

**Integrating climate change risks into water and flood management
by vulnerable mountainous communities in the
Greater Caucasus region of Azerbaijan**

GEF Agency: United Nations Development Programme
Executing Entities: UNDP, Ministry of Emergency Situations (MoES)
GEF Climate Change Adaptation Focal Area; GEF Project ID: 4261
UNDP PIMS: 3929; UNDP Atlas Project ID: 00079670



Photo: High altitude meteorological station in Turyanchay River Basin.

Terminal Evaluation Report
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Acronyms

APR	Annual Project Report
CBD	Convention on Biological Diversity
GEF	Global Environment Facility
Ha	hectares
KM	Kilometers
M&E	Monitoring and Evaluation
NGO	Non-governmental Organization
PIMS	Project Information Management System
PIR	Project Implementation Report
PSC	Project Steering Committee
TOR	Terms of Reference
UNDP	United Nations Development Programme
USD	United States dollars

I. Executive Summary

Table 1 Project Summary Data

Project Title:	Integrating climate change risks into water and flood management by vulnerable mountainous communities in the Greater Caucasus region of Azerbaijan			
GEF Project ID:	4261		<u>at endorsement</u> (Million US\$)	<u>at completion</u> (Million US\$)
UNDP Project ID:	3929	GEF financing:	\$2,700,000	\$2,700,000
Country:	Azerbaijan	IA/EA own:	\$260,000	\$260,000
Region:	Europe & CIS	Government:	\$7,000,000	N/S
Focal Area:	Climate Change – Adaptation (SCCF)	Other:		
FA Objectives, (OP/SP):	GEF-5 CCA-1 and CCA-2	Total co-financing:	\$7,260,000	U/A
Executing Entity:	Ministry of Emergency Situations (MoES)	Total Project Cost:	\$9,960,000	U/A
Other Partners involved:		ProDoc Signature (date project began):	March 9, 2012	
		Operational Closing Date:	July 31, 2017	

PROJECT DESCRIPTION AND OVERVIEW

1. The Azerbaijan Water and Flood Management (WFM) project is a GEF-funded full-sized project that aims to reduce vulnerability of the mountain communities of the Greater Caucasus region to climate change induced water stress and flood hazards through improved water and flood management. The project officially commenced in March 2012, implementation began in August 2012 with the inception workshop, and the project is planned for completion in July 2017. The project is in the climate change focal area of the Global Environment Facility, and is funded from the Special Climate Change Fund (SCCF). The project has GEF funding of \$2.70 million USD, and planned co-financing of \$7.26 million USD, for a total project cost of \$9.96 million. The project is executed under UNDP's Direct Implementation (NIM) modality, with the Ministry of Emergency Situations (MoES) as the main executing partner. UNDP is the implementing agency supporting execution and implementation, and is responsible for oversight of delivery of agreed outputs as per agreed project work plans, financial management, and for ensuring cost-effectiveness. At policy and strategic level the Project Board (PB) guides the project.

2. As stated in the Project Document, the project objective is *"To reduce the vulnerability of the communities of the Greater Caucasus region of Azerbaijan to water stress and hazards by improved water and flood management."* The project is structured in three outcomes, consisting of 14 outputs:

- **Outcome 1:** Water and flood management framework is modified to respond to adaptation needs and improve climate risk management
- **Outcome 2:** Key institutions have capacities, technical skills, tools and methods to apply advanced climate risk management practices for water stress and flood mitigation
- **Outcome 3:** Community resilience to floods and water stress improved by introducing locally tailored climate risk management practices.

3. The project strategic results framework, with expected indicators and targets, is included in the project document. The project results framework represents the primary foundational element for assessing project results (progress toward the expected outcomes and objective) and effectiveness.

According to GEF and UNDP evaluation policies, terminal evaluations are required practice for GEF funded full-sized projects (FSPs), and the terminal evaluation was a planned activity of the monitoring and evaluation (M&E) plan of the WFM project. As per the evaluation Terms of Reference (TORs) the terminal evaluation reviews the actual performance and progress toward results of the project against the planned project activities and outputs, based on the standard evaluation criteria: relevance, efficiency, effectiveness, results and sustainability. The evaluation assesses progress toward project results based on the expected objective and outcomes, as well as any unanticipated results. The evaluation identifies relevant lessons for other similar projects in the future, and provides recommendations as necessary and appropriate. The evaluation methodology was based on a participatory mixed-methods approach, which included three main elements: a) a desk review of project documentation and other relevant documents; b) interviews with stakeholders at local, regional and national levels; and c) field verification through visits to project sites. The evaluation is based on evaluative evidence from the project development phase through July 14, 2017, when the terminal evaluation data collection phase was completed. The desk review was begun in June 2017, and the evaluation field mission was conducted from July 10th-14th, 2017.

FINDINGS AND CONCLUSIONS ON THE MAIN EVALUATION CRITERIA

4. The Water and Flood Management Project is considered **relevant** (or **moderately satisfactory** in terms of the relevance criteria). The project is in-line with the GEF's strategic priorities for SCCF, which are also the UNFCCC strategic objectives for the SCCF. The project also support's Azerbaijan's national priorities for climate change adaptation, although the scope of the project needed to be adjusted during implementation to be more fully aligned with shifting national priorities. The project also supports the local priorities of the targeted stakeholders.

5. The relevance of the project design and strategy was not fully satisfactory at project entry, which necessitated multiple adjustments during implementation. This was due to multiple factors that included changing contextual factors beyond the control of the project, but also great over-ambitiousness in the project document, inadequate and incorrect assumptions, and significant factual errors.

6. Overall, project **efficiency** is rated **moderately satisfactory**. Highlights of the project's cost-effectiveness include a professional, dedicated and conscientious project team (day-to-day management of the project was fully satisfactory), and the fact that project management expenditures were roughly in line with the planned budget (and within GEF requirements). Adaptive management was also strong in the second half of the project, although the project would have benefited greatly if more adaptive measures had been implemented earlier. There were also a number of factors that reduced cost-effectiveness. These include the shortcomings in the project document, turnover in the UNDP-GEF RTA position, and insufficient realization of planned co-financing.

7. The WFM project has partially achieved the project objective and the three planned outcomes. The project **effectiveness** is rated **moderately satisfactory** while project **results / achievement of overall outcomes** is also rated **moderately satisfactory**. The project **effectiveness** is rated **moderately satisfactory** while project **results / achievement of overall outcomes** is rated **moderately satisfactory**. The project met (or is likely to meet), or exceeded, 2

of 14 results indicator targets. Targets for 7 of 14 results indicators are partially achieved or not yet achieved. Two results targets have not been achieved, and three results targets cannot be assessed. Key results achieved include:

- Installation of hydromet and hydro monitoring stations, covering 19,000 sq km, with potential climate change adaptation benefits for 800,000 people (exceeding original targets for both figures)
- Establishment of early warning system in Turyanchay river basin, with demonstrated real situation efficacy in June 2017
- Introduction of modern tools and technologies for water management and modeling, and increased national capacity to apply these tools and technologies
- Amendment to the law on water economy of municipalities, adopted for the national level, with well-developed proposals for additional amendments and revisions to other legislation submitted to government

8. The risks to sustainability of the project results are limited, and overall **sustainability** is considered **moderately likely**.

9. Gender equality and mainstreaming has been well-addressed under the project, although some aspects of this have not been well documented, and the project results framework indicators are not fully gender disaggregated.

LESSONS AND RECOMMENDATIONS

10. Key lessons from the WFM project are summarized below; these lessons are further elaborated in the “Lessons” section of the main report, and are supported with evidence from throughout the report.

11. **Lesson:** If significant changes in the project’s development context occur during the project development phase, it is critically important that those changes are reflected in the Prodoc; or, at least appropriate revisions should be made during the project inception phase.

12. **Lesson:** In designing a project it is likely to be more effective to focus on one sector, unless there are clear, logical, functional linkages to other sectors – particularly when financial resources are limited. The WFM project attempted to address climate change related disaster risk reduction, as well as water management related to irrigation and residential water supply. Both can be affected by climate change, and both may involve some of the same institutional partners, but there are limited synergies to be gained by trying to address these issues simultaneously.

13. **Lesson:** Project strategies should be designed to minimize dependence on external co-financing, except in cases where cash co-financing is directly contributed to the project by partners, and will be managed by the project.

14. **Lesson:** The development phase of climate change adaptation projects should carefully consider how long-term and short-term strategies are balanced in terms of generating concrete benefits. In some cases, climate change adaptation efforts may achieve more rapid and more concrete results for a larger number of people by investing directly in on-the-ground technical systems to improve resilience.

15. **Lesson:** For projects with activities that depend heavily on the extent, quality, and availability of data, a data assessment should be conducted during the project development

phase. The results from such an assessment could then be used to design the project in a way that is responsive to the realistic situation in relation to the data. Project designs should specify and include clear agreements about what data exists, how it will be accessed, and by whom.

16. The recommendations of the terminal evaluation are listed below, with the primary target audience for each recommendation following in brackets.

17. **Key Recommendation 1:** UNDP, other donors, and the government should continue to invest in a state-of-the-art hydro-meteorological monitoring system in Azerbaijan, in order to increase the coverage and reliability of hydrological and meteorological data collection in the country to support adaptation to climate risks in the future. [UNDP and other stakeholders and funders]

18. **Key Recommendation 2:** The technical expert reports produced by the project should be disseminated to relevant stakeholder institutions, and they should continue to be available online, with the support of MoES. [UNDP and MoES]

19. **Key Recommendation 3:** Technical reports should be distilled into a few shorter pamphlets or brochures that can be more widely distributed, but which draw more attention to the reports and the issue overall. [UNDP and MoES]

20. **Key Recommendation 4:** UNDP and Government of Azerbaijan should develop and pilot community-based flood risk insurance. Considering that there is little that can be done to actually stop the floods/mud flows, then an important part of the equation is helping communities respond to and recover from these disasters. This can partially be done by providing flood and risk insurance to high risk communities. [UNDP and MoES]

21. **Key Recommendation 5:** Projects should have a project-specific audit at least once during their life, preferably more than once. Although project-specific audits may not be required by UNDP procedures, they are typically helpful and result in recommendations to improve the financial and operational management of projects. [UNDP]

22. **Key Recommendation 6:** The Government of Azerbaijan should conduct an assessment of the potential negative impact of riverbed quarrying in key climate disaster risk areas. [MoES]

WATER AND FLOOD MANAGEMENT PROJECT TE SUMMARY RATINGS TABLE

Evaluation Ratings:			
1. Monitoring and Evaluation	Rating	2. Implementation & Execution	Rating
M&E Design at Entry	MS	Quality of UNDP Implementation	MS
M&E Plan Implementation	MS	Quality of Execution - Executing Agency	MS
Overall Quality of M&E	MS	Overall Quality of Implementation / Execution	MS
3. Assessment of Outcomes	Rating	4. Sustainability	Rating
Relevance	R / MS	Financial Resources	ML
Effectiveness	MS	Socio-political	L
Efficiency	MS	Institutional Framework and Governance	ML
Overall Project Outcome Rating	MS	Environmental	L
5. Impact	Rating	Overall Likelihood of Sustainability	ML
Environmental Status Improvement	N/A		
Environmental Stress Reduction	N/A		
Progress Toward Stress/Status Change	M	Overall Project Results	MS

Standard UNDP-GEF Ratings Scale

Rating Criteria	Rating Scale
Relevance	• Relevant (R) • Not-relevant (NR)
Effectiveness, Efficiency, Results, GEF principles, other lower-level ratings criteria, etc.	• Highly satisfactory (HS): There were no shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Satisfactory (S): There were minor shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Moderately satisfactory (MS): There were moderate shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Moderately unsatisfactory (MU): There were significant shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Unsatisfactory (U): There were major shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Highly unsatisfactory (HU): There were severe shortcomings in the achievement of objectives in terms of effectiveness or efficiency
Sustainability	• Likely (L): Negligible risks to sustainability, with key outcomes expected to continue into the foreseeable future • Moderately Likely (ML): Moderate risks, but expectations that at least some outcomes will be sustained • Moderately Unlikely (MU): Substantial risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on • Unlikely (U): Severe risk that project outcomes as well as key outputs will not be sustained
Impact	• Significant (S): The project contributed to impact level results (changes in ecosystem status, etc.) at the scale of global benefits (e.g. ecosystem wide, significant species populations, etc.) • Minimal (M): The project contributed to impact level results at the site-level or other sub-global benefit scale • Negligible (N): Impact level results have not (yet) been catalyzed as a result of project efforts
Other	• Not applicable (N/A) • Unable to assess (U/A) • Not specified (N/S)

II. Water and Flood Management Project Terminal Evaluation Approach

23. The terminal evaluation is initiated by UNDP, which is the GEF Agency for the project, in line with the monitoring and evaluation plan of the project. The evaluation was carried out as a collaborative and participatory exercise, and identifies key lessons and any relevant recommendations necessary to ensure the achievement and sustainability of project results.

A. Terminal Evaluation Purpose, Objectives and Scope

24. The **purpose** of the evaluation is to provide an independent external view of the progress of the project at its approximate completion, and to provide feedback and recommendations to UNDP and project stakeholders that can help strengthen the project and ensure its success following completion.

25. The **objective** of the terminal evaluation is to:

- Identify potential project design issues;
- Assess progress toward achievement of expected project results;
- Identify and document lessons that can both improve the sustainability of benefits from this project and aid in the overall enhancement of similar UNDP and GEF programming in the future; and
- Make recommendations regarding specific actions that should be taken to enhance the results of the project.

26. The **scope** of the evaluation is briefly indicated in the Terms of Reference for the evaluation, and covers the following aspects, integrating the GEF's Operational Principles, as appropriate:

- Project design, development (including decision-making and gender mainstreaming), risk assessment / management, and preparation
- Country ownership and drivenness
- Project timing and milestones
- Implementation and execution arrangements, including GEF Agency oversight
- Stakeholder participation and public awareness
- Communications
- Partnership approach
- Work planning, financial management/planning, co-financing
- Flexibility and adaptive management
- Progress toward results outcomes and impacts
- Gender integration and mainstreaming in implementation
- Sustainability
- Catalytic role: Replication and up-scaling
- Monitoring and evaluation (project and results levels) compliance with UNDP and GEF minimum standards, including SMART criteria for indicators
- Lessons learned
- Impact and Global Environmental Benefits

27. In addition, the UNDP requires that all evaluations assess the **mainstreaming of UNDP programming principles**, which include:

- UN Development Assistance Framework (UNDAF)/Country Program Action Plan (CPAP) / Country Programme Document (CPD) Linkages (as relevant)
- Poverty-Environment Nexus / Sustainable Livelihoods
- Disaster Risk Reduction / Climate Change Mitigation / Climate Change Adaptation
- Crisis Prevention and Recovery
- Gender Equality / Mainstreaming
- Capacity Development
- Rights-based Approach

28. Evaluative evidence was assessed against the main UNDP and GEF evaluation criteria, as identified and defined in Table 2 below:

Table 2. GEF and UNDP Main Evaluation Criteria for GEF Projects

Relevance
• The extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time. • The extent to which the project is in line with the GEF Operational Programs or strategic priorities under which the project was funded. • Note: Retrospectively, the question of relevance often becomes a question as to whether the objectives of an intervention or its design are still appropriate given changed circumstances.
Effectiveness
• The extent to which an objective has been achieved or how likely it will be achieved.
Efficiency
• The extent to which results have been delivered with the least costly resources possible; also called cost-effectiveness or efficacy.
Results
• The positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention. • In GEF terms, results include direct project outputs, short to medium-term outcomes, and longer-term impact including global environmental benefits, replication effects and other local effects.
Sustainability
• The likely ability of an intervention to continue to deliver benefits for an extended period of time after completion: financial risks, socio-political risks, institutional framework and governance risks, environmental risks • Projects need to be environmentally, as well as financially and socially sustainable.

B. Principles for Design and Execution of the Evaluation

29. The evaluation was conducted in accordance with the GEF M&E Policy,¹ which includes the following principles for evaluation: Credibility, Utility, Impartiality, Transparency, Disclosure, and Participation. The evaluation was also conducted in line with United Nations Evaluation Group norms and standards.²

C. Evaluation Approach and Data Collection Methods

30. The evaluation commenced June 30th, 2017 with the signing of the evaluation contract, and the evaluation field mission was carried out from July 10th – 14th, 2017.

31. The evaluation has been carried out in accordance with the guidance outlined in the UNDP Handbook on Planning, Monitoring and Evaluating for Development Results,³ and in accordance with the evaluation guidance as outlined in the GEF M&E Policy.

32. The collection of evaluative evidence was based on three primary data collection methodologies:

1. Desk review of relevant documentation (list of documents reviewed included as Annex 7 to this report).
2. Semi-structured interviews with relevant stakeholders at local, regional, and national (list of persons interviewed included as Annex 6 to this report)
3. Field visit to projects sites (evaluation field mission schedule included as Annex 8 to this report)

33. As such, the terminal evaluation process involved four main steps, which overlapped temporally:

1. Desk review of project documentation, and logistical preparation and coordination with the project team for the field visit
2. In-country field visit, including to Turyanchay river basin (project target region), and qualitative interviews with key stakeholders at the national and local levels
3. Analysis of data, follow-up to address any data gaps, and drafting of the evaluation report, then circulation to evaluation participants for additional feedback and input
4. Finalization of the evaluation report and follow-up with the project team and stakeholders

34. Individuals targeted for interviews were intended to represent the main project stakeholders, partners and beneficiaries, and those most knowledgeable about various aspects of the project. The evaluation also sought to include a representative sample covering all different types of stakeholders, including national and local government, civil society, local communities, and the private sector.

35. Ratings are provided on the required elements of the project.

¹ See <http://www.thegef.org/gef/Evaluation%20Policy%202010>.

² See http://www.uneval.org/normsandstandards/index.jsp?doc_cat_source_id=4.

³ See <http://www.undp.org/evaluation/handbook>.

D. Limitations to the Evaluation

36. All evaluations face limitations in terms of the time and resources available to adequately collect and analyze evaluative evidence. For the WFM project terminal evaluation, the main limitation was the available time to assess all aspects of the project. During the evaluation mission the evaluator was not able to visit all of the project field sites, or meet with all potential stakeholders. However, the key project field sites were visited, and the key stakeholders met. For many projects, having project documents available only in the local language can be an issue. However, because the WFM project utilized a large number of international experts, both for production of primary outputs and for support for national experts, a majority of the project documentation was available in English. However, a number of documents and information requested for the evaluation were not available for a variety of reasons, including a transition in the UNDP online project management system. Altogether the evaluation challenges were manageable, and the evaluation is believed to represent a fair and accurate assessment of the project.

III. Project Overview

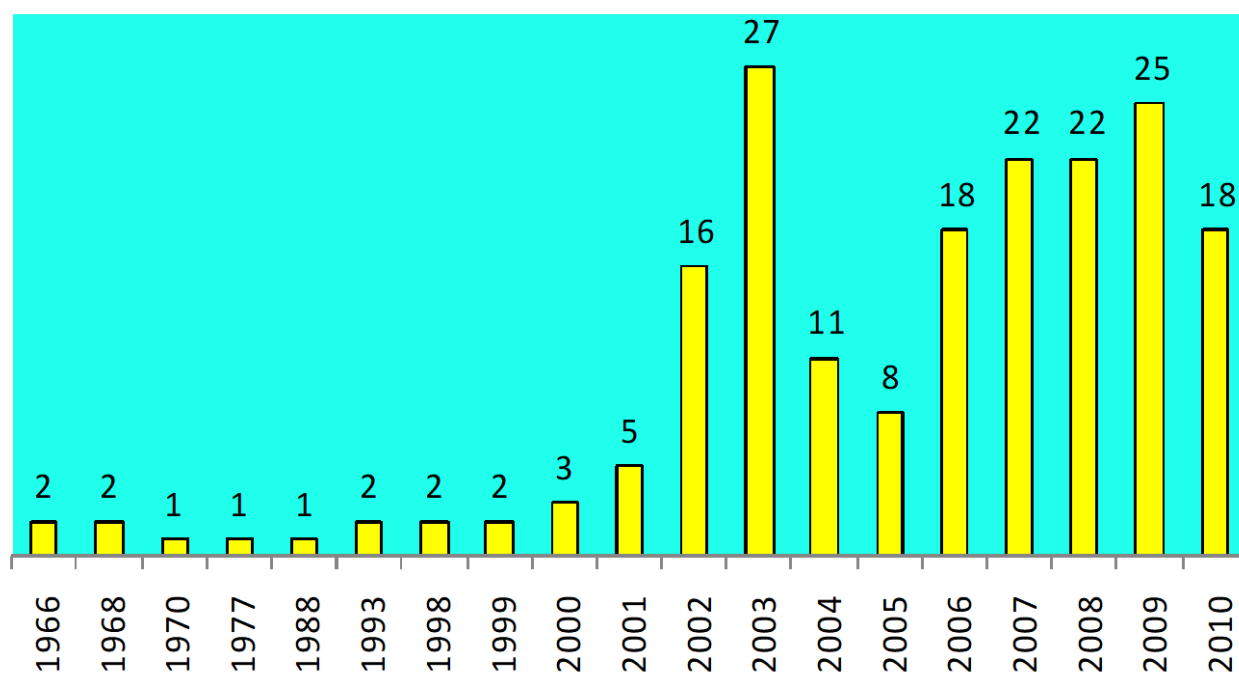
A. Water and Flood Management Project Development Context

37. This section contains a brief description of the project development context. It draws mainly from the project document, which contains more extensive and detailed information.

