the last PPR provides an analysis of the ‘lives saved’ by the implementation of the FFEWS systems based on standard ‘loss of life’ calculations for any FFEWS

with climate change considerations. And this shows that the FFEWS will save more than 200,000 lives over the next 50 years. The “loss of life” calculations is something that is quite difficult to measure directly and is only feasible to measure after the end of the project or through future projections. The project indicator, as suggested by the MTR could have been better formulated at project design phase, without mentioning the coverage or number of people whose resilience had been developed in CCA, that is something forward looking.

53. At the national level, the Prime Minister office has a donor coordination unit, where they try to compile information and updating existing database for international supported programs and state programs.

## LESSONS LEARNED

54. There are a number of lessons learned from the missions, which are summarized in the below section.

### Concrete adaptation options and policy development

#### Turkmenistan

55. The project team and experts think that some major issues that could be strengthened under future initiatives are: water measuring systems, and the water tariff. The project proposed a sound methodology that was shared with the Ministry of Agriculture and the Ministry of Environment two years ago, but there are political implications. Furthermore, **changing the legislative basis** to recognize climate impacts is a **multi-year process**, and dependent upon national timetables and processes, this has to be taken into account in the design of similar projects. Other interconnected barriers are: i) the lack of agricultural extension services. The Desert, Flora and Fauna Institute, as research institute, provides advisory to government and technical assistance to farmers, and trainings from time to time on a sporadic basis. Furthermore, ii) the non-rational water consumption for irrigation purposes jeopardizes the yield because those who live in proximity to channels tend to over-irrigate and can lose their yields, whereas those far by consequence don't have access to a sufficient water level. In Soviet times, it was reported that, the Land Use Institute gave more comprehensive development plans and technologies support to farmers.

56. The establishment of Water User Associations was challenging, the **water management approaches have to be carefully adapted to the local context**. Project experience has shown, for example, that the WUG approach works differently in the three project pilot areas. Additionally, barriers to microfinance are multiple including: short-term lease (by law should be up to ten year but in practice is one to two year. Now the government is working to increase the lease period up to 50 years), small plots and high territorial fragmentation. The Government provides 10 years' loan with one percent interest rate to well established farmers, but for smallholder farmers the access is not guaranteed. Dahians get credit from the state as they are a semi-public entity, and WUGs have sub accounts in collective farms (Dahians).

57. This was the first adaptation project in the country. It was comprehensive as it looked at different types of productions, different technologies, and various management systems. Nevertheless, in future interventions, more support should be given to wheat and cotton in terms of improved technologies for adaptation measures (i.e. to reduce soil salinization, etc.).

## Georgia

58. The Adaptation Fund project in Georgia has been ground-breaking in many ways, and its success as a whole is a lesson learned, testament to which are the plans for scaled-up projects with funds from other sources such as the Green Climate Fund (GCF). The project was effective: i) It was the first project in Georgia aligned with climate change adaptation and hazards management (geologic, hydro-meteorological) together; ii) in terms of technology transfer, in words of the terminal evaluation conducted in late 2016: “The project is an **innovative and pioneering design** that provides a good approach for climate change adaptive management of the river basins in Georgia. It has been designed with a **holistic and comprehensive focus** that makes it particularly suited for the needs of the country. It has challenged the traditional paradigm used in Georgia and has brought some state of the art as well as the latest information on flood and flash flood management practices that can be emulated in the country. In many ways, the project has proved to be a revelation with alternative scenarios that suggested a range of options for decision makers to deal effectively with the effects of climate change. Its value goes beyond simply flood and flash flood management, as it can and should be extended to other type of hazards as well. It has resolutely been a sound investment for the country, in terms of acquiring new concepts and updated practices, in developing capacity at national and local level on a range of different aspects, and in providing practical examples of success through concrete interventions that served both to mitigate the effects of climate change and as developing examples of partnership approaches that are inclusive of municipalities and communities.”

59. The project has combined the national, regional and local levels in a practical way and it has been able to use the involvement of the different levels to transfer experiences and expertise on flood risk management across them. In terms of quality it has been assessed as one of the best projects implemented in Georgia in recent years. The EWS established by the project works well and people can be notified and alerted about possible floods - nevertheless, one negative aspect could be that communities asked to include radars to this equipment, which was excluded for higher costs (radars can provide more accurate data). They acknowledge this gap; the radar issue will be considered under the GCF project.