38. Azerbaijan as a whole is considered to be a water stressed country, with current surface water resources estimated at less than 10 BCM generated within the country (though there are also resources from transboundary rivers). Azerbaijan's recently completed Second National Communication (SNC) to the United Nations Framework Convention on Climate Change (UNFCCC) forecasts that climate change effects will reduce overall water resources by 23% during the 2021 to 2050 period, compounding the current water deficits. Currently, water use is lower than it had been 20 years ago because of the economic downturn following independence. The continuing recovery of the rural agricultural sector will drive water demands. Highly effective water resources management will be necessary to minimize water stress in these rural communities.

39. Azerbaijan also experiences significant and damaging flooding. Floods in 2003 caused over \$US 50 million in losses and damaged over 7,150 private and public buildings. A 100-year flood event would inundate 15,000 km², affect 300,000 people, and result in damages on the order of \$400 million, according to a recent ADB study on flooding. The frequency of flood events is increasing due to climate change effects. Figure 1 below (based on data from the Azerbaijan SNC) shows a clear trend in increased flooding over the last several decades.

Figure 1 Floods Observed in Azerbaijan



40. The region of the country initially targeted by the project is the Greater Caucasus foothills, as shown in Figure 2. The proposed project region of the Greater Caucasus of Azerbaijan has been identified as particularly vulnerable to both water stress and flooding. Floods and flood damages occur frequently across the region, with more than 150 damaging floods in the region in last 50 years. The floods of 1999 were the largest and most damaging of the last 100 years. Though the only two major floods that year, they were both severe and damaging on a large scale. Hardest hit were the Demiraparanchay and Turyanchay rivers (one of the three proposed pilot sub-basins), which caused flooding of over 70 settlements, seriously damaging the local economy and killing livestock. Several major floods also occurred between 2002 and 2010 with significant damage in the Greater Caucasus area affecting 82 communities with a total population of 246,000, damaging some 138,000 ha of cultivated area, and destroying public infrastructure. It is estimated that average annual flood damages in the Greater Caucasus Region amounts to \$US 18-25 million for infrastructure alone.

41. The project initially targeted three river sub-basins: the Talachay, Kishchay, and the Turyanchay rivers. During the course of implementation this focus was initially narrowed to primarily implement activities in the Turyanchay river, the largest of the three sub-basins, with the idea that the experience from this sub-basin would then be replicated in the other two.

42. However, by the end of the project the project's geographic scope had expanded to include the Kura river basin, including the Mingecevir reservoir, the largest in the country. The Mingecevir reservoir is also shown in Figure 2, as the large body of water. The Kura river drains a large area of the Caucasus (see Figure 3), into Azerbaijan; it is a transboundary river that has multiple names, depending on which country it is flowing through, including the M'tkvari (in Georgia).

Figure 2 Original Project Target Region: Communities of the Greater Caucasus Foothills

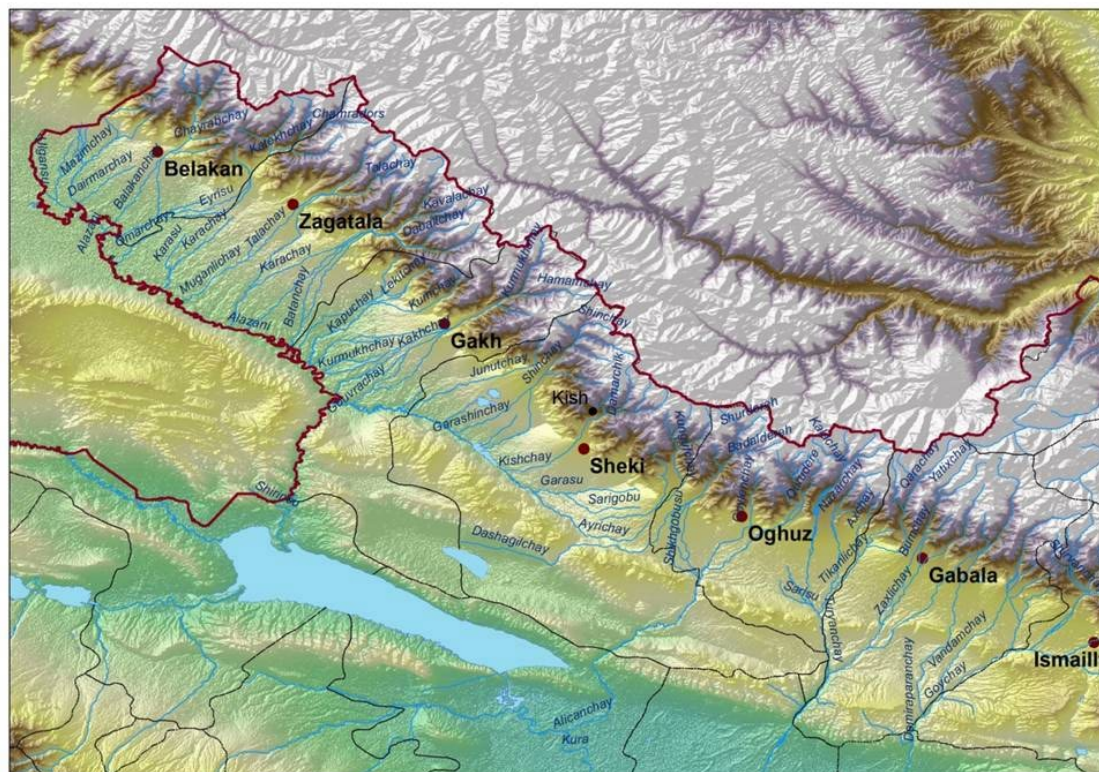


Figure 3 Kura River Basin



B. Problems the Water and Flood Management Project Seeks to Address

43. The project document identifies the following barriers to effectively mitigating and responding to climate-induced flood and water management issues:

- ***Barrier 1:** Water legislation and policy do not reflect the growing challenges of managing risk associated with climate change.*
- ***Barrier 2:** Institutional capacity is insufficient to meet the challenges of climate risk management.*
- ***Barrier 3:** Communities are unable to participate in assessing and making decisions related to adapting themselves to climate change risks.*

C. Water and Flood Management Project Description and Strategy

44. The WFM project has GEF funding of \$2.70 million USD, allocated from the Special Climate Change Fund (SCCF) within the climate change focal area.⁴ The project has planned co-financing of \$7.26 million USD (of which \$0.26 million is cash UNDP TRAC funding), for a total project cost of \$9.96 million. The project is executed under UNDP's National Implementation (NIM) modality, with the Ministry of Emergency Situations (MoES) as the main executing partner. UNDP is the implementing agency supporting execution and implementation, and is responsible for oversight of delivery of agreed outputs as per agreed project work plans, financial management, and for ensuring cost-effectiveness.

45. As stated in the Project Document, the project objective is *"To reduce the vulnerability of the communities of the Greater Caucasus region of Azerbaijan to water stress and hazards by improved water and flood management."* The project is structured in three outcomes (responding to the three barriers identified above), consisting of 14 outputs:

- **Outcome 1: Water and flood management framework is modified to respond to adaptation needs and improve climate risk management**
 - Output 1.1. A package of five Normative Legal Acts (regulations) developed on climate resilient water management at the sub-basin level.
 - Output 1.2. The Water Code, Land Code and other related legislation revised to account for climate change risks.
 - Output 1.3. Conjunctive Water Management (CWM) model and guidelines for surface and groundwater use under climate change conditions.
- **Outcome 2: Key institutions have capacities, technical skills, tools and methods to apply advanced climate risk management practices for water stress and flood mitigation**
 - Output 2.1. Targeted training program in adaptive water and flood management, scenario planning and risk assessment for MoES and other stakeholders.
 - Output 2.2. Soil and water assessment tool (SWAT) introduced for watershed level climate risk assessment and planning.

⁴ As per the UNFCCC, "The Special Climate Change Fund (SCCF) was established under the Convention in 2001 to finance projects relating to: adaptation; technology transfer and capacity building; energy, transport, industry, agriculture, forestry and waste management; and economic diversification." See http://unfccc.int/cooperation_and_support/financial_mechanism/special_climate_change_fund/items/3657.php.

- Output 2.3. Model flood risk hazard maps and participatory mapping processes improve flood management as part of the land use planning and management.
- Output 2.4. Hydro-meteorological observation capacity strengthened by extending the coverage by automated hydro-met stations in the highly hazard prone areas.
- Output 2.5. Community-based early warning systems to disseminate water stress and flood risk information to the local communities.
- Output 2.6. Capacity of WUA farming communities increased to adapt to climate change by improving soils and managing land and water.
- **Outcome 3: Community resilience to floods and water stress improved by introducing locally tailored climate risk management practices.**
 - Output 3.1 Water User Associations strengthened to improve forecasting and response planning mechanisms, and watershed planning and management skills to cope with CC-induced water stress and floods.
 - Output 3.2 Local multi-stakeholder committees established to test and introduce participatory and consensus-based land use planning that integrates climate risks.
 - Output 3.3 Pilot climate-risk oriented watershed management plans initiated in each pilot catchment to implement sustainable water and flood management measures and fully account for climate change risks from floods and associated mudflows.
 - Output 3.4 Pilot CR-WMP processes replicated across Greater Caucasus region.
 - Output 3.5 Locally tailored public information campaign implemented to make flood-prone communities aware of flood risks and effective risk management.

46. The project strategic results framework, with expected indicators and targets, is included in the project document (p. 25 of the project document). The specific results expected from the project are highlighted in the project results framework, included as Annex 10 to this evaluation report (with an assessment of achievement of planned results targets; see further discussion in later Section VI on Results and Effectiveness).

D. Implementation Approach and Key Stakeholders

i. Implementation Arrangements

47. Day to day project management was managed by a project manager, with support from a project assistant, with the project team based in an office building of the MoES. However, direct oversight of the project management and implementation was carried out by the UNDP Country Office, as the project manager was contracted by UNDP (on behalf of the government). The project then contracted a suite of national and international experts to carry out project activities and generate the respective output deliverables in the form of an extensive set of technical reports.

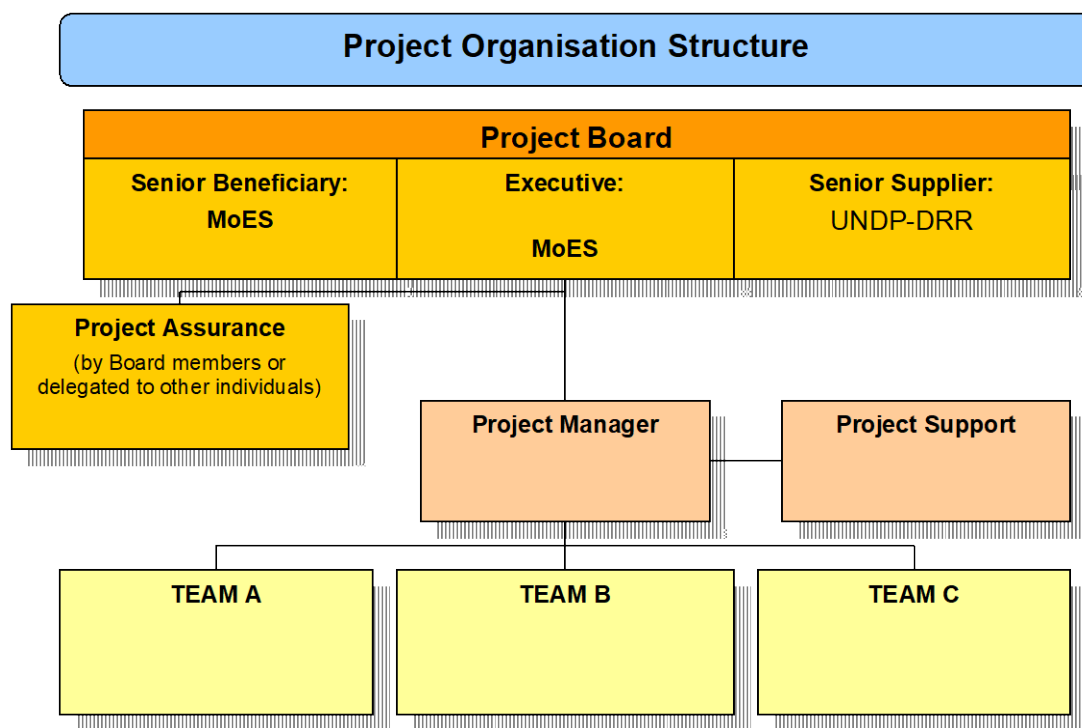
48. A Project Board (PB) was instituted as the executive decision making body for the project. The project document defines the constitution of the Project Board as such: Deputy head of MoES, the Director of the MoES/SAWR, the UNDP Deputy Resident Representative (DRR), and the Representative of UNDP's Energy and Environment Unit Azerbaijan. The Project Board was to serve the standard Project Board oversight role for UNDP-GEF projects, as per the Prodoc:

“The Project Board will be the executive decision making body for the project, providing guidance to the Project Manager and approving project revisions, annual workplans and budgets. It will be responsible for reviewing project progress reports, the risk log, issue log and the monitoring and communication plan. The Project Board (PB) is responsible for making management decisions for a project in particular when guidance is required by the Project Manager. The Project Board plays a critical role in project monitoring and evaluations by quality assuring these processes and products, and using evaluations for performance improvement, accountability and learning. It ensures that required resources are committed and arbitrates on any conflicts within the project or negotiates a solution to any problems with external bodies. In addition, it approves the appointment and responsibilities of the Project Manager and any delegation of its Project Assurance responsibilities. Based on the approved Annual Work Plan, the Project Board can also consider and approve the quarterly plans (if applicable) and also approve any essential deviations from the original plans.”

49. The project implementation and oversight structure did not include a project “steering committee” with wider stakeholder representation.

50. The Project Board met approximately annually (with multiple meetings in 2013) but apparently without a meeting in 2016 (no record of the meeting was provided for the evaluation).

Figure 4 Project Implementation Structure⁵



51. The project implementation start-up approximately followed the timeline indicated below:

⁵ Source: Project Document.

- March 2012 Project agreement signed between UNDP and the Government
- July 2012 Project Implementation Unit established
- August 2012 Project inception workshop and Steering Committee meeting
- September 2012 Project coordinator/administrator appointed
- November 2012 Stakeholders meeting and site visit
- December 2012 Field Trip report and Initial Study Report
- January 2013 Recruitment of CTA
- April 2013 CTA appointed
- June 2013 Steering Committee meeting
- August 2013 National consultants appointed
- October 2013 International consultants appointed
- November 2013 Stakeholders meeting and community meetings
- December 2013 CTA technical report, project activity plan and Inception Report

ii. Key Stakeholders

52. The stakeholders for this project include the major government bodies and institutions related to water management, disaster management and disaster risk reduction, and climate change. The Prodoc (in project document annex 4, pp.67-8) includes a table summarizing the main stakeholders, and their relationship to the project, reproduced below (see Table 3).

Table 3 Key Stakeholders for the WFM Project and Their Relationship to the Project

Primary Relevant Institutions	Envisioned roles and responsibilities in the project.
National level	
Ministry of Emergency Situations (MoES)	Project Director will come from MoES. Will be member of Project Board. Key participants in Outputs 1.1 -1.3, Outputs 2.1 – 2.6, and Outputs 3.2 – 3.5. Regional office in Gabala will play an important role in replication (Output 3.4) Staff at rayon level will be key participants in project inspired local stakeholder committees (LSC) to be formed.
<i>State Agency for Water Reserves (SAWR)</i>	Agency still being created. Preliminary list of possible roles and responsibilities: - Management of mountain rivers - Protection of territories and people from floods - Informing them about approaching flood-related disasters (in collaboration with Hydromet and others) Construction of protective structures Responsible for safety of canals, water collectors
<i>Greater Caucasus Northwest Regional Center - MoES</i>	Located in Gabala, this will be a key counterpart of project's work in the GC region for MoES. All MoES work in the Greater Caucasus goes through this center.
Ministry of Ecology and Natural Resources (MoENR)	Will be member of Project Board. Key participants in Outputs 1.1 -1.3, Outputs 2.1 – 2.6, and Outputs 3.2 – 3.5. Regional centers #9 and 11 will play an important role in replication (Output 3.4) Staff at rayon level will be key participants in project inspired local stakeholder committees (LSC) to be formed.
<i>Department of Ecology and Environmental Protection</i>	Key actors under Outcome 1, with all outputs related to law and policy.

Policy	
<i>Regional Office on Hydrometeorology (MoENR)</i>	The key actor under Output 2.5 and important participant under Output 2.6. In addition to the regional center in Sheki, there is a Hydromet representative in each rayon who will be an important member of the LSC at the rayon level. Separate Center in Sheki will play important role in replication.
<i>Regional Office on Environment and Natural Resources.</i>	Key offices to facilitate replication of improved vulnerability reduction practices across the GC region (Output 3.4)
Department of Geological Research and Engineering	Provides approval for usage of ground waters ("clears" applications). Important actor under Outputs 1.3 and 2.3.
Amelioration and Water Facility Joint Stock Company (AJSC)	Will be member of Project Board. Key participants in Outputs 1.1 -1.3, Outputs 2.1 – 2.6, and Outputs 3.2 – 3.5. Regional offices in Sheki and Gabala will play an important role in replication (Output 3.4). Staff at rayon level will be key participants in project inspired local multi- stakeholder committees (LSC) to be formed. Drills groundwater wells for amelioration.
Parliamentary Commission on Energy and the Environment.	Will play a central role in all outputs under Outcome 1 as the key consultative body and venue for many round table expert working group discussions.
AzerSu Joint Stock Company	Will be member of Project Board
	Key participants in Outputs 2.1 – 2.6, and Outputs 3.2 – 3.5. Staff at rayon level will be key participants in project inspired local stakeholder committees (LSC) to be formed. Drills groundwater wells for drinking water purposes.
The State Land and Cartography Committee	Will be a key player in the LSCs and their work on CR-WMP development (Outcome 3.3) as they are responsible for land mapping and other related tasks.
Ministry of Agriculture	Staff at rayon level will be key participants in project inspired local stakeholder committees (LSC) to be formed.
Regional office of National Academy of Science (Sheki)	Members will play an important role in expert working groups which are formed to produce key outputs.
NGOs	
Alazani River Basin Council (Ganikh River)	This was established under an EU-TACIS project for a transboundary water management body. As such it is concerned with more macro-scale issues, but will be a stakeholder as activities in the project region will impact the larger Alazani (Ganikh) River basin.
Association on International Hydrological Program	This is a programme established between Armenia, Georgia and Azerbaijan to share hydrological information across borders to counter flooding. It is part of a planned large scale warning system. While on a much larger scale, there may be shared lessons important to both initiatives.
Local NGOs	Will play an important role in LSCs under Outcome 3.3 and in public awareness raising under Outcome 3.5.
Local level/regional level	
Rayon Executive Authority	Key stakeholder under Outcomes 2 and 3, particularly the demonstrating and adoption of new tools and planning approaches. Primary host/chair of each respective LSC. Deputy Executive of Rayon chairs the Commission of Emergency Services.
<i>Commission on Emergency Situations (CoES)</i>	Rayon level entity that is chaired by the Deputy Rayon Executive. Comprised of members representing the major ministries and agencies working in each respective rayon, the CoES is called together for emergency response or in cases of preparation for emergency response. One of the key entities through which this project will work at the rayon level.
Municipalities	Key stakeholder under Outcome 3.
Water User Associations	Key local –level stakeholder institution with which the project will interact on a

	number of levels. ¹³ Will play key roles in the demonstrating and piloting of new tools, zoning and planning approaches. Will be an important target for training and capacity building under Output 2.1.
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E. Key Milestone Dates

53. Table 4 below indicates the key project milestone dates. The project was planned for a 60-month implementation period. At the PIF stage, the project start was foreseen for September 2011, with project completion in October 2016. However, based on the Prodoc signature date of March 2012 (marking the official start of the project) the expected completion date would have been March 2017. The project received a five-month no-cost extension, and the actual completion date is August 2017. The project will then be financially closed at the end of UNDP's fiscal year, December 31, 2017. The actual implementation period, from inception workshop to operational completion is approximately 5 years (61 months). The total lifespan of the project (not counting the undetermined amount of time spent developing the concept up to PIF submission) is 94 months, or almost 8 years.

Table 4 Water and Flood Management Project Key Milestone Dates⁶

Milestone	Expected Date [A]	Actual Date [B]	Months (Total)
1. PIF Submission	N/A	April 28, 2010	
2. PIF and PPG Approval Date	May 12, 2010	May 13, 2010	0.5 (0.5)
3. Planned PPG Start	July 2010	N/S	2 (2.5)
4. GEF Council Approval (Work program inclusion)	June 2010	November 1, 2010	4 (6.5)
5. PPG Completion	July 2011	September 2011	10 (16.5)
6. Revised Prodoc submission	N/S	September 6, 2011	0 (16.5)
7. GEF CEO Endorsement	July 2011	September 21, 2011	0.5 (17)
8. Implementation Start (UNDP-Government Prodoc signature)	September 2011	March 9, 2012	5.5 (22.5)
9. Inception Workshop	June 2012	August 1, 2012	5 (27.5)
10. Mid-term Evaluation	April 2014	March 2015	32.5 (60)
11. Terminal Evaluation	May 2017	July 2017	28 (88)
12. Project Operational Completion	October 2016	August 31, 2017	2 (90)
13. Project Financial Closing	December 31, 2016	December 31, 2017	4 (94)

⁶ Sources: 1.A. Not applicable; 1.B. PIF document milestone dates; 2.A. As per GEF Secretariat business standards (10 business days); 2.B. GEF Secretariat Review Sheet; 3.A. PPG Implementation Plan; 3.B. Not specified; 4.A. PIF Milestone dates; 4.B. GEF Online PIMS; 5.A. PPG Implementation Plan; 5.B. Submission of final Prodoc to GEF Secretariat; 6.A. Not specified; 6.B. Revised Prodoc Date; 7.A. PIF document milestones dates; 7.B. GEF Online PIMS and GEF Endorsement Letter; 8.A. PIF milestones dates; 8.B. Date of Prodoc signature; 9.A. Within 3 months of GEF approval, as per UNDP and GEF requirements; 9.B. Project inception report and press release; 10.A. PIF milestone dates; 10.B. Date of MTR Report; 11.A. Three months before project completion, as per UNDP requirements; 11.B. Terminal evaluation field mission; 12.A. PIF Milestones dates; 12.B. Project team and project documentation; 13.A. End of fiscal year in which project is completed, as per UNDP procedures; 13.B. Expected date of project financial closure.

EVALUATION FINDINGS AND CONCLUSIONS

IV. Relevance

A. Relevance of the Water and Flood Management Project Objective

54. The Water and Flood Management Project is considered **relevant** (or “moderately satisfactory” in terms of the relevance criteria). The project is in-line with the GEF’s strategic priorities for SCCF, which are also the UNFCCC strategic objectives for the SCCF. The project also support’s Azerbaijan’s national priorities for climate change adaptation, although the scope of the project needed to be adjusted during implementation to be more fully aligned with national priorities. The project also supports the local priorities of the targeted stakeholders.

55. The relevance of the project design and strategy was not fully satisfactory at project entry (as further described below), which necessitated multiple adjustments during implementation. This was due to multiple factors that included changing contextual factors beyond the control of the project, but also great over-ambitiousness in the project document, inadequate and incorrect assumptions, and significant factual errors.

i. Relevance to GEF and UNFCCC Strategic Climate Change Adaptation Objectives

56. The GEF has limited financial resources so it has identified a set of strategic priorities and objectives designed to support the GEF's catalytic role and leverage resources for maximum impact. Thus, GEF supported projects should be, amongst all, relevant to the GEF's strategic priorities and objectives for the SCCF. The project was approved and is being implemented under the SCCF Results Based Management Framework, within the GEF-5 replenishment.⁷ Under the GEF-5 SCCF strategic objectives, the project’s objective is directly in line with and supportive of Objective CCA-1 relating to reduced vulnerability, and Objective CCA-2 relating to increased adaptive capacity (see Table 5 below). The project contributes to the outcome and output indicators, with some project Strategic Results Framework indicators that directly feed into the respective indicators and targets for the relevant GEF-5 SCCF strategic objectives, as captured in the AMAT tool.

Table 5 GEF-5 SCCF Strategic Objectives Supported by the WRM Project

LDCF/SCCF Objective CCA-1: Reducing Vulnerability: Reduce vulnerability to the adverse impacts of climate change, including variability, at	Outcome 1.2: Reduce vulnerability to climate change in development sectors	Output 1.2.1: Vulnerable physical, natural and social assets strengthened in response to climate change impacts, including variability
	Indicator 1.2.2: Economic losses through effective climate resilient infrastructure (\$US) Indicator 1.2.3: Economic losses through management (establishment, maintenance, etc.)	Indicator 1.2.1.2: Type and No. resilient infrastructure measures introduced to prevent economic losses

⁷ For the SCCF strategic priorities for GEF-5, see GEF document “Reference Guide: Focal Area Results Framework and LDCF/SCCF Framework. Excerpts from GEF-5 Programming Document at the Sixth Meeting for the Fifth Replenishment of the GEF Trust Fund, April 7, 2010.”

local, national, regional and global level	of climate resilient natural assets (\$US) Indicator 1.2.9: Lives saved through an integrated disaster response to extreme climate events (No. of lives)	Indicator 1.2.1.3: Type and No. of climate resilient natural asset management measures created to withstand prevent economic losses Indicator 1.2.1.6: Type and No. of water management practices introduced to increase access to irrigation water (Type and No.) Indicator 1.2.1.9: Type and No. of integrated disaster response measures to extreme climate events introduced to increase number of lives saved (Type and No.)
LDCF/SCCF Objective CCA-2: Increasing Adaptive Capacity: Increase adaptive capacity to respond to the impacts of climate change, including variability, at local, national, regional and global level	Outcome 2.1: Increased knowledge and understanding of climate variability and change-induced threats at country level and in targeted vulnerable areas	Output 2.1.1: Risk and vulnerability assessments conducted and updated
		Indicator 2.1.1.1: Updated risk and vulnerability assessments (Yes/No) Indicator 2.1.1.2: Risk and vulnerability assessment conducted (Yes/No)
	Indicator 2.1.1: Relevant threat information disseminated to stakeholders on a timely basis (Yes/No) Indicator 2.1.2: Vulnerability and risk perception index, disaggregated by gender (Score)	Output 2.1.2: Systems in place to disseminate timely risk information
		Indicator 2.1.2.1: Type and no. of monitoring systems in place (Type and No.)

57. The GEF is a financial mechanism for the UNFCCC, and has been delegated by the UNFCCC COP to oversee the administration of the SCCF. As per the UNFCCC “The Global Environment Facility (GEF), as an operating entity of the Financial Mechanism, has been entrusted to operate the SCCF. In 2004, the GEF Council approved a programming document which provides the operational basis for funding activities under the SCCF.”⁸ Given this, the project is clearly supportive of UNFCCC climate change strategic priorities as well, as indicated above. The project is also supportive of the UNFCCC Cancun Adaptation Framework (CAF).⁹

ii. Relevance to National Strategies and Local Priorities

58. In Azerbaijan’s second National Communication to the UNFCCC the below adaptation measures are proposed in relation to water management¹⁰, with those that are supported by the WFM project identified in **bold**:

⁸ See

http://unfccc.int/cooperation_and_support/financial_mechanism/special_climate_change_fund/items/3657.php.

⁹ See <http://unfccc.int/adaptation/items/5852.php>.

¹⁰ Pp. 66-7, “Second National Communication to the United Nations Framework Convention on Climate Change,” Ministry of Ecology and Natural Resources, Republic of Azerbaijan, 2010.

- Reducing water leakages in water management facilities;
- **Introduction of additional sources of water;**
- **Use of hydrologic cycle water, including groundwater;**
- **Regulation of flows;**
- **Taking protective engineering measures in stream beds of lakes and rivers against floods;**
- Building small HESs on mountain rivers and construction of new water impoundments;
- Building small HESs on existing irrigation channels;
- **Clean-up of river channels, etc.**

59. In addition, it is clear that the project is supporting local priorities related to water resource management and disaster risk reduction from climate change-related vulnerability. Specifically, the local communities in the lower watersheds of the Turyanchay and Kura rivers have clearly expressed interest and willingness to reduce their vulnerability to floods with increased frequency and severity related to climate change. This was further validated and emphasized during project implementation by the strong engagement of local stakeholders in project activities (trainings, workshops, etc.).

iii. Relevance of UNDP Country Strategies and Priorities for Azerbaijan

60. The project document directly identifies on the cover page the UNDP strategic priorities for Azerbaijan that are supported by the project. These are:

- **UNDAF Outcome(s):** Outcome 1. By 2015, non-oil development policies result in better economic status, decent work opportunities and a healthier environment in all regions and across all social groups
- **UNDP Strategic Plan Environment and Sustainable Development Primary Outcome:** Goal 4: Managing Energy and the environment for sustainable development. Outcome 3: Strengthened capacity of developing countries to mainstream climate change adaptation policies into national development plans
- **UNDP Strategic Plan Secondary Outcome:** Outcome 4: Strengthened capacity of local institutions to manage the environment and expand environment and energy services, especially to the poor
- **Expected CP Outcome(s):** Outcome 1.3. Relevant national strategies, policies, and capacities strengthened to address environment degradation, promote the green economy, and reduce vulnerability to climate change
- **Expected CPAP Outputs:**
 - Output 1.3.3. Priority ecosystems/economic sectors vulnerable to climate change identified, strategies for improving their resilience developed
 - Output 1.3.6. Improved water resource management and strengthened transboundary cooperation on this issue in the Kura-Araz River Basin

61. The terminal evaluation has validated and verified that the actual project implementation has in fact contributed to the achievement of these strategic priorities.

B. Relevance of the Project Approach: Project Strategy and Design

62. Project Design Quality at Entry: On the whole the project document had a number of issues that made the project design ultimately unworkable, therefore requiring significant adjustments to the project outputs and activities. Some of these major issues are highlighted below. However, on the whole the project design was highly overambitious, made multiple incorrect assumptions (e.g. data quality and availability), did not include sufficient stakeholder consultation, and had critical factual errors. This implies that the project design process and the project document were not subjected to an adequate quality assurance process.

63. Strategic Focus: The project strategy included a dual-focus related to water. On the one hand the project sought to address disaster risk reduction aspects related to potential catastrophic flooding in the communities in the foothills of the southern caucuses mountains. At the same time, the project also attempted to address the management of water in terms of irrigation and groundwater. The rationale for this strategic dual focus is not fully clear, other than the fact that both issues can relate to climate change adaptation, and many of the relevant institutional partners can have mandates related to both issues. However, otherwise there is not significant functional overlap between disaster risk reduction and water management for agriculture and household water supply. The dual focus of the project strategy (and the lack of conceptual clarity defining the strategic linkage between these two issues) resulted in the project being less effective on both fronts than it would have been had it been able to focus strictly on one issue or the other; this is an important lesson from this project. It could have been possible to address both issues effectively with much more time and financial resources, but the project did not have this luxury.

64. Institutional Framework: One issue faced by the project was that the institutional context changed during the project development process. Initially the expected project partner was the Ministry of Ecology and Natural Resources (as indicated in the PIF, in April 2010), which includes the Hydrometeorology Department; this ministry had responsibility for flood forecasting. However, on May 4th, 2010 (only six days after the submission of the PIF), heavy rains caused flooding along the Kura river throughout central Azerbaijan, downstream from the Mingecevir Reservoir. As described by one source, "On 4 May 2010 heavy rains caused flooding in 40 districts surrounding the Kur (Kura), Azerbaijan's main river. Three people lost their lives and the total number of affected people in seven regions is around 70,000. Only in Sabirabad district and its 11 villages more than 24,000 people have been affected. Some 20,000 houses have been flooded, 300 of them ruined, and more than 2,000 houses are under threat to be destroyed. Around 50,000 hectares of cultivated land and pasture are under water."¹¹

65. Unfortunately this disaster was partly due to poor capacity in flood forecasting, leading to poor advance-management of the Mingecevir Reservoir water level. Therefore the heavy rains caused the reservoir level to rise such that emergency spillways had to be fully utilized in order to avoid catastrophic damage to the dam, thereby resulting in the downstream flooding.

¹¹ International Federation of Red Cross and Red Crescent Societies, May 18th, 2010. See: <http://www.ifrc.org/docs/appeals/10/MDRAZ002do.pdf>.

66. This disaster had two implications for the project. First was that the government apparently decided to restructure the institutional framework related to water management in order to improve flood forecasting capacity, and therefore in the spring of 2011 created the State Agency for Water Reserves (SAWR), under the Ministry of Emergency Situations (MoES). Mid-way through the project development period the SAWR became the project's new implementing partner, and the MoES the new ministry responsible for the project. An increased government commitment to water management issues and to increased capacity related to flood-related disaster risk reduction was nominally a positive turn of events for the project, but the timing – in the midst of project development – was problematic. Further, the project's new institutional partner, the SAWR, had extremely limited capacity since it had just been established mid-way through the project development period. A final negative repercussion for the project was that the Ministry of Ecology and Natural Resources may have perceived the situation as the project being “taken away” from them, and did not fully engage as a key partner during project implementation.

67. Geographic Focus: The second major implication of the May 2010 Kura river floods was that the government's priority for reducing flood risks shifted from the communities of the southern Caucasus to the central part of the country within the Kura watershed. Consequently the project had trouble securing full government support for project activities focused on the southern caucuses foothills, up to the point in 2015 (after the mid-term review) that the project expanded its geographic scope to include the Kura basin. As one project stakeholder described, “When the project started to work with [MoES], they requested some changes from the mountain areas to the Kura basin, providing their own justifications. But [the project] had some problems with the UNDP-GEF RTA who said [the project] can't change the area. So [the project] was working for a time on work that was not that interesting to the ministry.”

68. This issue was likely a significant factor in hampering the project in two important ways. First, the project did not have the full buy-in, and political and institutional support of its key government partner, the MoES. Second, the project design was heavily dependent on a significant amount of government co-financing – the government co-financing was planned as \$7,000,000 USD. Many of the expected project results were directly dependent on the government cash co-financing, which was, for example, to be invested in meteorological monitoring hardware (see additional discussion in later Section V.G on co-financing).

69. The changes in the institutional context and geographic focus that occurred during the project development phase were not adequately incorporated into the project design as codified in the Prodoc. For example, the Prodoc, which was submitted in September 2011, does not even mention the May 2010 Kura floods. Given that the changed context was not adequately incorporated in the Prodoc, it would have been critical to make the relevant adjustments at the inception phase, which also did not happen.

70. Technical Approach: A final problematic aspect of the project design was that a number of outputs and activities outlined in the project document were apparently designed based on faulty assumptions, and were infeasible. Some of the faulty assumptions were summarized in the 2016 PIR:

- “As a direct result of lack of reliable data and information, meaningful water resource plans are no longer possible.

- Likewise, from an early stage, it was recognized that flood prediction would be, at best, indicative, again due to poor basic data. These uncertainties have impacted on other project activities.
- Flood maps cannot now be prepared in a definitive way, although preliminary, indicative maps have been produced and discussed with the communities.
- This also precludes progress on flood zoning, other than in a qualitative manner. Local communities have been appraised of this concept, but, in the absence of definitive information, no further actions have been or can be taken at this time.
- Likewise, water resources data, essential for meaningful planning, is sparse and insufficient for serious planning.”

71. These issues consequently affected many aspects of the project plans. Output 1.3 related to application of a “Conjunctive Water Management model” was integrated into the project’s work under Output 2.2. This output (2.2) was also significantly revised, changing the methodology from the Soil and Water Assessment Tool (SWAT) to the “WEAP” model. Output 2.3 related to flood risk mapping could only be carried out to a limited extent, due to the poor quality of the existing data (which should have been validated during the project preparation phase). Output 2.6 and Output 3.1, related to Water User Associations, were inadequately designed, and the project significantly revised the activities under these outputs, based on the capacity and mandates of the existing WUAs. The project completely dropped Output 3.2 related to participatory land-use planning because it was not actually relevant to the situation on the ground in the upstream catchment areas. Output 3.3 aimed to pilot “climate-risk oriented watershed management plans”, which, according to project participants, “is just not going to happen” based on the lack of local level capacity, and lack of sufficient examples. Output 3.4 was also consequently dropped, as it involved replicating Output 3.3. Therefore at least eight of the project’s 14 outputs had to be significantly revised due to inadequate planning and poor assumptions.

V. Project Management and Cost-effectiveness (Efficiency)

72. Overall, project **efficiency** is rated **moderately satisfactory**. Highlights of the project’s cost-effectiveness include a professional, dedicated and conscientious project team, and the fact that project management expenditures were roughly in line with the planned budget (and within GEF requirements). Adaptive management was also strong in the second half of the project, although the project would have benefited greatly if more adaptive measures had been implemented much earlier. There were also a number of factors that reduced cost-effectiveness. These include the shortcomings in the project document (as previously discussed in Section IV.B above), turnover in the UNDP-GEF RTA position, and insufficient realization of planned co-financing.

A. Implementation, Including UNDP Oversight

73. UNDP is the responsible GEF Agency for the project, and carries general backstopping and oversight responsibilities. The WFM project may be the rare instance where UNDP did not fully meet its normally high standards as an implementing agency in terms of the quality of oversight

and support provided to the project – at least up to the point where the current Regional Technical Advisor was in place, in mid-2015. As of the end of the project, implementation, including UNDP oversight, is considered satisfactory. However, for the majority of the project's life, including from the project development period up to mid-2015, UNDP oversight was moderately unsatisfactory. Therefore, as a whole, this aspect of the project is considerably ***moderately satisfactory***.

74. There are three key aspects of the project where UNDP's oversight was not fully adequate. First, the quality-at-entry of the project document was much lower than standard practice, implying that there were not sufficient quality assurance procedures in place. As discussed in Section IV.B, the project design and strategy was misguided and based on faulty assumptions; further, the project document did not adequately reflect changes in the national context that occurred during the project development phase. In addition, for example, there were critical factual errors – such as the baseline and target figures in the top-line indicators in the project results framework. This poor quality of entry created multiple issues for the project team during implementation.

75. Second, at the project inception phase, there was not sufficient risk monitoring and adaptive management to reflect the changes in national context that had taken place during the project development phase. If it was not possible to capture these changes in the project document itself during project development, then there could at least have been a re-adjustment at the project inception phase.

76. Third, during project implementation the project did not receive proper guidance related to the potential for adaptive management. According to multiple project participants, the responsible UNDP-GEF Regional Technical Advisor repeatedly indicated that the project could not adjust the outputs or scope of the project, even if the objective and project outcomes remained consistent. This was not fully accurate, and the current RTA quickly resolved this issue once they were in place.

77. Exacerbating the situation was the fact that there was a high degree of turnover in the position of UNDP-GEF Regional Technical Advisor responsible for the project. There was one RTA during the project development period, and then a second RTA during the first half of the project. Then there was a one-year gap between RTAs from mid-2014 to mid-2015 (a critical period for the project), although UNDP implemented back-up support procedures during this time. Finally, when the current RTA was in place in the second half of 2015, the project received the guidance and oversight support it required, and significant progress was made. The project implemented a major (and successful) strategic adjustment by mid-2016 – but at this point there were only approximately 12 months of project implementation remaining.

B. Execution, Including Stakeholder Ownership

i. Project Management

78. As indicated in Section III.D.i above, the project was completed under National Implementation (NIM) modality arrangements. This means that the project management unit (the project manager and project assistant) was primarily accountable to the government execution partner, the MoES. At the same time, the UNDP Country Office was responsible for providing implementation support and oversight.

79. According to project stakeholders and participants (and as validated by the terminal evaluation), the project management team executed the project with a high degree of professionalism, transparency, communication, commitment, and enthusiasm. There is no question that the project was dealt a tough set of cards to start with, considering the poor project quality at entry, the changes in institutional and geographic context during the project development phase, and the less-than-adequate support from the implementing agency during the first half of the project. Despite these challenges, the project management team persisted and prevailed, squeezing the best possible results from the project activities.

ii. Stakeholder Ownership

80. The element of stakeholder ownership has been a slightly problematic issue for the project. Due to the change in institutional context during the project development phase described previously in Section IV.B, the project's key government partner, the MoES and more specifically the SAWR, was only thrust into taking on the project mid-way through the project development process – after PIF approval, i.e. after the concept had already been agreed to by the national GEF Focal Point. Therefore, as might have been expected, it was only in the second half of the project that the MoES fully embraced the project aims. When the project scope was limited to the southern caucuses the government was less interested in the project and its results; after the MTR, when the project scope expanded to include the full Kura river basin, the MoES became much more engaged (according to project participants).

81. As of the terminal evaluation, the key stakeholders at the local and regional level have become fully engaged with the project activities, and have assumed ownership of the results - and the sustainability of those results. At the national level, the government technicians directly involved in the project activities have certainly taken ownership for the project results. For example, during the terminal evaluation the SAWR staff members directly responsible for meteorological and hydrological monitoring and modeling were able to clearly demonstrate their capacity for conducting this work on a sustained basis after project completion. There remains, however, less certainty about the sense of “ownership” at the higher levels of government with respect to changes in water management institutional context, and commitment to a comprehensive system of flood risk monitoring.

C. Partnership Approach and Stakeholder Participation

82. The project's partnership approach was stronger at the regional and local level than it was at the national level – as might have been expected, given the institutional context. The WFM project formed a strong and excellent working relationship with the Gabala regional office of the MoES, which is the office responsible for disaster response in the Turyanchay river basin, the main project pilot area. The project was able to engage staff from this office in multiple trainings, and provided technical support to strengthen the office's response capacity. The project did have a strong partnership with the MoES at the national level in terms cooperation with technical staff. On the other hand, some of the other key national partners, such as MoENR, AzerSu and AJSC were not as heavily engaged as foreseen in the Prodoc. There were also no significant civil society partnerships established.

D. Risk Assessment and Monitoring

83. The WFM project document includes the project risk analysis (Prodoc Annex 1, p. 58-9). The analysis includes five risks, and is adequately prepared, and mitigation measures for each risk are discussed in detail. The risk analysis doesn't come close to identifying any of the significant risks that the project actually faced, implying that some of the project's challenges were completely unexpected, or only appeared after the project development phase. This means that risk monitoring and updating, particularly at project start was not adequately carried out. The project inception report includes the risk analysis table, but no changes or revisions were made. Risks are monitored during project implementation quarterly through UNDP's Atlas risk log, and annually through the PIR. However, no critical risks were identified in the 2014 PIR. One critical risk was identified in the 2015 PIR, which related to the government co-financing, which indicates the challenges the project faced initially with buy-in and support from the MoES. The same risk remained in the 2016 PIR, with further elaboration.