60. The project provided useful lessons on the **limitations of non-structural measures** in flood protection: first, using trees in management of floods, erosion and landslides, requires a sufficiently long timeline for establishment and maintenance. Not being able to follow through to sufficient maturity (minimum 3 years) reduces likelihood of success. Secondly, conducting adequate specific analysis of the availability of land (including land tenure) and the costs associated to non-structural flood management measures at the project design stage is crucial for the assessment of feasibility. Nevertheless, there is room for improvement in communicating more clearly benefits of non-structural adaptation measures (and benefits of including climate change considerations into structural designs) to implementing partners, to ensure that climate change adaptation (CCA) approaches are embedded into the organization (and to avoid the risk of going back to old practices). After Tbilisi floods a PDNA was conducted and this was an opportunity to link DRM and CCA agendas in the country (As DRR there is the need to ensure better linkages between risk information, emergency preparedness and development practices).

61. According to the project partner NGO ELKANA, one of the main challenges registered for implementing protective adaptation measures in watersheds, was finding suitable locations for soft measures such as reforestation. Another difficulty was to engage local communities, helping them understand the importance of adaptation to climate change, and convincing them. This was done by pointing out benefits, both economically and in terms of safety. The Project Management Unit

pointed out that the implementation of flood protection works was affected by weather conditions. Furthermore, in the early stage of the project, rigorous procurement requirements followed by UNDP turned out to be challenging for local service providers, and UNDP had to arrange trainings for companies to understand the process and requirements.

## **The use of monitoring and reporting to improve adaptive management**

### Turkmenistan

62. The overall project created lots of knowledge, nevertheless the dissemination of accumulated know-how is challenging, a lesson learned is that the project should have allocated sufficient budget toward the knowledge management component. It was anticipated that the project will produce Policy Briefs and disseminate to policy makers. The project has produced booklets but they feature only technical information on specific adaptation measures and do not have accompanying information on likely socioeconomic impacts, costs and benefits. Draft booklets of the latter type were developed for each type of technology in English, Russian and Turkmen (i.e. technical description and its socioeconomic impact), these were distributed to students, institutes and ministries. Other countries like Kazakhstan, are keen to learn the adaptive technologies used in this project also due to the similar agro-climatic conditions.

63. The M&E project system was rated as satisfactory in the FE, nevertheless the framework could have been of better quality, involving key partners, stakeholders and especially beneficiaries in the target locations, e.g. tracking the actual use of the provided adaptation measures, yields, etc. Additionally, the use of the results framework/logframe as a management tool could have been improved to ensure the balance between disbursements between the components. The implementing entity high turn-over in the project management staff did not facilitate this task.

### Georgia

64. The development of a robust project results framework and setting of output indicators should be conducted at project design phase, allowing sufficient time, resources and intersectoral consultations. Possible modifications to the already approved project results framework, should be done in compliance with the Adaptation Fund policies and guidelines; in this regard, the project mid-term and final evaluator should be aware of the Fund's policies when formulating recommendations to the implementing entity. To avoid selecting inaccurate project targets, is important to have fresh baseline data. In this case reliance on already available assessments without additional/complementary studies should have been a feasible approach. Additionally, a project monitoring plan has to be established in the beginning of the project. The MTR recommended to have more budget allocated to M&E, as an M&E specialist would be needed for each project to ensure quality assurance. In the UNDP Georgia country office, a M&E officer for programmes was hired in just 2015, the team leader conducts periodic monitoring trips as part of tasks for quality assurance, nevertheless a person in charge of M&E is necessary.

## **Sustainability and scaling up**

### Turkmenistan

65. Project's outcomes sustainability is supported by the fact that, as mentioned above, the project pilot areas received previous assistance and communities were already trained. Secondly, project's beneficiaries are empowered and see positive results of maintaining community assets established

under the project. The offices of farmer's unions will be the resource centres in each targeted area, after the project finalization: people here can receive information and brochures on climate change adaptation measures at community level.