E. Flexibility and Adaptive Management

84. Flexibility is one of the GEF's ten operational principles, and all projects must be implemented in a flexible manner to maximize efficiency and effectiveness, and to ensure results-based, rather than output-based approach. Thus, during project implementation adaptive management must be employed to adjust to changing circumstances.

85. From the perspective of the end of the project, the project's adaptive management has been satisfactory, at least during the second half of the project. The MTR highlighted the fact that as of the mid-point of the project the project had been overly focused on the project document, and identified a number of problems facing the project. Following the MTR, the project team and stakeholders applied a more adaptive approach. As described in the 2016 PIR, *"The MTR noticed a number of deficiencies in the project implementation including the lack of adaptive management, lack of the national ownership and strategic focus. These issues have been addressed to the extent possible by the project through a profound strategic review and a series of adaptive management actions. The adaptive management decisions requested by the Government and justified by the project team and the MTE included:*

- a) Expansion of the project area to include a larger Kura River Basin sites strategically important for the country water management, population safety and food security;*
- b) Refocusing part of the project funding to address community resilience needs and to set up equipment base for hydrological observation and EWS;*
- c) Withdrawing from activities that has not been supported with adequate data, local and institutional capacities and that do not directly contribute to an improved community resilience to climate-induced impacts."*

F. Financial Planning by Component and Delivery

86. The breakdown of project GEF financing is indicated in Table 6 below. Additional details on project finances are included in tables in Annex 9. The total project budget was \$2,960,000. This included \$2.7 million USD GEF funding, and \$0.26 million UNDP funding; the Prodoc did not specify which component the UNDP TRAC funding would be applied to, and for the sake of simplicity this evaluation has assumed that the full amount would be applied to project

management expenditures. From the GEF funding, \$515,083 (17.4%) was planned for Component 1, Component 2 was budgeted at \$875,083 (29.6%), and Component 3 was budgeted at \$1,155,084 (39.0%). Project management was budgeted at \$154,750 (5.2% of the GEF funding). Figure 5 below shows the breakdown of actual spending by year by component. Figure 6 shows the project planned, revised, and actual budget expenditure by year. Figure 7 below shows the project planned vs revised spending by component.

87. When reviewing different aspects of the project financial management and delivery it is important to keep in mind that the project was planned for 60 months, which in the project document was foreseen as five consecutive calendar years. However, since the project began official implementation in March 2012, it is in fact spanning six calendar years (2012-2017). Therefore, for example, there was originally no planned expenditure for 2017.

Table 6 Project Planned vs. Actual Financing, Through Project Completion* (\$ USD)

	Planned	Share of total	Actual	% of actual	% of original planned
Component 1	\$515,083	17.4%	\$516,591	17.5%	100.3%
Component 2	\$875,083	29.6%	\$914,822	30.9%	104.5%
Component 3	\$1,155,084	39.0%	\$1,153,060	39.0%	99.8%
UNDP TRAC Co-financing**	\$260,000	8.8%	N/A	N/A	100.0%
Monitoring and Evaluation***	\$148,000	5.0%	N/A	N/A	N/A
Project Coordination and Management	\$154,750	5.2%	\$293,860	9.9%	U/A
Total*	\$2,960,000	100.0%	\$2,960,000	100.0%	100%

Sources: Project Document for planned amount; project financial documents provided by the project team for actual amounts.

* The project actual expenditure data was naturally only available through June 30, 2017, since the project is ongoing. However, it is assumed that the project will expend all available funds by the end of the project.

** UNDP has provided \$260,00 in cash co-financing from TRAC resources that was financially managed directly through the project budget. However, in the Prodoc the distribution of this co-financing was not indicated by component. Conversely, reporting on actual expenditures is combined for GEF and UNDP TRAC funds; since dollars are fungible, the actual allocation of UNDP TRAC financing between components is not specified. At the same time, since the project management budget was indicated as \$154,750 of GEF funding, and the actual project management expenditure is \$293,860, it is assumed that at least \$139,110 (the difference between planned and actual) of the project management budget has come from UNDP TRAC resources. For the simplistic purposes of the analysis it has been assumed that at project approval all of the UNDP TRAC co-financing was to be contributed to project management.

***The project document includes a detailed M&E budget. However, the total M&E budget includes activities that would be funded from the project management budget line (such as annual reporting) or other sources (such as UNDP oversight). As such, the funds for M&E activities were drawn from across project budget lines.

88. The project's actual expenditures were closely in-line with the original planned allocation from the Prodoc, with less than 2% variance within any of the components from the originally planned amount (also see Figure 7 below).

Figure 5 WFM Project Actual Spending By Component by Year (\$ USD)

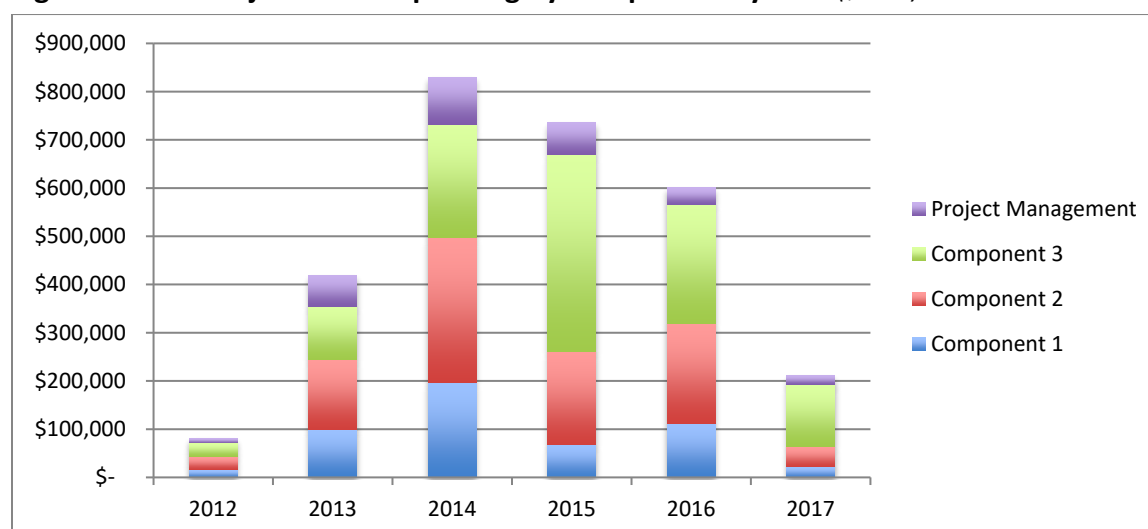


Figure 6 WFM Project Planned, Revised, and Actual Spending by Year (\$ USD)

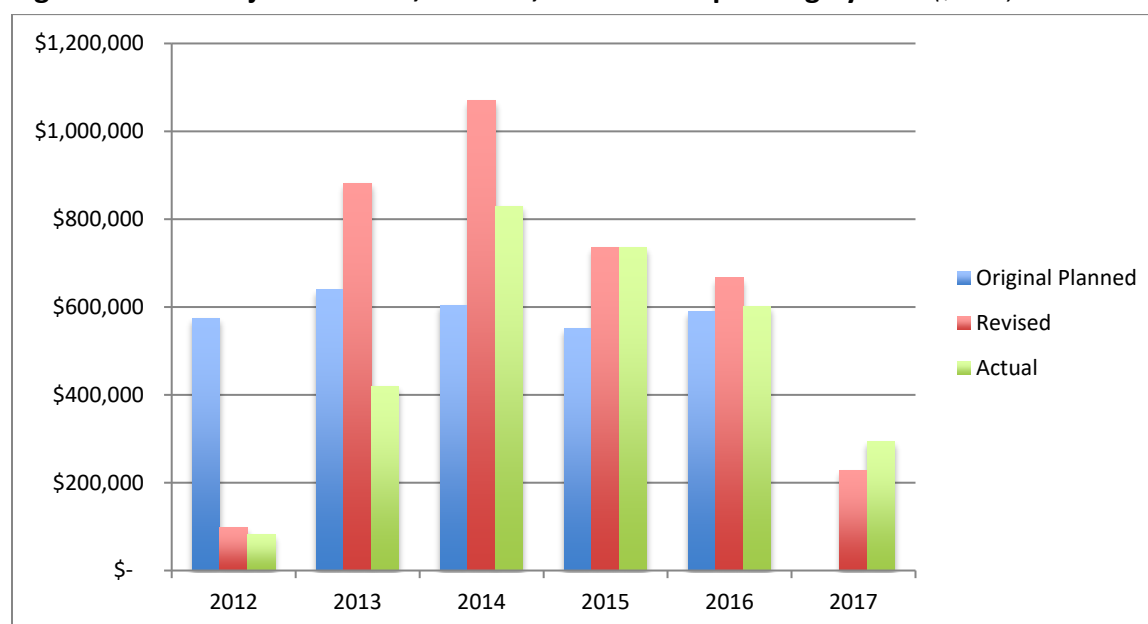
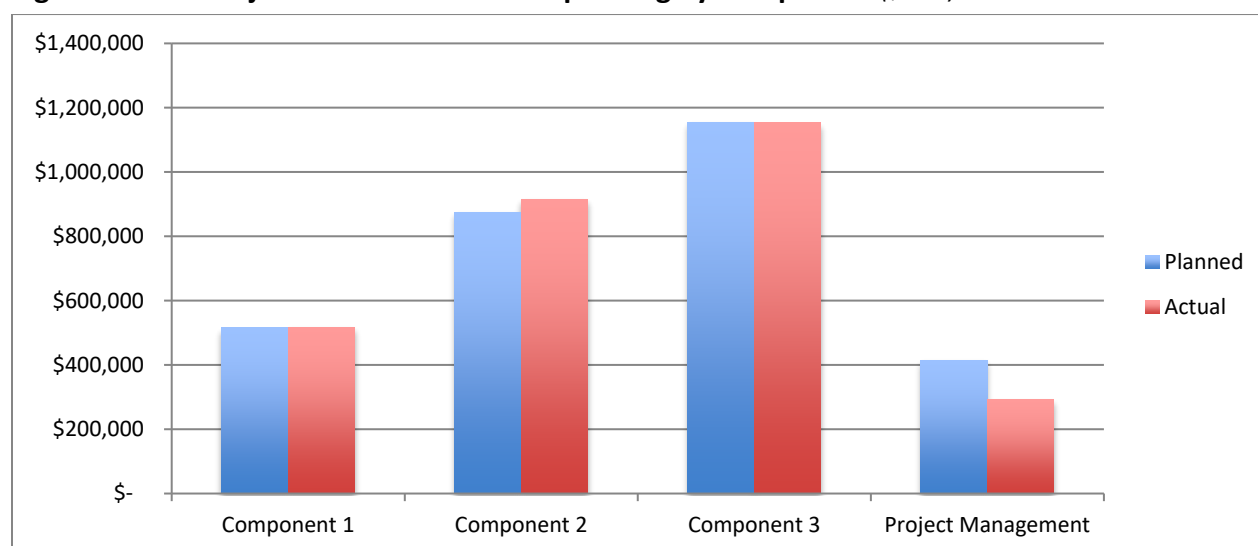
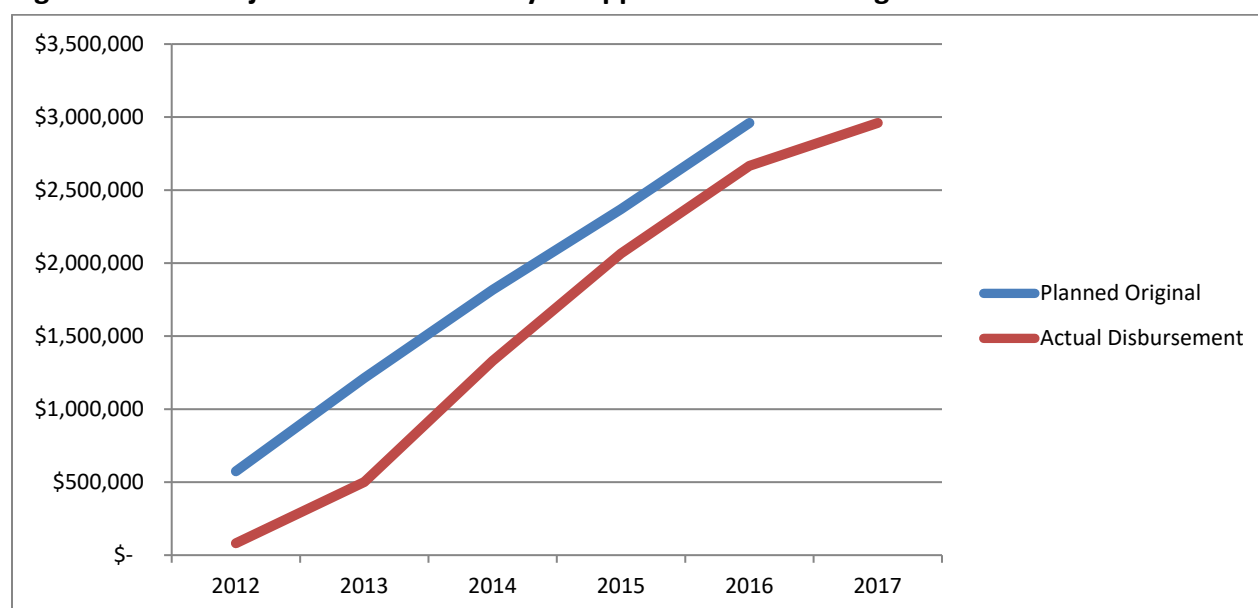


Figure 7 WFM Project Planned vs Actual Spending by Component (\$USD)



89. From Figure 6 it is apparent that the project's actual expenditures in 2012-2014 were much less than the originally planned or revised budget. In 2013 the project delivered less than half the planned revised budget. Beginning in 2015 the project's financial delivery more closely aligned with the budget revisions. Figure 8 below shows the rate of project financial delivery vs the originally planned budget (in the Prodoc) and vs the annually revised budget. Project financial delivery was low in the first few years of the project, and then more closely matched the annual revised budget plans from 2015-2017. The slower-than-planned financial disbursement was more reflective of the implementation challenges the project faced during the first half of the project, rather than reflective of inadequate financial management.

Figure 8 WFM Project Financial Delivery vs Approved Annual Budget



90. The project did not have a project-specific audit, although an audit is indicated in the project M&E plan on an annual basis, with an indicative cost of \$6,000/year (\$30,000 total). Although a project-specific audit was not conducted, the project was included in the annual UNDP Azerbaijan country office financial oversight procedures, as part of an audit in 2015-2016. However, it is considered good practice for financial audits to be conducted of individual projects at least twice during implementation, as the audit process typically results in valuable recommendations for strengthening financial management procedures.

91. The project implementation approach might have been designed in a way to be more cost-effective in terms of generating results and impacts on the ground. At least 44% of the project's budget was expended in contracts with national and international experts. The main outputs of these contracts were a series of technical expert reports. These reports are useful and do provide important technical information necessary for planning and implementing climate-related flood risk mitigation – if they are fully utilized and integrated by the relevant technical staff and authorities, and widely disseminated. It is not clear that this will be the case.

92. On the other hand, the project invested roughly 1/3rd of its budget in equipment, including the installation of meteorological and hydrological monitoring stations, and disaster response equipment. If the project had invested a higher percentage of its budget in direct and immediate on-the-ground resilience strengthening measures, then a larger number of at-risk people and communities would have significantly improved climate resilience by the end of the project than currently do. Considering the balance between longer-term efforts vs immediate investments in improving climate resilience is an important lesson to be reflected on during the project development phase of all climate change adaptation projects.

G. Planned and Actual Co-financing

93. The expected project co-financing was \$7,260,000, with a majority (\$7.00 million USD) as cash and in-kind co-financing from the Government of Azerbaijan. As per the Prodoc co-financing commitment letter, "If the project is approved, the MoES will make a contribution from its budget to the project totally 7 mln USD, out of which 6,760,000 will be contributed to the implementation of project components and \$240,000 to the project management." The co-financing balance of \$260,000 was committed by UNDP from TRAC funding. This is a total expected co-financing ratio of approximately 2.7 : 1. Table 7 below shows planned and actual co-financing.

94. The terminal evaluation was not able to assess the actual level of co-financing received. Although data was requested on this point multiple times for the terminal evaluation, no data on actual co-financing figures were received. According to the project team, the government provided UNDP with a letter in 2015 confirming co-financing provided, which amounted to approximately \$5 million USD, though most of the co-financing provided was indirect or "parallel" co-financing, while the co-financing foreseen in the project document was apparently intended to be direct. The project team estimates that since the MoES has continued significant work on these issues that the total amount of government co-financing may have exceeded the intended \$7 million USD by the end of the project, almost entirely in parallel co-financing.

95. The project was designed in a precarious way – such that project results were heavily dependent on the realization of planned government co-financing, that was expected in direct investments in equipment and other material support to the project. In this sense the project co-financing was anticipated to be receive much more as actual co-financing, rather than in the form of “parallel co-financing” that is common to most projects. The Prodoc does not fully explain how the planned co-financing was to be applied, but does provide some information – for example, under Output 2.4:

“Through their co-financing of the project, MoES and MoENR will support the costs of the hardware, installation, operations and maintenance. While the final cost will be determined by specific need, selected manufacturer and installation difficulty, typical costs per meteorological unit are on the order of US\$100,000 for the hardware, with additional costs for installation. The total cost installed for all six units will be approximately US\$750,000. For hydrological stations, the hardware cost is lower, approximately US\$40,000 plus installation, for a total of US\$150,000. Telemetry will require a further US\$100,000.”

96. While validation by the Terminal Evaluation of actual co-financing figures is not possible, it seems clear that the amount of co-financing contributed was less than originally planned, which did negatively affect the project. As stated in the 2016 PIR, *“Work planning has been complicated due to uncertainties in co-financing. Only recently has it become clear that significant government co-financing will not be forthcoming..... The government has now taken the decision to co-finance some hydrometeorological station in the Kura basin that will complement those to be installed by the project.”* Further, *“Problems with government co-financing were identified at an early stage, but uncertainties remained that impacted on project planning and activities. Remedial action was outside of the control of the Project Team, although alternative strategies were developed to maximise the potential project impact in spite of a much reduced budget.”*

97. An important lesson from this project is that project strategies should be designed to minimize dependence on external co-financing, except in cases where cash co-financing is directly contributed to the project by partners, and will be managed by the project.

Table 7 Planned and Actual Co-financing Received, as of July 15, 2017 (USD)

Sources of Co-finance	Name of Co-financer	Type of Co-financing	Planned	Actual	Explanation	% of Expected Amount
GEF Agency	UNDP	Cash	260,000	260,000	• Applied to project management expenditures	100.0
Government of Azerbaijan	MoES	In-kind	7,000,000	Unable to assess - estimated at >\$7 million USD	• 6,760,000 to be applied to project components; 240,000 to be applied for project management	U/A (100%+?)
Total			7,260,000	260,000		U/A

Sources: Planned from Project Document. Actual total co-financing received as per project documentation.

H. Monitoring and Evaluation

98. The WFM project **M&E design** generally meets UNDP and GEF minimum standards, but had shortcomings related to the design of the Strategic Results Framework, and is considered

moderately satisfactory. M&E implementation is considered **moderately satisfactory**, and therefore **overall M&E** is considered **moderately satisfactory**.

i. M&E Design

99. The WFM project M&E plan is outlined in the project document, including a budgeted M&E plan in table format (on p. 55-7), and additional written description of the M&E plan in section 6 of the Prodoc (beginning on p. 53). The M&E plan describes each of the planned M&E activities, including roles, responsibilities, and timeframe. The identified M&E activities include inception workshop and report, annual progress reporting (APR/PIR), the independent terminal evaluations, project terminal report, and audit. The M&E plan includes a specific brief section on “Learning and Knowledge Sharing”; in addition, it was expected lessons would be captured in the various M&E activities and reports, since, for example, they are automatically included in the annual PIR, and Terminal Evaluation. The M&E plan is summarized in a table showing responsible parties, budget, and timeframe for each of the M&E activities, with the total expected budget of \$148,000. This is adequate for a project of this size and scope, representing approximately 5.5% of the GEF allocation; however the plan does not indicate if the M&E costs are to be fully covered by GEF resources, or would be also partially funded by project partners such as MoES or other partners. The project’s budget does not have a specific M&E budget line; the resources for M&E activities is to be drawn from various project components, such as project management. The budget notes from the project document Total Budget and Workplan (section 4, p. 47 of the project document) indicate that the costs of international consultants for the terminal evaluation will be covered under Component 3 of the project. The project M&E plan is appropriately designed and well articulated, and conforms to GEF and UNDP M&E minimum standards.

100. The project results framework is a critical component of the project’s overall M&E framework. The most significant shortcoming in the project results framework was that some of the baseline and target data was factually erroneous. In particular, the first indicator in the results framework, “# of hectares in the GC affected by improved CRM practices” had a highly incorrect target value; as summarized by the 2016 PIR, “The indicated target of 22,067 sq. km. was determined to be in error and has subsequently been updated to 10,838 sq. km.” “During primary studies, it was found that distinctly to the project document where project area shown as 22,067 sq/km the actual project area is 10,838.5 sq/km.” There is no clear explanation or accounting for such an error, which draws other aspects of the results framework (and the project document as a whole) into question. In addition, the WFM project results framework indicators and targets do not fully meet SMART criteria. The project results framework was significantly revised as part of the 2016 strategic review, but the revision was not completed in time for the 2016 PIR, so the revised results framework is only being applied in the final year of the project.

ii. M&E Implementation

101. The majority of the project M&E activities were implemented, though with some shortcomings. PSC meetings were not held with the frequency specified in the Prodoc (and which would have been helpful to support project implementation). The project did not have a financial audit (as discussed at the end of Section V.F above on financial management), although an audit was planned in the M&E plan.