66. a proposal to submit to the Green Climate Fund (GCF) could draw on lessons learned from the Adaptation Fund project. There was also a great interest for a second phase of the project: this could either be formulated by blending grant money with GCF funding or as a stand-alone project. Another GEF/SCCF project "*Supporting climate resilient livelihoods in agricultural communities in drought-prone areas of Turkmenistan*" (2016-2021), will use the experience of the AF and replicate technologies tested as well as introduce new ones, in other regions.

67. The project provided an impact that is easily communicated, affecting different stakeholders on different levels. Other key elements of the project's achievement include the provision of economic incentives to communities, the improvement of livelihoods and increased resilience of communities and ecosystems. The project is contributing to change paradigms at local and national level on issues related to climate change, through structural prevention measures in the short term and is expected in the long term to change the national systemic approach towards climate change.

### Georgia

68. The project provided lessons learned on the usefulness of leveraging, as possible, the short-term economic benefits for the communities, to increase buy-in and improvement of economic resilience. Such benefits could include employment opportunities through employment schemes, using local vendors for goods, works and services, and the training value of project activities for the local population. The project itself was significant in providing transformative impacts, and was able to provide the base for scaling up under the GCF at national level (funding proposal submission in June 2017). The project is considered successful from the ministerial standpoint also for the tangible results that it has achieved. The proposed GCF project will seek to establish multi-hazard EWS, providing more deep equipment and extensive capacity building to local communities. They have good ratio of co-financing commitment (about 60%) from governmental agencies (MAG, Internal Affairs, MRDI). Municipalities committed to provide co-financing using municipal budget for the establishment of structural adaptation measures which were already tested and adopted under the AF project, which in turn have high potential to provide economic benefits.

69. One of the successes is the practical long lasting results brought by the project. Good results are not just limited to updating hydro meteorological data, as the project was based on community needs, all activities implemented in the Rioni river basin are benefitting local populations in terms of reduced exposure to natural hazards and risks. Nevertheless, governmental counterparts stated that by and large, bio-engineering solutions need to be improved and adopted at larger scale, and this will be beneficial for future generations.

70. After the development of inundation maps and modelling, the floodplain zone mapping could be easily replicated within other river basins. The policy should also be approved by the ministerial cabinet and parliament.

## ANNEXES

### Annex 1: Key questions

A set of questions was prepared for the objectives of the missions in Turkmenistan and Georgia.

<b>Key guiding questions in the targeted learning plan in Turkmenistan</b>	
<b>Mission objectives</b>	<b>Key questions for the mission</b>
<p><u>Objective 1:</u> to collect lessons learned from a number of community-based adaptation options under various agro-climatic conditions of Turkmenistan:</p> <ul style="list-style-type: none"> <li>• At the local level, lessons from water management technologies in the project's pilot regions;</li> <li>• Draw lessons from a holistic approach considering the economic aspect of water-dependent livelihoods in the pilot communities;</li> <li>• At the local level, lessons from successful engagement with local communities.</li> </ul>	<ol style="list-style-type: none"> <li>1) What was the strategy for the selection of the project community-based adaptation options?</li> <li>2) What were, if any, the main challenges faced by the project in proposing and implementing its identified adaptation options?</li> <li>3) What were the most innovative options proposed through the project and how have they been accepted by the farmers?</li> <li>4) What made the participatory approach successful in ensuring community ownership?</li> </ol>
<p><u>Objective 2:</u> to learn from the strengthening of institutional capacity to develop climate resilient water policies in agriculture:</p> <ul style="list-style-type: none"> <li>• The experience of developing a package of modifications in the water code, with particular focus on communal water management and financial incentives for water efficiency;</li> <li>• The alignment of the adaptation interventions with the national agricultural and adaptation strategies, and level of integration of adaptation in local, regional and national plans.</li> </ul>	<ol style="list-style-type: none"> <li>1) In your opinion is the project able to achieve transformational changes in Turkmenistan through the incorporation of project's activities in broader government investment plans for the water sector?</li> <li>2) Please describe the innovative elements of the water regulations and their effectiveness.</li> <li>3) At national level, have key stakeholders been mobilized during project development and implementation such as, Universities and the State Committee on Emergency Situations? Please describe the challenges, successes and lessons learned.</li> <li>4) Do relevant stakeholders have or are likely to achieve an adequate level of "ownership" of results?</li> </ol>