VI. Effectiveness and Results: Progress Toward the Objective and Outcomes

102. The WFM project has mostly achieved the project objective and partially achieved the three planned outcomes. The project **effectiveness** is rated ***moderately satisfactory*** while project **results / achievement of overall outcomes** is rated ***moderately satisfactory***. The project met (or is likely to meet), or exceeded, 2 of 14 results indicator targets. Targets for 7 of 14 results indicators are partially achieved or not yet achieved. Two results targets have not been achieved, and three results targets cannot be assessed. Key results achieved include:

- Installation of hydromet and hydro monitoring stations, covering 19,000 sq km, with potential climate change adaptation benefits for 800,000 people (exceeding original targets for both figures)
- Establishment of early warning system in Turyanchay river basin, with demonstrated real situation efficacy in June 2017
- Introduction of modern tools and technologies for water management and modeling, and increased national capacity to apply these tools and technologies
- Amendment to the law on water economy of municipalities, adopted for the national level, with well-developed proposals for additional amendments and revisions to other legislation submitted to government

103. A key challenge for achieving many of the results (particularly Output 2.3) is the problems that project faced in relation to data quality and availability. During project development it was apparently assumed that hydro-meteorological data would be readily available, and of sufficient quality to effectively carry out project activities such as modeling, and flood risk mapping. However, during project implementation this proved to be an incorrect assumption on multiple fronts. The national hydro-meteorological service is located within the Ministry of Ecology and Natural Resources – the ministry that was originally expected to be the national executing partner. However, when the institutional context changed during the project development period and the project was transferred to the newly formed SAWR, the hydromet service was not willing to provide the project with access to the historical hydrometeorological monitoring records. According to the hydromet service, this was in accordance with their departmental regulations, and it is not an issue that the project would have faced if the project execution had remained with the MoENR, as originally envisioned. Ultimately the project spent approximately \$57,000 dollars to access – and to digitize – data from the hydromet service. However, from another angle, this data was also not of high quality. The historical national hydromet monitoring network was mostly established during the Soviet era, and over the recent decades was not well maintained. Anecdotally, data collectors often did not actually record data from the monitoring stations, but simply wrote down parameter values based on previous values. Halfway through the project it was necessary to carry out a quality assessment of the available data, which concluded that the data was not fully sufficient to serve the project's needs for activities related to modeling and flood risk mapping.

104. One important aspect of the project results relates to the numerous technical reports produced by the national and international experts involved in the project. These are high quality reports that were necessary for and supported the project outcomes, but it is not clear that these

have been institutionalized and will be used in the future. These reports are posted on the project website, and are in the possession of the MoES. The production of these reports relates in many ways to the issues of the project's long-term versus short-term strategy for increasing climate resilience and adaptation within the country, as previously discussed in Section IV.B of this report on project strategy and relevance. The project invested a significant amount of resources in these reports and it is not clear that they will be used in a sustainable way; this is highlighted in later Section VII.A.iii on institutional sustainability.

105. As described in above Section IV.B on project strategy and design, there were multiple issues with the project design that necessitated changes to the planned project outputs and activities. As previously indicated:

- Output 1.3 related to application of a "Conjunctive Water Management model" was integrated into the project's work under Output 2.2.
- Output 2.2 was also significantly revised, changing the methodology from the Soil and Water Assessment Tool (SWAT) to the "WEAP" model.
- Output 2.3 related to flood risk mapping could only be carried out to a limited extent, due to the poor quality of the existing data (which should have been validated during the project preparation phase).
- Output 2.6 and Output 3.1, related to Water User Associations, were inadequately designed, and the project significantly revised the activities under these outputs, based on the capacity and mandates of the existing WUAs.
- The project completely dropped Output 3.2 related to participatory land-use planning because it was not actually relevant to the situation on the ground in the upstream catchment areas.
- Output 3.3 aimed to pilot "climate-risk oriented watershed management plans", which, according to project participants, "is just not going to happen" based on the lack of local level capacity, and lack of sufficient examples.
- Output 3.4 was also consequently dropped, as it involved replicating Output 3.3.

106. Therefore at least 8 of the project's 14 outputs had to be significantly revised due to inadequate planning and poor assumptions.

107. Detailed and specific information identifying many project results not covered in this section is available in the "Self-assessment" column of Annex 10 of this report, which includes the project results framework and the project's reporting on indicators and targets from the 2016 PIR.

108. The project objective level results indicators are summarized in Table 8 below.

Table 8 WFM Project Objective Level Indicators

Indicator	Baseline	Target	Status
1. # of hectares in the GC affected by improved CRM practices.	Zero. There are no programs in place currently focused on improving climate risk management in the	Improved climate risk management affecting over 22,067 sq. km (2,206,700 ha) of land in highly vulnerable region of Greater Caucasus.	Exceeded.

	areas of flood and water management.		
2. # of people who benefit from locally tailored CRM practices for flood and water risk management.	Zero. There are no locally tailored climate change adaptation practices in place.	1,000,0000 people benefit from improved CRM practices across the GC region.	Exceeded.
3. Number and Type of adaptation actions implemented in national development frameworks; (AMAT Outcome Indicator 1.1.1.)	0 Normative Legal Acts (NLA); water code does not have IWRM relevant normative legal acts 0 NLA; water code does not have relevant normative legal acts 0 NLA; water code does not have relevant normative legal acts 0 NLA; water code does not have relevant normative legal acts	1 NLA; IWRM principles integrated in water policy 1 NLA; Flood zoning regulations introduced in water code 1 NLA; Conjunctive water management part of the water policy 1 NLA; Public participation and gender representation rules as part of the water and flood management policy	Not yet achieved.

109. Considering the scope of the WFM project it is beyond the capacity of this evaluation report to mention all project activities and outputs, and only the key results are discussed under each of the components below.

A. Outcome 1: Water and flood management framework is modified to respond to adaptation needs and improve climate risk management

110. The first outcome of the project was directed at the water and flood management framework, which is law and policy, with outputs that address modifications directly, or work to inform the recommendations toward those modifications. The total GEF funding planned for the component was \$515,000 USD, which was 17.4% of the total GEF funding for the project; the actual expenditure was \$516,591 USD. The outcome activities were organized around three outputs:

111. *Output 1.1. A package of five Normative Legal Acts (regulations) developed on climate resilient water management at the sub-basin level and Output 1.2. The Water Code, Land Code and other related legislation revised to account for climate change risks.*

112. The project formed a legal advisory committee to support the drafting of revisions planned in the project document. This activity was slow to begin, with only about 23% of the Outcome 1 budget expended in the first two years of the project. During the first year of the project the water legislation of Azerbaijan was reviewed and analyzed, and the relevance and compliance with international norms and standards was identified, including in particular European legislation and EU directives. The legislation of Azerbaijan did not include integrated water management or river basin management principles.

113. Legal instruments were drafted that address all issues identified in the Results Framework, and the documents were submitted to the MoES. This included, for example, proposals for the inclusion of civil society in decision-making and management of the water

sector. Therefore, it was proposed to have an article that would provide for the participation of CSO representatives in water management, and the relevant article was proposed to be added to the water code. Another important factor in the water sector is common water management, and legal regulation of common water management. There are a lot of stakeholders involved in managing water. A legal document on common management of the water issues was developed in the project.

114. These proposals need to be included in the regulations of the relevant institutions, so the project developed draft proposed amendments to the regulations for the regulatory bodies, such as MoENR, MoES, Amelioration JSC, and AzerSu JSC. On the whole 15 legal documents were drafted regarding the code, changes to the regulations and other legal documents. Wide stakeholder input was collected for the revisions. One of these documents dealt with the law on water economy of municipalities, and relevant proposals were drafted for this, and the amendments have already been made to the law.

115. The Ministry will be responsible for presenting these instruments (and revisions to the Water Code) to the Cabinet of Ministers. If adopted, these legal instruments will achieve outcomes not only regionally, but nationally, since they address issues that concern water management on a national scale and are relevant at that scale.

116. One of the key potential results under this output is an improved institutional structure for water management in relation to the mandate of the MoES. In this sense the SAWR under the MoES should be institutionally empowered to be responsible for IWRM within the country, as the SAWR is not a water use and does not have a vested interest in the management of various aspects of water within the country. The project made recommendations to the decision-makers within the ministry on a new institutional structure, but this has not been adopted as of the end of the project. The project's work on this issue is captured in the technical report by the international expert Dr. Georg Peterson, in collaboration with the national expert Mr. Rovshan Abbasov: *"Draft institutional IWRM framework report"*, of August 2014. Draft proposals for changes to the Water Code and Draft Presidential Decree and Decree of the Cabinet of the Ministers on making amendments to Water Code and other NLA's were prepared and finalized.

117. The revisions and proposals developed by the project were submitted MoES for the necessary further political steps and approval procedures. The proposals were not yet approved as of the completion of the project, except for the proposed revision for the law on water economy of municipalities. The view of the project team is that the majority of proposals are likely to be approved by the government, since they fall within the long-term strategic vision of the government, including improving the alignment of the country's legislation with European countries. However, the project experts estimate that it could take 6-12 months for the approval process, assuming the issue is high on the government's agenda. Therefore, it would be safe to assume that the revisions should be adopted by the end of 2018.

118. If the project had been able to make more initial rapid progress on this activity then it could have been possible for the revisions to be adopted before project completion, particularly considering that there would have been the potential for the project to provide further lobbying and legal support during the formal political review and approval procedures. The project has contributed useful and important legal proposals, but until these are actually adopted (and then implemented) by the government the project's actual results in this regard will remain limited.

119. **Output 1.3. Conjunctive Water Management (CWM) model and guidelines for surface and groundwater use under climate change conditions.**

120. This output was integrated into the project's work under Output 2.2.

121. Key results indicators for Outcome 1 are summarized in Table 9 below.

Table 9 Outcome 1 Indicators and Targets

Indicator	Baseline	Target	Status
4. # of articles included into the Water Code supporting non-structural climate change adaptation practices and their implementation.	Zero. The Water Code is not sensitized to climate risks in water and flood management.	At least 3 new CC-A focused articles included into the water code by end of project.	Achievement uncertain.
5. Development frameworks include specific budgets for adaptation actions	No flood zoning policies and regulations (level of action: national, local and community) no conjunctive water management practice (level of action: national, local and community)	Flood zoning regulations included in flood and river management (level of action: local and community level covering 400km of the target river body) conjunctive water management model developed (national, local and community level)	Unable to assess.
6. Water Code does/does not mandate unified management or collaborative approaches to reduce climate-induced risk of increased flood damage and water stress.	Water Code is not sensitized to the importance of collaborative approaches to climate risk reduction.	Amended water code mandates unified management and/or collaborative approaches to reducing CC risk of increased flooding and water stress.	Achievement uncertain.

B. Outcome 2: Key institutions have capacities, technical skills, tools and methods to apply advanced climate risk management practices for water stress and flood mitigation

122. The second outcome of the project sought to provide a firm base for strong and knowledgeable water and flood management institutions through a combination of targeted training, introducing modern, climate risk management (CRM) tools and showing how properly linked institutions are a more effective management system. The project aimed to build capacity within the various organizations by focusing on core principles and practical skill development and the use of strategic non-structural measures and tools to enable effective adaptation in the face of climate change. These were expected to include practical flood risk mapping customized for each river's unique morphology, strategic placement and extended coverage of improved hydrometeorological monitoring capacity, and establishing new community-based early warning systems.

123. The total GEF funding for Outcome 2 was originally planned at \$875,083 USD, which is 29.6% of the total GEF funding for the project; actual expenditure was \$914,822. The component activities are organized around six key outputs:

124. *Output 2.1. Targeted training program in adaptive water and flood management, scenario planning and risk assessment for MoES and other stakeholders.*

125. The trainings on numerical models for flood hazard mapping, and water resources assessment and allocation have been delivered to more than 10 technical staff that now possesses improved skills and knowledge of risk assessment methods and planning tools. For the capacity building of the government employees, in particular for SAWR project team, technical trainings were conducted on hydraulic model SOBEK, hydrological model HEC-HMS, water management model CWM and others. This has strengthened the MoES's capacity and brought the country to a new level for using models. The new meteorological and hydrological stations installed are sending data on rainfall, air temperature, snow depth and other parameters. This will provide normal data for using the models. It is also important to note the work of the project with the North-West Regional Renter of the MoES, and the community representatives.

126. In terms of training, the Prodoc foresaw training a larger number of people, including stakeholders at the community level. However, the considering the technical level of the trainings, and the relevance of use for individuals involved in water management, there were in fact a limited number of people for whom the trainings were relevant. The project finished with a core of approximately two government employees who were well-trained to maintain and use the hydro-meteorological network, and to apply modeling tools based on the data. According to external experts, this is not an unreasonable number of people for a country of this size, but it would have been preferable to have a slightly larger core group of 4-6 people; in a comparable circumstance in Georgia, a project initially attempted to train 10 people, and it was determined that this was unnecessary, and the number was reduced to four.

127. *Output 2.2. Soil and water assessment tool (SWAT) introduced for watershed level climate risk assessment and planning.*

128. This output was revised to focus on applying the WEAP model, instead of the SWAT model. According to the project team, this was because there was insufficient data quality or data availability to be able to implement the SWAT model in a sufficient manner. The project team also applied adaptive management to integrate the work under Output 1.3 on the Conjunctive Water Management model into the work under this output.

129. *Output 2.3. Model flood risk hazard maps and participatory mapping processes improve flood management as part of the land use planning and management.*

130. The project's work on flood risk mapping could only be carried out to a limited extent, due to the poor quality of the existing data. The project experts investigated conditions on the ground to the extent feasible in terms of river channel structure and artificial embankments that have been constructed over the decades to protect villages from floods. The team also interviewed local residents for historical flood data. The team evaluated which model should be used, and decided to apply the SOBEK model in three river basins. The team developed and applied 2D modeling, which required paid software, but the team worked with the company and the company provided a free license during the term of the project. The data initially received from the hydromet department was not sufficient to develop the model. The lack of quality data provided further impetus for the project to establish the new monitoring network (under Output 2.4 below). The limited data collected so far from the monitoring network established by the project has improved the modeling outputs, but modeling with a high level of precision requires

decades of monitoring data; one expert suggested at least 30 years' worth of data. The project's task was to develop the hydrological models in order to develop probabilities of high impact events – for example, how often within 100 years a flood of a certain size occurs. As the model was developed the team surveyed local communities to assess the correspondence of the model outputs with historical experience in the affected flood areas. The maps and flood models developed by the project are currently used in the activities of the SAWR.

131. Output 2.4. Hydro-meteorological observation capacity strengthened by extending the coverage by automated hydro-met stations in the highly hazard prone areas.

132. In the project document it was apparently originally foreseen that much of the government co-financing would go toward the establishment of a new and upgraded hydro-met monitoring network. The project inception report estimates that the installation of hydro-met stations specifically indicated in the Prodoc would cost approximately \$1 million USD. This was initially not intended to be financed from the project's GEF resources. When there was a shortcoming of government cash co-financing then the project budget was revised to install a number of hydro-met stations, to the extent feasible.

133. The project financed the installation of two key monitoring stations in the Turyanchay basin. One is the "high altitude" station located in the mountains above the town of Gabala, at the top of a ski resort (see Figure 9). This station is technically qualified to cover an area with a radius of 50 km, so although it is one station it covers a significant of the project's original focus area. The second is a river hydrology monitoring station downstream of the town of Gabala.

Figure 9 High altitude hydrometeorological station



station located in the mountains above the town of Gabala, at the top of a ski resort (see Figure 9). This station is technically qualified to cover an area with a radius of 50 km, so although it is one station it covers a significant of the project's original focus area. The second is a river hydrology monitoring station downstream of the town of Gabala. The installation of the first hydro-meteorological stations for flood forecasting in the Turyanchay basin will benefit approximately 211,000 people over an area of 3,000 sq km.

Figure 10 Monitoring station on Mingecevir Dam



134. In the Kura basin, the project was later able to install a hydro-met station on the dam of the Mingecevir reservoir, which includes an evaporation estimation tool (see Figure 10), which is the first in use in Azerbaijan. The tenders for the provision and installation of these three stations were won by European companies, and cost approximately \$250,000 USD in total. Once the project focus extended to the Kura basin, six additional hydrological monitoring stations were supported and installed by the project (see Figure 11). The hydrological-only monitoring stations are significantly cheaper than the full hydro-meteorological stations. The system of monitoring stations is linked to and reporting to a central database in Baku at the MoES through the cellular network (via a GSM modem for each station). This remote-monitoring capacity of the network does depend on some maintenance and consistent payment to the cellular network operating company.

However, if there is any problem with the remote transmission of data, the data can be downloaded directly from the monitoring station.

135. As part of the monitoring station network the project developed the centralized database that aggregates the data from all of the monitoring stations. This is the first such database in the country, and it is now used by multiple stakeholders to monitor the amount of water resources.

136. Based on the estimation of the project team and project experts, the monitoring network in place now in Azerbaijan (partially supported from the project, partially from the government, and partially from other external donors) covers approximately 50% of the urgent need for total operation of water planning and management in Azerbaijan. The monitoring stations established by the project cover some of the highest priority areas, such as the Kura basin downstream from the Mingecevir reservoir.

Figure 11 Kura Basin Hydrological Monitoring Stations



137. *Output 2.5. Community-based early warning systems to disseminate water stress and flood risk information to the local communities.*

138. The project worked with the communities in the Turyanchay river basin to set up an early warning system for flooding. Floods mainly occur in the summer months, when there are long periods without rain followed by a heavy rainstorm. According to one project participant, the local communities have a saying in the local language that floods occur when the dust in the mountains is up to your knees. The Early Warning System provides advance notice of a likely flood with a 1-2+ hour warning. The high-altitude monitoring station established by the project collects

rainfall data and sends it to the central database managed by the MoES. If a certain intensity of rainfall is recorded then a warning text message is sent to two to five focal point individuals in each village, who then activate the wider person-to-person text message communication network. The project also procured and installed emergency sirens in two locations (see Figure 12).

Figure 12 Emergency Sirens for Flood and Landslide Disasters and Early Warning System



Figure 13 First Responder Emergency Equipment



139. The project also procured "First Responder Emergency Tool Kits" as a part of set up of Early Warning Systems and distributed these in the target communities. These include items such as chainsaws and safety equipment that can be used for clearing roads of downed trees, and other debris (see Figure 13).

140. The Early Warning System faced its first real-life test on June 8th, 2017 in the Gabala region, and the First Responder Emergency Tool Kits provided by the project proved their worth. As described by one local project participant, there was a short, but severe summer storm:

"...it was short, only 5 minutes, but many houses were damaged by trees falling on them, up to 200 trees fell. And even elderly people said they hadn't seen such a thing in their lifetime. Equipment provided by the project helped us to eliminate the consequences of this storm. It was such a storm that my phone was wet and I couldn't contact anybody. We had consulted and planned that in the case of such a storm we would organize. So we

put on our rubber boots, and got equipment, and called MoES and they said they couldn't come, the road was blocked, and within 4 hours we managed to unblock the road and restore traffic. And thank goodness there was no loss of life. Therefore would like to extend my gratitude to the project on behalf of our villagers."

141. **Output 2.6.** Capacity of WUA farming communities increased to adapt to climate change by improving soils and managing land and water.

142. The project significantly revised the scope of this activity, based on the limited capacity and low relevance to achievement of the project objective. The project worked with existing WUAs in the Gabala area, in the downstream areas of the Turyanchay river basin. Project documentation is conflicting on the number of WUAs the project worked with, with one source indicating 15 WUAs were engaged, while other sources indicated 2-4 WUAs. The WUAs existed initially with the sole responsibility of selling water for irrigation. The project worked with the WUAs to increase their understanding of broader concepts of water management such as metering and water conservation, in order to respond to climate impacts. The project also linked the WUAs with the regional center for emergency situations, and leveraged the WUAs for the trainings on the Early Warning System and emergency response in the Gabala area.

143. Key results indicators for Outcome 2 are summarized in Table 10 below.

Table 10 Outcome 2 Indicators and Targets

Indicator	Baseline	Target	Status
7. Capacity Perception Index Score (1 - 5) to be disaggregated by gender 1. No capacity built 2. Initial Awareness raised (e.g. workshops, seminars) 3. Substantial training in practical application (e.g. vocational training) 4. Knowledge effectively transferred (e.g. passing examination, certification) 5. Ability to apply or disseminate knowledge demonstrated. (AMAT Outcome Indicator 2.2.2) Capacity Perception Index Score (1 - 5) to be disaggregated by gender 1. No capacity built 2. Initial Awareness raised (e.g. workshops, seminars) 3. Substantial training in practical application (e.g. vocational training) 4. Knowledge effectively transferred (e.g. passing examination, certification) 5. Ability to apply or disseminate knowledge demonstrated.	Baseline Score for Male and Female = 1. No capacity built for climate change adaptation and risk reduction.	Target Score for Male and Female = 3. Substantial training in practical application (e.g. vocational training).	Partially achieved.