	<p>5) How have the adaptation measures proposed in the project been aligned with the national adaptation strategy?</p> <p>6) Has the project been providing outputs to contribute to the development of the National Adaptation Plan (NAP)?</p>
<p><u>Objective 3:</u> to draw lessons from the project's approach to gender-related issues:</p> <ul style="list-style-type: none"> <li>• How gender issues have been approached during project development;</li> <li>• How gender issues have been approached during project implementation.</li> </ul>	<p>1) How have gender issues been integrated in the project design?</p> <p>2) Have the implementing entity gender-oriented policies been applied during the design of the project?</p> <p>3) Which system has been set up by the project to monitor how gender issues have been taken into account in the project implementation, i.e. through the monitoring of gender-sensitive indicators?</p>
<p><u>Objective 4:</u> to draw lessons from how monitoring and reporting have been used to improve project management:</p> <ul style="list-style-type: none"> <li>• How relevant indicators were defined by the implementing/executing entities, and measured during implementation;</li> <li>• How the communities have been involved in monitoring of natural resources;</li> <li>• How the mid-term evaluation (MTE) has been used to inform and readjust project activities.</li> </ul>	<p>1) Was the project implementation approach efficient for delivering the planned project results? If anything could have been improved what would it be?</p> <p>2) How were the indicators defined at project design stage? How have the indicators been measured during implementation?</p> <p>3) Did the MTE help improve project performance and impact on the ground?</p> <p>4) Have changes been implemented to project design following the recommendations provided in the MTE?</p> <p>5) Are there any early lessons learned from using the Fund monitoring and reporting tools (e.g. strategic framework and alignment table, core indicators, Project Performance Reports templates and results tracker, Mid-Term Evaluation)?</p>



<b>Key guiding questions in the targeted learning plan in Georgia</b>	
<b>Mission objectives</b>	<b>Key questions for the mission</b>
<p><u>Objective 1</u>: to collect lessons learned from adaptation options to build flood management practices in vulnerable communities:</p> <ul style="list-style-type: none"> <li>• Lessons drawn from measures of long term flood prevention and risk mitigation designed with the participation of local governments and communities;</li> <li>• Lessons from adaptive flood plain seasonal productive systems proposed by the project;</li> <li>• The experience of implementing community-based adaptation measures building on the existing employment guarantee scheme;</li> <li>• The alignment of the adaptation interventions with the national adaptation/disaster reduction strategies, and level of integration of adaptation in local, regional and national plans.</li> </ul>	<ol style="list-style-type: none"> <li>5) Based on what previous experiences were the project adaptation options selected?</li> <li>6) What, if any, were the main challenges faced by the project in proposing and implementing its identified adaptation options?</li> <li>7) What were the most innovative options proposed through the project and how have they been accepted by the communities?</li> <li>8) Has the establishment and implementation of the employee guarantee scheme (targeting 200 employees in each municipality, at least 50% women) proved to be efficient?</li> <li>9) How have the adaptation measures been aligned with the national adaptation/DRR strategy? Were there any steps taken to ensure they were aligned?</li> <li>10) Was there a particular approach used to ensure gender issues are integrated in the project implementation arrangements and activities?</li> </ol>
<p><u>Objective 2</u>: to learn from evidence based decision making in floodplain management:</p> <ul style="list-style-type: none"> <li>• How the flood management policy takes into account climate change considerations aiming also at maximizing the net-benefits from flood plains, rather than just minimizing flood damage;</li> <li>• At local level, lessons from innovative flood insurance schemes;</li> </ul>	<ol style="list-style-type: none"> <li>1) In which way are the floodplain land use and development policy addressing fragmentation and gaps in policies and national regulations?</li> <li>2) What are the strategies put in place (i.e. local-level flood insurance scheme) to steer development away from high risk areas? Have those proven to be successful?</li> <li>3) How are the project activities aligned with local, regional or national agriculture strategies? Were there any</li> </ol>