(AMAT Outcome Indicator 2.2.2)			
8. AMAT Output Indicator 2.1.1.1: Updated risk and vulnerability assessment. Yes/No	No, there is no updated risk and vulnerability assessment	Yes. There will be an updated risk and vulnerability assessment by end of project.	Unable to assess.
9. AMAT Output Indicator 2.1.1.2: Updated risk and vulnerability assessment conducted. Yes/No	No, there is no updated risk and vulnerability assessment conducted.	Yes. An updated risk and vulnerability conducted by end of project as part of project's work to produce model flood risk maps and participatory mapping processes	Unable to assess.
10. AMAT Output Indicator 2.1.2.1: Number and Type of monitoring systems in place.	0 High elevation meteorological stations; 0 River Monitoring meteorological stations; 0 Community-based early warning for floods; 0 Community-based water stress early warning	6 High elevation meteorological stations; 3 High-altitude river monitoring meteorological stations; 3 Community-based early warning for floods; 3 Community-based water stress early warning	Partially achieved.

C. Outcome 3: Community resilience to floods and water stress improved by introducing locally tailored climate risk management practices.

144. The third outcome of the project worked to develop an informed and active community that can collaborate with regional organizations responsible for water, flood and land management. The project intended to fully engage the communities with these organizations, as well as introducing and developing community-based planning for land, water and flood management and flood early warning systems. Outcome 3 is aimed at preparing the communities and the responsible government organizations to be able to prepare for and respond to climate change threats.

145. The total GEF funding for Outcome 3 was originally planned at \$1,155,084 USD, which is 39.0% of the total GEF funding for the project; actual expenditure was \$1,153,060. The outcome activities are organized around five outputs:

146. *Output 3.1 Water User Associations strengthened to improve forecasting and response planning mechanisms, and watershed planning and management skills to cope with CC-induced water stress and floods.*

147. Pragmatic analysis of the current capacity of existing Water User Associations in the scope of expansion of responsibilities into comprehensive water management resulted in the firm decision not to go forward with this project concept. Emphasis was placed on increasing awareness and understanding of the overall concepts of water management, focusing more on Local Stakeholder Committees. In the long-term WUAs would be expected to be represented in water management decisions, but maintaining their focus on irrigation services.

148. *Output 3.2 Local multi-stakeholder committees established to test and introduce participatory and consensus-based land use planning that integrates climate risks.*

149. This output was significantly scaled back due to limited capacity in the local context, and low relevance to achievement of the project objective. Funding constraints have precluded the formation of more than two Local Stakeholder Committees (in those basins where CBFFEWS have been or will be installed).

150. Flood management plans were also scaled back, in part due to lack of data and information, but also due to the inherent inadequacy of alternatives suggested in the project document. According to the project team, the project document highlighted upstream poor land management practices (e.g. unregulated tree cutting) as an important issue contributing to catastrophic floods. However, the real extent of this issue was limited in the project area, and the perception of the importance of this issue was apparently based on some incorrect assumptions, and perhaps a few historical instances. The reality is that the upper catchments are not heavily farmed, as the slopes are far too steep, and there is no systematic deforestation that may be attributed to causal effects of flooding. Exposed rock subjected to alternating moisture and freezing breaks apart and generates further landslides. The major threat from flooding and mud and rock flows results when massive amounts of rain cause rock slides in the upper catchment areas of the local rivers. This is a natural process occurring due to the extremely steep and rugged terrain of the lower caucuses region; there is little that can be done in terms of land use planning to significantly reduce this threat. Preventative measures (such as entrapment dams or nets, as used in the Alps) are not practical. Cost and access factors preclude their sensible use. Beneficiaries have been advised of possible alternatives, but there is little that they can do themselves that would have significant impact in reducing the floods and debris flows.

151. *Output 3.3 Pilot climate-risk oriented watershed management plans initiated in each pilot catchment to implement sustainable water and flood management measures and fully account for climate change risks from floods and associated mudflows and Output 3.4 Pilot CR-WMP processes replicated across Greater Caucasus region.*

152. Output 3.3 was canceled due to limited local capacity. According to the project team the project document assumed a much more rapid and advanced process of capacity development in terms of climate-risk oriented watershed management planning than was feasible given the low initial capacity at the local level.

153. Output 3.4 was then also canceled, as it involved replicated Output 3.3.

154. *Output 3.5 Locally tailored public information campaign implemented to make flood-prone communities aware of flood risks and effective risk management.*

155. Risk information was disseminated to stakeholders through workshops. Preliminary, indicative flood maps were produced, circulated, and discussed with local communities to increase awareness of the current and potential risks of flooding. Visits were made to Balakan, Qax and Zaqatala to disseminate and collect information on risk and climate change impacts. Information brochures were prepared that summarized the project, and details of the Community-based Early Warning System. These were distributed extensively.

156. One positive aspect of this activity was that the project apparently secured increasing female participation in workshops over the life of the project.

157. Key results indicators for Component 3 are summarized in Table 11 below.

Table 11 Component 3 Indicators and Targets

Indicator	Baseline	Target	Status
11. Number of WUA created / and or strengthened for CRM with respect to water stress and floods in project area. Percentage increase in representation of women in pilot WUAs.	Zero Water User Associations (WUA) strengthened for CRM in project area. Women are underrepresented in WUAs.	At least 5 by end of year 2; 10 by end of year 4; and 15 by end of project. At least 20% women in all pilot WUAs by end of project	Not achieved.
12. Number of Local Stakeholder Committees with at least 20% women representation.	Zero. There are no such LSCs in place.	By end of Year 2, at least 3 Local Multi-Stakeholder Committees (LSCs) actively involved with regional administration in addressing climate change responses and water stress and flood damage mitigation. 6 by end of year 4 and 9 by end of project, all with at least 20% women membership.	Partially achieved.
13. Relevant risk information disseminated to stakeholders. (AMAT Outcome Indicator 2.1.1).	No, relevant risk information is not disseminated to stakeholders.	Yes, relevant risk information will be disseminated to stakeholders.	Partially achieved.
14. Number of rayons to which climate-risk watershed management planning is replicated.	Climate-risk watershed management planning has not yet been piloted, much less replicated.	6 climate-risk watershed management plans in addition to the 3 pilot rayons for a total of 9.	Not achieved.

D. Impacts and Global Environmental Benefits

158. Assessing impact-level results for climate change adaptation projects is challenging, as “impacts” are not clearly defined – and may not be realized until actual instances of climate-change related events occur (in the case of project’s related to disaster risk reduction).

159. In addition, for most focal areas the GEF defines impacts in terms of environmental changes, but in the case of climate change adaptation the strengthening of climate resilience usually relates to people. This terminal evaluation has adapted the GEF’s impact assessment criteria, and assessed the project’s impact per the ratings below:

- ~~Environmental~~ climate resilience status improvement is assessed as **minimal**;
- *Environmental stress reduction* is assessed as **minimal**; and
- *Progress toward stress/status change* is assessed as **minimal**.

160. There are some small examples of the project results contributing to impact level results during the life of the project. In June 2017 there was a flood event near Gabala in the Turyanchay river basin caused by an unusually intense short storm with heavy rains, which were detected by the project’s meteorological monitoring equipment. The monitoring station automatically provided data that triggered the community-level Early Warning System that was developed and implemented by the project. As a result, members of local communities within the potential flood path were notified and took appropriate protective measures. Immediately following the flood

event, members of the local community response teams used equipment that had been provided by the project to clear debris from roadways, and to restore access to key facilities.

161. Although this is an excellent example of a targeted impact in one instance, the much larger scale of climate resilience impact-level results expected from the full scope of the originally planned project have yet to be realized.

VII. Key GEF Performance Parameters

162. Sustainability is one of the five main evaluation criteria, as well as being considered one of the GEF operational principles. Other GEF operational principles not otherwise addressed are discussed below, including the project's catalytic role and stakeholder participation.

163. UNDP-GEF project evaluations are also required to discuss the mainstreaming of UNDP program principles. This is covered in Annex 11 of this evaluation report.

A. Sustainability

164. While a sustainability rating is provided here as required, sustainability is a temporal and dynamic state that is influenced by a broad range of constantly shifting factors. It should be kept in mind that the important aspect of sustainability of GEF projects is the sustainability of results, not necessarily the sustainability of activities that produced results. In the context of GEF projects there is no clearly defined timeframe for which results should be sustained, although it is implied that they should be sustained indefinitely. When evaluating sustainability, the greater the time horizon, the lower the degree of certainty possible.

165. Based on GEF evaluation policies and procedures, the overall rating for sustainability cannot be higher than the lowest rating for any of the individual components. Therefore the overall **sustainability** rating for the WFM project is ***moderately likely***.

i. Financial Risks

166. Sustainability in this regard is considered ***moderately likely***. Fully leveraging and implementing the project results over the long-term will take significant more investment in the water management sector, and climate change disaster risk reduction sector, either by the government or by external donors. For example, the government will need to maintain or increase its financial support for maintaining and operating the monitoring network installed with project support, but more importantly also for the long-term analysis and further use of the data captured.

ii. Socio-political Risks

167. Socio-political risks to sustainability are also limited, and sustainability in this regard is considered ***likely***. To help ensure that the installed hydro-meteorological monitoring stations are not damaged or destroyed they have been installed in locations that had previously existing security arrangements for one reason or another, such as on the Mingecevir dam, on the ski resort property, behind the security gate of an irrigation channel security station, etc. This should help ensure that this expensive technical equipment remains in its location and operational for the long-term.

168. There does appear to be good stakeholder buy-in and ownership at the local level, in relation to the project-installed early warning system, and other training and local consultation activities.

iii. Institutional and Governance Risks

169. Institutional and governance issues related to sustainability have a few question marks, and sustainability in this regard is considered *moderately likely*.

170. According to project participants, the project made recommendations to the deputy MoES minister for an institutional structure for water management, which were then carried on to the minister, but so far there have not been any results in relation to these recommendations.

171. A key issue is the institutional sustainability of the technical documents and expert reports produced by the project. These are useful and of high quality, but there is limited indications that their contents have been, or will be, institutionalized.

172. At the end of the project the project website, <http://wrm.az>, was transferred to the SAWR; the website includes all of the project's technical reports. According to the project team, the MoES also plans to make public the monitoring data from the project hydro and meteorological monitoring stations.

iv. Environmental Risks

173. Environmental risks to sustainability are also not critical, and this aspect of sustainability is considered *likely*. There are not environmental risks that present significant threats to the project results. The project was designed to itself respond to environmental risks.

B. Catalytic Role: Replication and Up-scaling

174. The project did achieve some results in terms of upscaling, in the sense that some of the project activities were extended to the Kura river basin, which is a much larger area than was originally foreseen in the project. On the other hand, the results have not yet been replicated among the initial target communities in the Caucasus foothills. If the project ultimately catalyzes some changes at the policy and regulatory level, then there could be more significant replication and up-scaling of the project results.

C. Gender Equality and Mainstreaming

175. Gender equality and mainstreaming in the WFM project has been a positive aspect of the project. The project document includes at least nine references to gender mainstreaming and participation, on aspects, for example, such as ensuring Water User Associations have appropriate gender representation. As stated in the 2016 PIR, "The gender aspects have been taken into account and participation of women have been strongly pursued in the community-based activities (30-40% participation of women in the project activities has been achieved." In addition, "The project is now taking steps to involve women in the process of water resource management. Women actively involved to the work of WUA and LSC. Also project experts had several meetings (visited communities) especially with women and discuss current problems and solutions to these problems." The increased participation of women in project activities such as disaster risk reduction trainings was validated by the terminal evaluation.

176. One shortcoming is that the project results framework does not consistently include gender disaggregation for all relevant indicators. For example, the second indicator: “2. # of people who benefit from locally tailored CRM practices for flood and water” is not specified or reported in terms of gender breakdown.

VIII. Main Lessons Learned and Recommendations

A. Lessons from the Experience of the Water and Flood Management Project

177. The terminal evaluation has identified the below notable lessons from the experience of the WFM project. These lessons should be aggregated by UNDP for application to other similar future initiatives.

178. **Lesson:** If significant changes in the project’s development context occur during the project development phase, it is critically important that those changes are reflected in the Prodoc; or, at least appropriate revisions should be made during the project inception phase. In the case of the WFM project, the occurrence of the May 2010 Kura river floods, at the very beginning of the project development phase, led to changes in the institutional context, and the geographic priorities of the government. These changes were not adequately digested by the project until after the mid-term review, which significantly hampered the project during the first half of implementation.

179. **Lesson:** In designing a project it is likely to be more effective to focus on one sector, unless there are clear, logical, functional linkages to other sectors – particularly when financial resources are limited. The WFM project attempted to address climate change related disaster risk reduction, as well as water management related to irrigation and residential water supply. Both can be affected by climate change, and both may involve some of the same institutional partners, but there are limited synergies to be gained by trying to address these issues simultaneously. For example, preparing for and mitigating damage from flash floods and mudflows from mountain canyons has little to do with efficient water management for irrigation. Considering the project’s limited financial resources, the project would likely have been more effective focusing on one or the other of these sectors.

180. **Lesson:** Project strategies should be designed to minimize dependence on external co-financing, except in cases where cash co-financing is directly contributed to the project by partners, and will be managed by the project. In the case of the WFM project, the project design and anticipated results depended heavily on government co-financing that was outside of the control of the project. Realization of actual co-financing from project partners is often uncertain, and only in exception circumstances should a project be designed such that the achievement of project results is heavily dependent on uncertain external financing sources.

181. **Lesson:** The development phase of climate change adaptation projects should carefully consider how long-term and short-term strategies are balanced in terms of generating concrete benefits. In some cases, climate change adaptation efforts may achieve more rapid and more concrete results for a larger number of people by investing directly in on-the-ground technical systems to improve resilience. The WFM project spent approximately only 1/3rd of its budget on equipment and systems on-the-ground that immediately reduced climate disaster risk by a notable degree. A larger percentage was invested in contracting national and international experts, whose major outputs were a series of technical papers, supposedly necessary for some

of the project's larger-scale and longer-term goals. However, if a higher percentage of the project budget had been allocated to direct on-the-ground investments, then a larger number of people across a much larger area would have reduced climate disaster risk as of the end of the project. When rapid, significant, concrete, and sustainable climate resilience benefits can be generated by direct on-the-ground investments, then this strategy should be the primary focus for a climate change adaptation project.

182. **Lesson:** For projects with activities that depend heavily on the extent, quality, and availability of data, a data assessment should be conducted during the project development phase. The results from such an assessment could then be used to design the project in a way that is responsive to the realistic situation in relation to the data. This would ensure that projects are not designed to be heavily reliant on faulty assumptions related to data quality and availability. Project designs should specify and include clear agreements about what data exists, how it will be accessed, and by whom. Many of the activities in the WFM project design depended heavily on having access to data of reasonable quality. This turned out to not be the case – there was limited availability of the data, and it was not of high quality.

B. Recommendations for Consolidating Results and Supporting Sustainability of the Water and Flood Management Project

183. The recommendations of the terminal evaluation are listed below, with the primary target audience for each recommendation following in brackets.

184. **Key Recommendation 1:** UNDP, other donors, and the government should continue to invest in a state-of-the-art hydro-meteorological monitoring system in Azerbaijan, in order to increase the coverage and reliability of hydrological and meteorological data collection in the country to support adaptation to climate risks in the future. [UNDP and other stakeholders and funders]

185. **Key Recommendation 2:** The technical expert reports produced by the project should be disseminated to relevant stakeholder institutions, and they should continue to be available online, with the support of MoES. [UNDP and MoES]

186. **Key Recommendation 3:** Technical reports should be distilled into a few shorter pamphlets or brochures that can be more widely distributed, but which draw more attention to the reports and the issue overall. [UNDP and MoES]

187. **Key Recommendation 4:** UNDP and Government of Azerbaijan should develop and pilot community-based flood risk insurance. Considering that there is little that can be done to actually stop the floods/mud flows, then an important part of the equation is helping communities respond to and recover from these disasters. This can partially be done by providing flood and risk insurance to high risk communities. [UNDP and MoES]

188. **Key Recommendation 5:** Projects should have a project-specific audit at least once during their life, preferably more than once. Although project-specific audits may not be required by UNDP procedures, they are typically helpful and result in recommendations to improve the financial and operational management of projects. [UNDP]

189. **Key Recommendation 6:** The Government of Azerbaijan should conduct an assessment of the potential negative impact of riverbed quarrying in key climate disaster risk areas. [MoES]

IX. Annexes

Annex 1: Terminal Evaluation Terms of Reference

Annex 2: GEF Operational Principles

Annex 3: Water and Flood Management Project Terminal Evaluation Matrix

Annex 4: Terminal Evaluation Draft Interview Guide

Annex 5: Rating Scales

Annex 6: Stakeholders Interviewed

Annex 7: Documents Reviewed

Annex 8: Evaluation Field Mission Itinerary

Annex 9: Water and Flood Management Project Financial Tables

Annex 10: Water and Flood Management Project Results Framework Assessed Level of Indicator Target Achievement

Annex 11: Water and Flood Management Project Mainstreaming of UNDP Programme Principles

A. Annex 1: Terminal Evaluation Terms of Reference

Terms of Reference International consultant

Integrating Climate Change Risks into Water and Flood Management by Vulnerable Mountainous Communities in the Greater Caucasus Region.

Location: Baku, Azerbaijan
Type of contract: IC for Terminal evaluator

Starting date: 10 June, 2017

End date: 10 July, 2017 (30 working days during the contract period)

Background

Azerbaijan belongs to the world's water stress countries. With current deficit of water resources being about 5 km³, the additional pressures on water resources due to climate change will seriously affect the rural water supply. The region of Greater Caucasus has been identified as particularly vulnerable in this regard.

Water is unevenly distributed across the seasons and geographic areas in Azerbaijan. Despite an overall trend of rainfall reductions in the country, the mountainous regions of Greater Caucasus experience increasingly prolonged inundations and flash floods during the wet season and extended dry spells during the dry seasons. Variation of water flow may reach 30% between the dry and wet seasons. Paradoxically, most of the quality ground waters are formed in foothills of the Greater and Lesser Caucasus and constitute 24 million m³ (8.8.km³) per year. However, currently, only 20% of a total resource has been used. And as Azerbaijan's Second National Communication (SNC) suggests, with the view of increasing water deficit, the country will have to increase ground water extraction both for irrigation and fresh water supply needs.

The project aims to reduce vulnerability of the mountain communities of the Greater Caucasus region of Azerbaijan to climate change induced water stress and flood hazards by improved water and flood management through addressing the management framework at the legislative and policy level, strengthening institutional capacity by introducing new non- structural methods and providing training and empowering communities to actively participate in water and flood management.

Azerbaijan already has considerable experience of structural measures and therefore the proposed project focuses on non-structural measures. These measures mainly address institutional and management challenges, as well as improving public understanding of the problems and potential solutions, developing both organizational and community involvement in the process and pilot actions to improve micro-watershed management practices with a direct engagement of affected communities. The project proposes to sensitize water management policies and practices to the long term risks of, and adaptation to, climate change. Other aspects of flood mitigation and reduction of water stress, such as improved land use management and flood zoning, also require the sensitization of both government and civil society and these tend to have become very much secondary considerations in water management.

Project has following Components:

- Water and Flood management policy and regulatory frameworks to respond to climate change risks
- Technical capacities to improve climate risk management in the Greater Caucasus
- Water and Flood management practices demonstrated to lead to community resilience

Expected Outcomes:

- Water and Flood management framework is modified to respond to adaptation needs and improve climate risk management on over 10,838.5 sq. km³ of land in highly vulnerable region of Greater Caucasus.
- Key institutions have capacities, technical skills, tools and methods to apply advanced climate risk management practices for water stress and flood mitigation;
- Community resilience to floods and water stress improved by introducing locally tailored climate risk management practices benefiting over 650,000 people on total land area of 10,838.5 km² of the Southern slopes of the Greater Caucasus.

Scope of work

- Terminal Evaluation will cover all activities undertaken in the framework of the project. The evaluators will compare planned outputs of the project to actual outputs and assess the actual results to determine their contribution to the attainment of the project objectives.
- The evaluator is expected to frame the evaluation effort using the criteria of relevance, effectiveness, efficiency, sustainability, and impact, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects.
- The evaluation must provide evidence-based information that is credible, reliable and useful.
- The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders.
- The evaluator is expected to conduct a field mission to Baku, including the following project sites (pilot River Basin of Turyanchay). Interviews will be held with the following organizations and individuals at a minimum: Ministry of Emergency Situations of Republic of Azerbaijan, State Water Resources Agency of the Ministry of Emergency Situations, North-West Regional Center of the Ministry of Emergency Situations and vulnerable mountain communities.
- The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment.

Deliverables

N	Deliverable	Timeline
1	Inception Report (Evaluator provides clarifications on timing and method)	10 June, 2017
2	Presentation (end of evaluation method)	20 June, 2017
3	Draft Final Report	27 June, 2017
4	Final Report*	10 July, 2017

Monitoring

The Terminal Evaluator for Water and Flood Management will be an experienced international expert is expected to provide terminal evaluation report of the project. He/ She will report to National Project Manager (NPM). 45 working days during the contract period.

Qualifications and Competencies

The evaluator must present the following qualifications:

- International consultant with advanced academic degree (MSC or PhD) and professional background in fields related to Climate Change Adaptation, Agriculture and Integrated Water Resource Management.
- A minimum of 5 years of relevant experience is required;
- Substantive experience in reviewing and evaluating similar projects, preferably those involving UNDP/GEF or other United Nations development agencies or major donors;
- Familiarity with the challenges developing countries face in adapting to climate change

Other knowledge and skills:

- Technical knowledge in the targeted focal area(s)
- Ability deliver quality reports within the given time;
- Excellent English writing and communication skills. The consultant must bring his/her own computing equipment;
- Excellent feedback-giving skills and culture sensitiveness.

Selection criteria: 1. Lowest price and technically compliant offer

- For more details please see procurement notice

Terms of Payment:

Payment will be done in three installments and based on completion of deliverables.

- 1 installment – 10%- At contract signing (June, 2017)
- 2 installment – 40%- Following submission and approval of the 1st draft terminal evaluation report (June, 2017)
- 3 installment – 50% - Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report (July, 2017)

Financial proposal:

Should be done as a lump sum in consideration of supposed travels (including accommodation, ticket and DSA).

- The breakdown is necessary.
- Daily allowance for Baku/Azerbaijan is 176 USD. Daily allowance for internal travel is 112 \$ per day. Total no of days in the country/field: 45
- Only economy class is applied to international consultant travel.

B. Annex 2: GEF Operational Principles

<http://www.gefweb.org/public/opstrat/ch1.htm>

TEN OPERATIONAL PRINCIPLES FOR DEVELOPMENT AND IMPLEMENTATION OF THE GEF'S WORK PROGRAM

1. For purposes of the financial mechanisms for the implementation of the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change, the GEF will **function under the guidance of, and be accountable to, the Conference of the Parties (COPs)**. For purposes of financing activities in the focal area of ozone layer depletion, GEF operational policies will be consistent with those of the Montreal Protocol on Substances that Deplete the Ozone Layer and its amendments.
2. The GEF will provide new, and additional, grant and concessional funding to meet the agreed **incremental costs** of measures to achieve agreed global environmental benefits.
3. The GEF will ensure the **cost-effectiveness** of its activities to maximize global environmental benefits.
4. The GEF will fund projects that are **country-driven** and based on national priorities designed to support sustainable development, as identified within the context of national programs.
5. The GEF will maintain sufficient **flexibility** to respond to changing circumstances, including evolving guidance of the Conference of the Parties and experience gained from monitoring and evaluation activities.
6. GEF projects will provide for **full disclosure** of all non-confidential information.
7. GEF projects will provide for consultation with, and **participation** as appropriate of, the beneficiaries and affected groups of people.
8. GEF projects will conform to the **eligibility** requirements set forth in paragraph 9 of the GEF Instrument.
9. In seeking to maximize global environmental benefits, the GEF will emphasize its **catalytic role** and leverage additional financing from other sources.
10. The GEF will ensure that its programs and projects are **monitored and evaluated** on a regular basis.

C. Annex 3: Water and Flood Management Project Terminal Evaluation Matrix

Evaluation Questions	Indicators	Sources	Data Collection Method
Evaluation Criteria: Relevance			
Does the project's objective align with the priorities of the local government and local communities?	Level of coherence between project objective and stated priorities of local stakeholders	- Local stakeholders - Document review of local development strategies, environmental policies, etc.	- Local level field visit interviews - Desk review
Does the project's objective fit within the national climate change adaptation and development priorities?	Level of coherence between project objective and national policy priorities and strategies, as stated in official documents	National policy documents, such as national climate change adaptation strategies and policies	- Desk review - National level interviews
Did the project concept originate from local or national stakeholders, and/or were relevant stakeholders sufficiently involved in project development?	Level of involvement of local and national stakeholders in project origination and development (number of meetings held, project development processes incorporating stakeholder input, etc.)	- Project staff - Local and national stakeholders - Project documents	- Field visit interviews - Desk review
Does the project objective fit GEF strategic priorities?	Level of coherence between project objective and GEF strategic priorities (including alignment of relevant focal area indicators)	- GEF strategic priority documents for period when project was approved - Current GEF strategic priority documents	Desk review
Was the project linked with and in-line with UNDP priorities and strategies for the country?	Level of coherence between project objective and design with UNDAF, CPAP, CPD	UNDP strategic priority documents	Desk review
Does the project's objective support implementation of the UNFCCC? Other relevant MEAs?	Linkages between project objective and elements of the UNFCCC, such as key articles and programs of work	UNFCCC website	Desk review
Evaluation Criteria: Efficiency			
Is the project cost-effective?	Quality and adequacy of financial management procedures (in line with	- Project documents - Project staff	Desk review

Evaluation Questions	Indicators	Sources	Data Collection Method
	UNDP, and national policies, legislation, and procedures) - Financial delivery rate vs. expected rate - Management costs as a percentage of total costs		Interviews with project staff
Are expenditures in line with international standards and norms?	Cost of project inputs and outputs relative to norms and standards for donor projects in the country or region	- Project documents - Project staff	- Desk review - Interviews with project staff
Is the project implementation approach efficient for delivering the planned project results?	- Adequacy of implementation structure and mechanisms for coordination and communication - Planned and actual level of human resources available - Extent and quality of engagement with relevant partners / partnerships - Quality and adequacy of project monitoring mechanisms (oversight bodies' input, quality and timeliness of reporting, etc.)	- Project documents - National and local stakeholders - Project staff	- Desk review - Interviews with project staff - Interviews with national and local stakeholders
Is the project implementation delayed? If so, has that affected cost-effectiveness?	- Project milestones in time - Planned results affected by delays - Required project adaptive management measures related to delays	- Project documents - Project staff	- Desk review - Interviews with project staff
What is the contribution of cash and in-kind co-financing to project implementation?	Level of cash and in-kind co-financing relative to expected level	- Project documents - Project staff	- Desk review - Interviews with project staff
To what extent is the project leveraging additional resources?	Amount of resources leveraged relative to project budget	- Project documents - Project staff	- Desk review - Interviews with project staff
Evaluation Criteria: Effectiveness			

Evaluation Questions	Indicators	Sources	Data Collection Method
Are the project objectives likely to be met? To what extent are they likely to be met?	Level of progress toward project indicator targets relative to expected level at current point of implementation	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
What are the key factors contributing to project success or underachievement?	Level of documentation of and preparation for project risks, assumptions and impact drivers	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
What are the key risks and barriers that remain to achieve the project objective and generate Global Environmental Benefits?	Presence, assessment of, and preparation for expected risks, assumptions and impact drivers	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Are the key assumptions and impact drivers relevant to the achievement of Global Environmental Benefits likely to be met?	Actions undertaken to address key assumptions and target impact drivers	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Evaluation Criteria: Results			
Have the planned outputs been produced? Have they contributed to the project outcomes and objectives?	- Level of project implementation progress relative to expected level at current stage of implementation - Existence of logical linkages between project outputs and outcomes/impacts	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Are the anticipated outcomes likely to be achieved? Are the outcomes likely to contribute to the achievement of the project objective?	Existence of logical linkages between project outcomes and impacts	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Are impact level results likely to be achieved? Are the likely to be at the scale sufficient to be considered Global Environmental Benefits?	- Environmental indicators - Level of progress through the project's Theory of Change	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review

Evaluation Questions	Indicators	Sources	Data Collection Method
Evaluation Criteria: Sustainability			
To what extent are project results likely to be dependent on continued financial support? What is the likelihood that any required financial resources will be available to sustain the project results once the GEF assistance ends?	- Financial requirements for maintenance of project benefits - Level of expected financial resources available to support maintenance of project benefits - Potential for additional financial resources to support maintenance of project benefits	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Do relevant stakeholders have or are likely to achieve an adequate level of “ownership” of results, to have the interest in ensuring that project benefits are maintained?	Level of initiative and engagement of relevant stakeholders in project activities and results	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Do relevant stakeholders have the necessary technical capacity to ensure that project benefits are maintained?	Level of technical capacity of relevant stakeholders relative to level required to sustain project benefits	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
To what extent are the project results dependent on socio-political factors?	Existence of socio-political risks to project benefits	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
To what extent are the project results dependent on issues relating to institutional frameworks and governance?	Existence of institutional and governance risks to project benefits	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Are there any environmental risks that can undermine the future flow of project impacts and Global Environmental Benefits?	Existence of environmental risks to project benefits	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review
Cross-cutting and UNDP Mainstreaming Issues			
Did the project take incorporate gender mainstreaming or equality, as relevant?	Level of appropriate engagement and attention to gender-relevant aspects of the project	- Project documents - Project staff - Project stakeholders	- Field visit interviews - Desk review

D. Annex 4: Terminal Evaluation Draft Interview Guide

***Overview:** The questions under each topic area are intended to assist in focusing discussion to ensure consistent topic coverage and to structure data collection, and are not intended as verbatim questions to be posed to interviewees. When using the interview guide, the interviewer should be sure to target questions at a level appropriate to the interviewee. The interview guide is one of multiple tools for gathering evaluative evidence, to complement evidence collected through document reviews and other data collection methods; in other words, the interview guide does not cover all evaluative questions relevant to the evaluation.*

Key

Bold = GEF Evaluation Criteria

Italic = GEF Operational Principles

I. PLANNING / PRE-IMPLEMENTATION

A. **Relevance**

- i. Did the project's objectives fit within the priorities of the local government and local communities?
- ii. Did the project's objectives fit within national priorities?
- iii. Did the project's objectives fit GEF strategic priorities?
- iv. Did the project's objectives support implementation of the relevant multi-lateral environmental agreement?

B. *Incremental cost*

- i. Did the project generate adaptation benefits that would not have otherwise taken place?

C. *Country-drivenness / Participation*

- i. How did the project concept originate?
- ii. How did the project stakeholders contribute to the project development?
- iii. Do local and national government stakeholders support the objectives of the project?
- iv. Do the local communities support the objectives of the project?
- v. Are the project objectives in conflict with any national level policies?

D. Monitoring and Evaluation Plan / Design (*M&E*)

- i. Were monitoring and reporting roles clearly defined?
- ii. Was there either an environmental or socio-economic baseline of data collected before the project began?

II. MANAGEMENT / OVERSIGHT

A. Project management

- i. What were the implementation arrangements?
- ii. Was the management effective?

- iii. Were workplans prepared as required to achieve the anticipated outputs on the required timeframes?
- iv. Did the project develop and leverage the necessary and appropriate partnerships with direct and tangential stakeholders?
- v. Were there any particular challenges with the management process?
- vi. If there was a steering or oversight body, did it meet as planned and provide the anticipated input and support to project management?
- vii. Were risks adequately assessed during implementation?
- viii. Did assumptions made during project design hold true?
- ix. Were assessed risks adequately dealt with?
- x. Was the level of communication and support from the implementing agency adequate and appropriate?

B. Flexibility

- i. Did the project have to undertake any adaptive management measures based on feedback received from the M&E process?
- ii. Were there other ways in which the project demonstrated flexibility?
- iii. Were there any challenges faced in this area?

C. Efficiency (cost-effectiveness)

- i. Was the project cost-effective?
- ii. Were expenditures in line with international standards and norms?
- iii. Was the project implementation delayed?
- iv. If so, did that affect cost-effectiveness?
- v. What was the contribution of cash and in-kind co-financing to project implementation?
- vi. To what extent did the project leverage additional resources?

D. Financial Management

- i. Was the project financing (from the GEF and other partners) at the level foreseen in the project document?
- ii. Were there any problems with disbursements between implementing and executing agencies?
- iii. Were financial audits conducted with the regularity and rigor required by the implementing agency?
- iv. Was financial reporting regularly completed at the required standards and level of detail?
- v. Did the project face any particular financial challenges such as unforeseen tax liabilities, management costs, or currency devaluation?

E. Co-financing (catalytic role)

- i. Was the in-kind co-financing received at the level anticipated in the project document?
- ii. Was the cash co-financing received at the level anticipated in the project document?
- iii. Did the project receive any additional unanticipated cash support after approval?

- iv. Did the project receive any additional unanticipated in-kind support after approval?

F. Monitoring and Evaluation (M&E)

- i. Project implementation M&E
 - a. Was the M&E plan adequate and implemented sufficiently to allow the project to recognize and address challenges?
 - b. Were any unplanned M&E measures undertaken to meet unforeseen shortcomings?
 - c. Was there a mid-term evaluation?
 - d. How were project reporting and monitoring tools used to support adaptive management?
- ii. Environmental and socio-economic monitoring
 - a. Did the project implement a monitoring system, or leverage a system already in place, for environmental monitoring?
 - b. What are the environmental or socio-economic monitoring mechanisms?
 - c. Have any community-based monitoring mechanisms been used?
 - d. Is there a long-term M&E component to track environmental changes?
 - e. If so, what provisions have been made to ensure this is carried out?

E. Full disclosure

- i. Did the project meet this requirement?
- ii. Did the project face any challenges in this area?

III. ACTIVITIES / IMPLEMENTATION

A. Effectiveness

- i. How have the stated project objectives been met?
- ii. To what extent have the project objectives been met?
- iii. What were the key factors that contributed to project success or underachievement?
- iv. Can positive key factors be replicated in other situations, and could negative key factors have been anticipated?

B. Stakeholder involvement and public awareness (*participation*)

- i. What were the achievements in this area?
- ii. What were the challenges in this area?
- iii. How did stakeholder involvement and public awareness contribute to the achievement of project objectives?

IV. RESULTS

A. Outputs

- i. Did the project achieve the planned outputs?
- ii. Did the outputs contribute to the project outcomes and objectives?

B. Outcomes

- i. Were the anticipated outcomes achieved?

- ii. Were the outcomes relevant to the planned project impacts?

C. Impacts

- i. Was there a logical flow of inputs and activities to outputs, from outputs to outcomes, and then to impacts?
- ii. Did the project achieve its anticipated/planned impacts?
- iii. Why or why not?
- iv. If impacts were achieved, were they at a scale sufficient to be considered Global Environmental Benefits?
- v. If impacts or Global Environmental Benefits have not yet been achieved, are the conditions (enabling environment) in place so that they are likely to eventually be achieved?

D. Replication strategy, and documented replication or scaling-up (*catalytic role*)

- i. Did the project have a replication plan?
- ii. Was the replication plan “passive” or “active”?
- iii. Is there evidence that replication or scaling-up occurred within the country?
- iv. Did replication or scaling-up occur in other countries?

V. LESSONS LEARNED

- A. What were the key lessons learned in each project stage?
- B. In retrospect, would the project participants have done anything differently?

VI. SUSTAINABILITY

A. Financial

- i. To what extent are the project results dependent on continued financial support?
- ii. What is the likelihood that any required financial resources will be available to sustain the project results once the GEF assistance ends?
- iii. Was the project successful in identifying and leveraging co-financing?
- iv. What are the key financial risks to sustainability?

B. Socio-Political

- i. To what extent are the project results dependent on socio-political factors?
- ii. What is the likelihood that the level of stakeholder ownership will allow for the project results to be sustained?
- iii. Is there sufficient public/stakeholder awareness in support of the long-term objectives of the project?
- iv. What are the key socio-political risks to sustainability?

C. Institutions and Governance

- i. To what extent are the project results dependent on issues relating to institutional frameworks and governance?
- ii. What is the likelihood that institutional and technical achievements, legal frameworks, policies and governance structures and processes will allow for the project results to be sustained?
- iii. Are the required systems for accountability and transparency and the required technical know-how in place?

- iv. What are the key institutional and governance risks to sustainability?
- D. Ecological
 - i. Are there any environmental risks that can undermine the future flow of project impacts and Global Environmental Benefits?

E. Annex 5: Rating Scales

Rating Criteria	Rating Scale
Relevance	• Relevant (R) • Not-relevant (NR)
Effectiveness, Efficiency, Results, GEF principles, other lower-level ratings criteria, etc.	• Highly satisfactory (HS): There were no shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Satisfactory (S): There were minor shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Moderately satisfactory (MS): There were moderate shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Moderately unsatisfactory (MU): There were significant shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Unsatisfactory (U): There were major shortcomings in the achievement of objectives in terms of effectiveness or efficiency • Highly unsatisfactory (HU): There were severe shortcomings in the achievement of objectives in terms of effectiveness or efficiency
Sustainability	• Likely (L): Negligible risks to sustainability, with key outcomes expected to continue into the foreseeable future • Moderately Likely (ML): Moderate risks, but expectations that at least some outcomes will be sustained • Moderately Unlikely (MU): Substantial risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on • Unlikely (U): Severe risk that project outcomes as well as key outputs will not be sustained
Impact	• Significant (S): The project contributed to impact level results (changes in ecosystem status, etc.) at the scale of global benefits (e.g. ecosystem wide, significant species populations, etc.) • Minimal (M): The project contributed to impact level results at the site-level or other sub-global benefit scale • Negligible (N): Impact level results have not (yet) been catalyzed as a result of project efforts
Other	• Not applicable (N/A) • Unable to assess (U/A) • Not specified (N/S)

F. Annex 6: Stakeholders Interviewed

The following people were interviewed as an input to the evaluation.

Full name	Organization	Title	Relationship to project
Emil Sultanov	Water Resources State Agency of the Ministry of Emergency Situations	Member of Monitoring Division	
Fuad Shahbuzov	Water Resources State Agency of the Ministry of Emergency Situations	Member of Monitoring Division	
Samir Abbasov	Water Resources State Agency of the Ministry of Emergency Situations	Head of Monitoring Division, Project Lead Modeller	Expert
David Milton	Independent expert	International Chief Technical Advisor	Expert
Mezahir Efendiyev	UNDP Azerbaijan	Project manager	Project manager
Shamil Rzayev	UNDP Azerbaijan	Senior Programme Advisor	Senior Programme Advisor
Alessandro Fracassetti	UNDP Azerbaijan	Deputy Resident Representative	Deputy Resident Representative
Sadiq Bakirli	North-Western Regional Centre of the Ministry of Emergency Situations	Chief	
Agshin Ibrahimli	Monitoring and technical safety organization sector of the Ministry of Emergency Situations	Director	
Tural Aghayev	Department of work with territorial bodies of the Ministry of Emergency Situations	Chief	
Akbar Asgarov	National Hydrometeorology Department of the Ministry of Ecology and Natural Resources	Deputy of director	
Ajdar Javadov	Azerbaijan melioration and water impact OJSC	Chief of Department	
Azar Rafiyev	Tikanli Community	Community leader	Participant
Community leaders and Municipality chairs of Mixligovag, Bum, Cighatelli, Hamzarli, Gamaravan			

G. Annex 7: Documents Reviewed

Project-related Documents

- UNDP Project Document
- Project Inception Report
- 2014, 2015, 2016 Project Implementation Reports (PIRs)
- Minutes of the Project Board meetings
- Project Budget Revisions
- List of Contracts and Procurement Items
- Co-financing summary table
- Project financial data provided by the project management unit
- Project annual workplans
- AMAT for mid-term and project completion

H. Annex 8: Evaluation Field Mission Itinerary

Day	Time	Mission	Notes
Monday July 10th	11 am	Meeting with project institutional expert	Project office
	11:30 am	Meeting with Project officer and Project manager in UNDP office	
	1 pm	Lunch	
	2:45 pm	Meeting with project hydromet monitoring experts	
Tuesday July 11th	7 am	Departure to the project area	
	11:30 am	Meeting with the head of the northwest regional center of the Ministry of Emergency Situations	
	12:45 pm	Meeting with staff of the regional center of the Ministry of Emergency Situations	Including inspection of project-provided emergency response equipment
	2pm	Lunch at regional center cafeteria	
	3pm	Group Panel: Representatives of Mikhliqovaq, Bum, and Jighatelli villages from Turyanchay river basin	Local stakeholder interviews
	4pm-6pm	Travel to Tikanli village, and meeting with head of Tikanli village	Turyanchay river basin
	6pm-8pm	Visit installed high-elevation hydrological and meteorological station	Gebele region
Wednesday July 12th	9am-3pm	Visit installed hydrological and meteorological stations at Mingecevir reservoir and downstream points	Including return to Baku
	3pm	Meeting in the project office with CTA	David Milton
Thursday July 13th	9 am	Meeting in the project office with project hydraulic modeling expert	
	10 am	Meeting project partner organization	State hydrometeorology department, Ministry of Environment and Natural Resources
	12 pm	Meeting in the project office with project hydraulic modeling expert	
	1:00 pm	Lunch	
	2:30 pm	Meeting in the project office with project expert legal expert	
	4:00 pm	Meeting project partner organization	AzerSU JSC
	5 pm	Debriefing with UNDP Project Officer and UNDP DRR	UNDP Offices