<ul style="list-style-type: none"> <li>At local level, lessons from community involvement in the design of emergency plans.</li> </ul>	<p>steps taken to ensure they were aligned?</p> <p>4) What has been the strategy to guarantee a community participatory approach and how was the stakeholders' capacity built through the project? Are there any lessons to be learned?</p>
<p><u>Objective 3:</u> to draw lessons from how monitoring and reporting have been used to improve project management:</p> <p>How relevant indicators were defined by the implementing/executing entities, and measured during implementation;</p> <p>How the mid-term evaluation (MTE) has been used to inform and readjust project activities.</p>	<p>6) How were the indicators defined at project design stage? How have the indicators been measured during implementation?</p> <p>7) Did the MTE conducted in 2014 help improve project performance and impact on the ground?</p> <p>8) What, if any, could be improved in MTEs as a tool for reflection within the project?</p> <p>9) How did the MTE helped in increasing the efficiency and effectiveness of the adaptation options tested by the project?</p> <p>10) Are there any lessons learned from using the Fund monitoring and reporting tools (e.g. strategic framework and alignment table, core indicators, Project Performance Reports templates and results tracker, Mid-Term Evaluation)?</p>

**Annex 2: Agenda of the missions***Turkmenistan*

Date/Time	Activity	Participants	Place
<b><i>Monday, 05 June 2017</i></b>			
<b>10:00-11:00</b>	Meeting with UNDP Management	Ms. Elena Panova, UNDP Resident Representative / UN RC	<b>UN Building</b>
<b>11:00-12:00</b>	Meeting with UNDP Country Office	Mr. Vitalie Vremis, Deputy Resident Representative; Mr. Rovshen Nurmuhamedov, UNDP Programme Specialist on Environment	<b>UN Building</b>
<b>13:00 -14:00</b>	Lunch	Durikov Muhammet, National Project Coordinator, Director of National Institute of Deserts, Flora and Fauna	<b>Hotel "Yildyz"</b>
<b>14:00 -17:30</b>	Attending Regional Ecological Forum (CAREC and SCTEPLR) and meet with project partners		
<b><i>Tuesday, 06 June 2017</i></b>			
<b>10:00-12:30</b>	Attending Regional Ecological Forum (CAREC and SCTEPLR) and meet with project partners	State Committee of Turkmenistan on Environment Protection and Land Resources; Ministry of Agriculture and Water Resources	<b>Hotel "Yildyz"</b>
<b>13:00-14:00</b>	Lunch		
<b>14:30-17:30</b>	Meeting with AF project staff and team of experts	AF project staff: Hanekov R., Project Manager Kurbanseidov G., Field Asst. Team of experts: Gardashov A., Kepbanov Y., Aganov S., Veisov S.	<b>AF Project office at the National Institute of Deserts, Flora and Fauna</b>
<b><i>Wednesday, 07 June 2015</i></b>			
<b>07:00-09:00</b>	Departure to pilot region «Nohur» (by car)	AF Team Nurmuhamedov R.	

<b>09:00-13:00</b>	Visit implemented project adaptation measures (water basins, dams, nursery, drip irrigation, etc.)	Hanekov R. Kurbanseidov G.	<b>Nohur site</b>
<b>13:00-14:00</b>	Lunch		
<b>14:00-17:00</b>	Meeting WUG members in Nohur site (WUG Cheshme")		
<b>17:00- 19:00</b>	Departure to Ashgabat		
<b>Thursday, 08 June 2015</b>			
<b>08:00-10:00</b>	Departure to project pilot region «Karakum» (by car)		
<b>10:00-13:00</b>	Visit implemented project adaptation measures (wells, sardobs, kaks, sand fixation)	AF Team Nurmuhammedov R. Hanekov R. Kurbanseidov G.	<b>Karakum site</b>
<b>13:00-14:00</b>	Lunch		
<b>14:00-17:00</b>	Meeting with the representatives of the local authorities, WUG members in Karakum site (WUG "Tebigat" and WUG "Charwa")		
<b>17:00- 19:00</b>	Departure to Ashgabat		
<b>Friday, 9 June 2017</b>			
<b>10:00-11:00</b>	Meeting with UNDP Management	RR, DRR	<b>UN Building</b>
<b>11:00-12:00</b>	Mission debriefing	AF team and UNDP staff	<b>UN Building Conference room</b>

## Georgia

12 June, 2017

Time	Agency	Representative	
11:00	Meeting at UNDP	Nino Antadze Energy and Environment Team Leader	
12:30	Meeting with Project Team	Vano Tsiklauri- Project Manager Natia Lipartiani- Admin/Financial Assistant	
14:00	MENRP-Ministry of Environment	Nino Tkhilava- Project National Director –GEF Focal Point	
15:00	MENRP-Climate Change Department	Grigol Lazierievi – Head of Department	
16:30	National Environmental Agency (NEA)	Ramaz Chitanava Tariel Beridze Merab Gafrindashvili	
16:00	Emergency Management Department under Ministry of Internal Affairs	Nikoloz Kuchaidze-Emergency Management Department	

**13 June, 2017**

8:00	Departure to Samtredia	3.5 hours driving by car	
<b>Time</b>	<b>Agency</b>	<b>Representative</b>	
11:00	Focus Group meeting at laneti		
13:00	Samtredia Municipality	Mamuka Tavadze – Deputy Governor (Gamgebeli)	
15:00	Tskhaltubo Municipality	Aleko Dadunashvili – Assistant to Gamgebeli	
	LTD Merksi-Agroforestry contractor	Grigol Gabidzashvili – Director of the Company Avtandil Qvachakidze – NEA Kutaisi Branch	
17:00	Tsageri Municipality	Iuri Dartsuliani – Infrastructre Unit	
	Guest House Khvamli in Tsageri		

**14 June, 2017**

10:00	Departure to Lentekhi	2 hours driving by car	
<b>Time</b>	<b>Agency</b>	<b>Representative</b>	
11:00	Meeting at Lentekhi Municipality	Germane Qurasbediani –Economic Development Unit Soso Museliani – Head of Agriculturel Unit	
12:00	Site Visit		

14:00	Departure to Ambrolauri	Guest House-Silovani	
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**15 June, 2017**

Time	Agency	Representative	
11:00	Meeting at Ambrolauri Municipality	Malkhaz Lomtadze – Head of Ambrolauri Municipal government (Gangeoba)  Aleko Qurtsikidze – infrastructure Unit  Parna Bakuradze – Deputy Gangebeli	
13:00	Meeting at Oni Municipality	Givi Bendianishvili – Infrastructure Unit	
14:00	Site Visit		
15:00	Departure to Tblisi	3.5 hours driving by car	

**16 June, 2017, Tbilisi**

Time	Agency	Representative	
10:00	Group Meeting with -MRDI  Bank Protection Unit under the-Roads Department	Temur Kapanadze – Head of the Bank Protection Unit  Revaz Sajaia –Deputy Head of Bank Protection Unit  Temur Metreveli – Head of Monitoring of Bank Protection	
12:00	Elkana National NGO responsible for the agroforestry work	Medea Gabunia – Head of the Administration Department Programmes Coordinator	

14:00	EU ClimaEast project “Support to Climate Change Mitigation and Adaptation in Russia and ENP East Countries”	Medea Inashvili – Key Expert and Regional Coordinator	
15:00	USAID –sister project	Mariam Shotadze	
16:00	Meeting at UNDP	Shombi Sharp, DRR Nino Antadze Energy and Environment Team Leader	



**Annex 3: Site visit agenda and associated annexes****Date and duration:**

The mission in Turkmenistan was conducted from 5 June to 9 June, the mission in Georgia from 12 June to 16 June, 2017. The total duration of the portfolio monitoring mission (including travelling) was 16 days.

**Mission team composition:**

## Team in Turkmenistan:

1. Mr. Daouda Ndiaye, AFB Secretariat
2. Mr. Mikko Ollikainen, AFB secretariat
3. Ms. Martina Dorigo, AFB Secretariat
4. Ms. Nataly Olofinskaya, RTA, UNDP Turkey Regional Bureau
5. Mr. Rovshen Nurmammedov, UNDP Turkmenistan
6. Mr. Rahmanberdi Hanekov, UNDP Turkmenistan
7. Ms. Nazik Avlyakulova, UNDP Turkmenistan

## Team in Georgia:

1. Mr. Mikko Ollikainen, AFB secretariat
2. Ms. Martina Dorigo, AFB secretariat
3. Ms. Nino Antadze, UNDP Georgia
4. Ms. Natia Lipartiani, UNDP Georgia
5. Mr. Ivano Tsiklauri, UNDP Georgia