I. Annex 9: Water and Flood Management Project Financial Tables

ORIGINAL BUDGET (Prodoc ATLAS)	2012	2013	2014	2015	2016	2017	Total
Component 1	\$120,413	\$125,116	\$77,466	\$84,519	\$107,569	\$-	\$515,083
Component 2	\$139,316	\$184,516	\$245,466	\$198,816	\$106,969	\$-	\$875,083
Component 3	\$223,566	\$248,116	\$200,516	\$187,616	\$295,270	\$-	\$1,155,084
Project Management	\$30,950	\$30,950	\$30,950	\$30,950	\$30,950	\$-	\$154,750
UNDP TRAC	\$60,000	\$50,000	\$50,000	\$50,000	\$50,000	\$-	\$260,000
Total	\$574,245	\$638,698	\$604,398	\$551,901	\$590,758	\$-	\$2,960,000
ACTUAL EXPENDITURE (Project Team Financial Files)	2012	2013	2014	2015	2016	2017	Total
Component 1	\$16,450	\$100,267	\$197,089	\$68,007	\$112,372	\$22,406	\$516,591
Component 2	\$27,500	\$144,453	\$300,386	\$193,020	\$207,730	\$41,733	\$914,822
Component 3	\$27,397	\$109,091	\$234,962	\$407,776	\$245,306	\$128,528	\$1,153,060
Project Management	\$10,107	\$65,441	\$96,808	\$67,378	\$35,174	\$18,952	\$293,860
Total	\$81,455	\$419,252	\$829,245	\$736,181	\$600,581	\$293,286	\$2,960,000
Actual Delivery vs Original PRODOC Budget	2012	2013	2014	2015	2016	2017	Total
Component 1	13.66%	80.14%	254.42%	80.46%	104.46%	N/A	100.29%
Component 2	19.74%	78.29%	122.37%	97.08%	194.20%	N/A	104.54%
Component 3	12.25%	43.97%	117.18%	217.35%	83.08%	N/A	99.82%
Project Management	32.66%	211.44%	312.79%	217.70%	113.65%	N/A	189.89%
Total	14.18%	65.64%	137.20%	133.39%	101.66%	N/A	100.00%
Revision 1 – 2012 (Excel 2012)	2012	2013	2014	2015	2016	2017	Total
Component 1	\$16,450	\$229,079	\$77,466	\$84,519	\$107,569	\$-	\$515,083
Component 2	\$29,500	\$294,332	\$245,466	\$198,816	\$106,969	\$-	\$875,083
Component 3	\$31,250	\$460,432	\$210,516	\$197,616	\$305,270	\$-	\$1,205,084
Project Management	\$21,000	\$130,900	\$70,950	\$70,950	\$70,950	\$-	\$364,750
Total	\$98,200	\$1,114,743	\$604,398	\$551,901	\$590,758	\$-	\$2,960,000
Revision 2 – 2013 (Excel 2013)	2012	2013	2014	2015	2016	2017	Total
Component 1	\$16,450 ¹²	\$149,750	\$156,795	\$84,519	\$107,569	\$-	\$515,083
Component 2	\$27,500	\$271,800	\$272,851	\$198,816	\$106,969	\$-	\$877,936
Component 3	\$27,397	\$359,800	\$323,041	\$197,616	\$305,270	\$-	\$1,213,124
Project Management	\$10,107	\$100,900	\$100,950	\$70,950	\$70,950	\$-	\$353,857
Total	\$81,455	\$882,250	\$853,637	\$551,901	\$590,758	\$-	\$2,960,000
Revision 3 – 2014 (Excel 2014)	2012	2013	2014	2015	2016	2017	Total
Component 1	\$16,450	\$100,267	\$224,500	\$86,486	\$87,380	\$-	\$515,083
Component 2	\$27,500	\$144,453	\$334,000	\$220,930	\$148,200	\$-	\$875,083
Component 3	\$27,397	\$109,091	\$409,893	\$336,505	\$322,270	\$-	\$1,205,156
Project Management	\$10,107	\$65,441	\$100,950	\$85,566	\$102,613	\$-	\$364,677
Total	\$81,455	\$419,252	\$1,069,343	\$729,487	\$660,463	\$-	\$2,960,000

¹² For each revision year, the prior years' budget are actual expenditures, and therefore are indicated in green text.

Revision 4 – 2015 (Excel 2015)	2012	2013	2014	2015	2016	2017	Total
Component 1	\$16,450	\$100,267	\$197,089	\$68,007	\$119,016	\$-	\$500,829
Component 2	\$27,500	\$144,453	\$300,386	\$193,020	\$239,771	\$-	\$905,130
Component 3	\$27,397	\$109,091	\$234,962	\$407,776	\$440,876	\$-	\$1,220,102
Project Management	\$10,107	\$65,441	\$96,808	\$67,378	\$94,204	\$-	\$333,938
Total	\$81,455	\$419,252	\$829,245	\$736,181	\$893,867	\$-	\$2,960,000
Revision 5 – 2016 (Excel 2016)	2012	2013	2014	2015	2016	2017 ¹³	Total
Component 1	\$16,450	\$100,267	\$197,089	\$68,007	\$77,891	\$-	\$459,704
Component 2	\$27,500	\$144,453	\$300,386	\$193,020	\$198,440	\$-	\$863,799
Component 3	\$27,397	\$109,091	\$234,962	\$407,776	\$347,666	\$-	\$1,126,892
Project Management	\$10,107	\$65,441	\$96,808	\$67,378	\$42,157	\$-	\$281,891
Total	\$81,455	\$419,252	\$829,245	\$736,181	\$666,154	\$227,713	\$2,960,000
Revision 6 – 2017 (Excel 2017)	2012	2013	2014	2015	2016	2017	Total
Component 1	\$16,450	\$100,267	\$197,089	\$68,007	\$112,372	\$28,562	\$522,747
Component 2	\$27,500	\$144,453	\$300,386	\$193,020	\$207,730	\$44,000	\$917,089
Component 3	\$27,397	\$109,091	\$234,962	\$407,776	\$245,306	\$175,723	\$1,200,255
Project Management	\$10,107	\$65,441	\$96,808	\$67,378	\$35,174	\$45,000	\$319,908
Total	\$81,455	\$419,252	\$829,245	\$736,181	\$600,582	\$293,285	\$2,960,000
Annual Total Financial Delivery Rate	2012	2013	2014	2015	2016	2017	Total
vs Original	14.18%	65.64%	137.20%	133.39%	101.66%	N/A	100.00%
vs Revised	82.95%	47.52%	77.55%	100.00% ¹⁴	90.16%	72.15%	100.00%
ACTUAL VS REVISED VS ORIGINAL PLANNED	2012	2013	2014	2015	2016	2017	Total
Original	\$574,245	\$638,698	\$604,398	\$551,901	\$590,758	\$-	\$2,960,000
Revised	\$98,200	\$882,250	\$1,069,343	\$736,181	\$666,154	\$227,713	\$3,679,841
Actual	\$81,455	\$419,252	\$829,245	\$736,181	\$600,581	\$293,286	\$2,960,000
Planned VS Actual By Component	Planned	Actual					
Component 1	\$515,083	\$516,591					
Component 2	\$875,083	\$914,822					
Component 3	\$1,155,084	\$1,153,060					
Project Management	\$414,750	\$293,860					

¹³ The project no-cost extension to August 2017 was only approved in the 2nd half of 2016, after the 2016 budget revision had been completed. Therefore there was still no planned expenditure for 2017 at this time; however, the planned expenditure for 2016 does imply that the project team expected to spend the final \$227,713 of the project budget in 2017.

¹⁴ For 2015 the “revised” budget matches actual expenditure for 2015 (giving an exactly 100% delivery of the “revised” figures), which implies that the 2015 budget revision was completed after the fiscal year was completed.

J. Annex 10: Water and Flood Management Project Results Framework Assessed Level of Indicator Target Achievement

Note: The below assessment is based on the results framework that was in the project document, and which was used by the project team in the annual PIRs through the 2016 PIR, which was the last PIR that was completed at the time of the project terminal evaluation. However, a revision to the results framework was developed in the project's mid-2016 strategic revision, and was applied in the project's final PIR, the 2017 PIR. The 2017 PIR was not available for this terminal evaluation.

Results Framework Assessment Key

Green = Achievement Likely / Achieved / Exceeded	Yellow = Achievement Uncertain	Red = Achievement Unlikely	Gray = Not applicable
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Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
Objective	To reduce the vulnerability of the communities of the Greater Caucasus (GC) region of Azerbaijan to water stress and hazards by improved water and flood management.	1. # of hectares in the GC affected by improved CRM practices.	Zero. There are no programs in place currently focused on improving climate risk management in the areas of flood and water management.	Improved climate risk management affecting over 22,067 sq. km (2,206,700 ha) of land in highly vulnerable region of Greater Caucasus.	The indicated target of 22,067 sq. km. was determined to be in error and has subsequently been updated to 10,838 sq. km. With the installation of the centralized flood warning system and the community-based flood forecasting and early warning system, some 3,000 sq. km. of the project area (most of the Turyanchay river basin) is now covered by some level of climate risk management. A change of focus of the principal beneficiary agency (SAWR of the Ministry of Emergency Situations) away from the Greater Caucasus to the Kura river basin has resulted in both impediments and opportunities for the continuing work of the	<i>Exceeded. Concur with self-assessment. The project area of focus shifted from the original Caucasus foothills river basin areas, such that the only significant project focus was on the Turyanchay basin, which covers approximately 3,000 sq km. However, the project then expanded to cover a significant portion of the Kura river basin, downstream from the original project area. The area covered in this part</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
					project. The impediments result from the lack of Government co-financing of activities and equipment purchase for the continuance of meaningful activities within the existing project area of the Greater Caucasus and the mountainous communities. However, the re-aligned focus on the Kura river basin allows the project to make significant contributions to climate-related disaster mitigation on a much larger scale through the extension of flood forecasting and warning systems to this national-scale basin. Likewise, vulnerable communities in this enlarged area will benefit from the knowledge and experience gained through work done to date with the mountainous communities in the Turyanchay basin. The potential target level for climate risk management will be increased to 19,000 sq. km once additional flood forecasting stations are installed on the Kura river and tributaries. Improved climate risk management affecting approximately 4,000 sq. km of land in the Turyanchay and Kishchay basins on the southern slopes of the Greater Caucasus. Some 15,000 sq. km. (1,500,000 ha.) of the	<i>of the project is significantly larger than the originally planned target (the corrected figure of 10,838 sq km). The terminal evaluation validated that the project has covered the indicated 4,000 sq km in the Turyanchay and Kishchay basins, as well as the 15,000 sq km of the Kura river basin, for a total of 19,000 sq km. With the modern monitoring systems and centralized monitoring database the potential for water basin management and modeling should be significantly improved in years ahead, although proper modeling requires many years of data – the more the better, but in the range of 5-20 years.</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
					Kura river basin resulting from reservoir operation improvement	
		2. # of people who benefit from locally tailored CRM practices for flood and water risk management.	Zero. There are no locally tailored climate change adaptation practices in place.	1,000,0000 people benefit from improved CRM practices across the GC region.	The figure of 1,000,000 was determined to be in error and has been re-assessed as approximately 650,000 within the original project area. Work undertaken on the installation of FFEWS in the Turyanchay basin will benefit some 211,000 persons. FFEWS for the Kishchay will also benefit some 200.000 person. Expanding the project area into the Kura basin and bringing climate risk management to this basin will benefit a further 800.000 persons. According that in total project will cover some 1.200.000 person. Project actively work directly with the communities to establish CBFWEWS and be sure that it will work after the closer of the project. Some of the community already equipped with first emergency response tool kits and trained to use them. To adopt proposed CBFWEWS to the current situation project team jointly with the North-West Regional Center of the MoES conduct a lot of field consultations.	<i>Exceeded. Concur with self-assessment. The expansion of the project area to include the Kura river basin area has allowed the project to exceed the initial (corrected) target of 650,000 people. The actual increase in resilience and DRR for the people living in the Kura river basin is significantly lower than the improved resilience and reduced risk in the Turyanchay basin (211,000 people), which was the focus of the most intensive project efforts.</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
		3. Number and Type of adaptation actions implemented in national development frameworks; (AMAT Outcome Indicator 1.1.1.)	0 Normative Legal Acts (NLA); water code does not have IWRM relevant normative legal acts 0 NLA; water code does not have relevant normative legal acts 0 NLA; water code does not have relevant normative legal acts 0 NLA; water code does not have relevant normative legal acts	1 NLA; IWRM principles integrated in water policy 1 NLA; Flood zoning regulations introduced in water code 1 NLA; Conjunctive water management part of the water policy 1 NLA; Public participation and gender representation rules as part of the water and flood management policy	It should be pointed out that the legal instruments developed under this project will not only benefit the project area, but can be applied on a National basis, thus providing considerably wider coverage of direct and indirect benefits. During reporting period project team held 3 meetings of the LWG to conduct discussions on proposed changes to NLA. All NLAs finalized and submitted for official comments to concerned institutions. No comments received. Documents are now with MoES for presentation to Cabinet of Ministers.	<i>Partially achieved. Concur with self-assessment. Proposals and revisions not yet adopted by the government. If these proposals are actually adopted (and implemented) then the results of the project will be substantially increased, although this is only likely to happen in the 1-3 years following project completion.</i>
Outcome 1	Water and Flood management framework is modified to respond to adaptation needs and improve climate risk management.	4. # of articles included into the Water Code supporting non-structural climate change adaptation practices and their implementation.	Zero. The Water Code is not sensitized to climate risks in water and flood management.	At least 3 new CC-A focused articles included into the water code by end of project.	Draft proposals for changes to Water Code and Draft Presidential Decree and Decree of the Cabinet of the Ministers on making amendments to Water Code and other NLA's prepared and finalized. Documents now with MoES.	<i>Partially achieved. Concur with self-assessment. Proposed revisions and amendments developed by the project not yet adopted by the government as of the end of the project. Project experts estimate it could take another 6-12 months, if not longer,</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
						<i>depending on the continued level of priority that the government places on this issue, once the project has been completed.</i>
		5. Development frameworks include specific budgets for adaptation actions	no flood zoning policies and regulations (level of action: national, local and community) no conjunctive water management practice (level of action: national, local and community)	flood zoning regulations included in flood and river management (level of action: local and community level covering 400km of the target river body) conjunctive water management model developed (national, local and community level)	The present level of data reliability and hence reliability of flood maps is inadequate to form the basis for flood zoning. Until such time as improved data becomes available, updated models produced and verified, and flood zones clearly defined, there is little scope for preparation of definitive flood zoning regulations. Community awareness is being built of the need to respect areas prone to flooding and, based on the likely frequency of events, determine the type of development and restrictions on development that should be incorporated into the future regulations. Little further direct work can be done on this output owing to the fundamental inadequacy of basic data and information. SAWR staff were well trained to continue the production and updating of these flood maps.	<i>Not achieved, concur with self-assessment. However, it should be noted that this indicator should be disregarded considering the issues of the erroneous assumptions related to the project design.</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
		6. Water Code does/does not mandate unified management or collaborative approaches to reduce climate-induced risk of increased flood damage and water stress.	Water Code is not sensitized to the importance of collaborative approaches to climate risk reduction.	Amended water code mandates unified management and/or collaborative approaches to reducing CC risk of increased flooding and water stress.	Draft changes to Water Code prepared and passed to MoES for further actions.	<i>Partially achieved. Concur with self-assessment. Proposed revisions and amendments developed by the project not yet adopted by the government as of the end of the project. Project experts estimate it could take another 6-12 months, if not longer, depending on the continued level of priority that the government places on this issue, once the project has been completed.</i>
Outcome 2	Key institutions have capacities, technical skills, tools and methods to apply advanced climate risk management practices for water stress and flood mitigation.	7. Capacity Perception Index Score (1 - 5) to be disaggregated by gender 1. No capacity built 2. Initial Awareness raised (e.g. workshops, seminars) 3. Substantial training in practical application (e.g.	Baseline Score for Male and Female = 1. No capacity built for climate change adaptation and risk reduction.	Target Score for Male and Female = 3. Substantial training in practical application (e.g. vocational training).	Workshop on IWRM as Tool for Climate Change Impact Mitigation- 5-6 August 2015 in Gabala (60%M, 40%F CPI Level 2) WEAP Training- 19-30 October 2015 (Hydroc GmbH) (70%M, 30%F, CPI level 3) Trainings on EWS held on February 8-10, 2016 in Gabala ((60%M, 40%F, CPI level 2) Trainings on EWS held on April 7-8, 2016 in Gabala (60%M, 40%F, CPI level 2) Trainings on Flood Management seminar/workshop held on May 26-27, 2016 in Gabala (60%M,40%F, CPI level 2) Training	<i>Not yet achieved. Concur with self-assessment. As indicated, a majority of the trainings have so far resulted in CPI scores of 2, while the target is 3.</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
		vocational training) 4. Knowledge effectively transferred (e.g. passing examination, certification) 5. Ability to apply or disseminate knowledge demonstrated. (AMAT Outcome Indicator 2.2.2) Capacity Perception Index Score (1 - 5) to be disaggregated by gender 1. No capacity built 2. Initial Awareness raised (e.g. workshops, seminars) 3. Substantial training in practical application (e.g. vocational training) 4. Knowledge effectively			with the communities in the villages on CBEWS Sept 2015(50%M, 50%F, CPI level 2) Training with the communities in the villages on risk awareness 20-25 November 2015 (50%M, 50%F, CPI level 2) Training with the WUA on their responsibilities 1-5 December 2015 (60%M, 40%F, CPI level 2) Focus group meetings with communities (100%F, CPI level 2) Development of flood model for Kishchay basin July-Nov 2015 (100%M, CPI level 3)	

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
		transferred (e.g. passing examination, certification) 5. Ability to apply or disseminate knowledge demonstrated. (AMAT Outcome Indicator 2.2.2)				
		8. AMAT Output Indicator 2.1.1.1: Updated risk and vulnerability assessment. Yes/No	No, there is no updated risk and vulnerability assessment	Yes. There will be an updated risk and vulnerability assessment by end of project.	Risk and vulnerability assessments are programmed for end 2016. Project currently searching for international expert to accompany local expert.	Unable to assess. AMAT data does not correspond to the indicator. It is believed that the project did work on a risk and vulnerability assessment, but the final product and status could not be verified by the terminal evaluation.
		9. AMAT Output Indicator 2.1.1.2: Updated risk and vulnerability assessment conducted. Yes/No	No, there is no updated risk and vulnerability assessment conducted.	Yes. An updated risk and vulnerability assessment conducted by end of project as part of project's work to produce model flood risk maps and participatory mapping processes	Risk and vulnerability assessments are programmed for end 2016. Project currently searching for international expert to accompany local expert.	Unable to assess. AMAT data does not correspond to the indicator. It is believed that the project did work on a risk and vulnerability assessment, but the final product and status could not be verified by the terminal evaluation.

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
		10. AMAT Output Indicator 2.1.2.1: Number and Type of monitoring systems in place.	0 High elevation meteorological stations; 0 River Monitoring meteorological stations; 0 Community-based early warning for floods; 0 Community-based water stress early warning	6 High elevation meteorological stations; 3 High-altitude river monitoring meteorological stations; 3 Community-based early warning for floods; 3 Community-based water stress early warning	1 high-elevation meteorological station and 1 river monitoring station have been installed. Funds may be available for the further installation of 1 meteorological station and one water level station in the Kishchay basin. Community based FFEWS have been installed in the Turyanchay basin and (funding permitting) further systems will be installed at appropriate locations in the Kishchay basin. Tentative locations for 6 further water level recorder stations on the Kura and tributaries with one further hydrometeorological / water level station at Mingechevir Reservoir have been determined.	<i>Partially achieved. Concur with self-assessment. The full number of planned monitoring stations envisioned in the project document were not installed, as the geographic focus of the project was shifted from the downstream areas of the lower Caucasus to the Kura river basin.</i>
Outcome 3	Community resilience to floods and water stress improved by introducing locally tailored climate risk management practices.	11. Number of WUA created / and or strengthened for CRM with respect to water stress and floods in project area. Percentage increase in representation of women in pilot WUAs.	Zero Water User Associations (WUA) strengthened for CRM in project area. Women are underrepresented in WUAs.	At least 5 by end of year 2; 10 by end of year 4; and 15 by end of project. At least 20% women in all pilot WUAs by end of project	Work on creating/strengthening Water User Associations in the context of expanding roles into water management has been curtailed. Based on experience gained in setting up 5 WUAs in the Turyanchay basin, it has become clear that 1) present capacity levels are not adequate for meaningful strengthening and 2) it is questionable whether water user associations should be the prime movers in IWRM, given their established focus on irrigation systems. This is an issue that would	<i>Not achieved. This activity was not fully pursued, due to issues with the project document assumptions and plans.</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
					need to be taken up on a much broader scale. The project continues to build awareness at every opportunity.	
		12. Number of Local Stakeholder Committees with at least 20% women representation.	Zero. There are no such LSCs in place.	By end of Year 2, at least 3 Local Multi-Stakeholder Committees (LSCs) actively involved with regional administration in addressing climate change responses and water stress and flood damage mitigation. 6 by end of year 4 and 9 by end of project, all with at least 20% women membership.	The Local Stakeholder Committee in the Turyanchay basin has been particularly active in the establishment of the Community-based FFEWS in that basin. Initial groundwork has been prepared for the establishment of a further LSC in the Kishchay basin in support of the CBFFEWS to be set up in that basin. A workshop was held in Gabala in August Of 2015 at which members and potential members of Local Stakeholder Committees were given specific information regarding threats from climate change and how IWRM tools could be used to mitigate these effects. For today project established 5 WUAs in Turyanchay RB and now work on strengthening of the knowledge and capacity through meeting and trainings for them. 40% of the WUA members are women. 5 meetings were held with the Turyanchay LSC during the year and 4 with potential members of the Kishchay basin LSC. Issues discussed were risk awareness; information	<i>Partially achieved. Concur with self-assessment. This has not been achieved to the extent envisioned in the project document, as the project's geographic focus shifted from the downstream areas of the Caucuses to the full Kura river basin. In the Turyanchay area where the project most strongly focused, there was good progress on engagement and participation of local communities and stakeholders.</i>

Objective / Outcome	Description	Description of Indicator	Baseline Level	Target Level at end of project	Self-assessment (2016 PIR)	TE Assessment
					dissemination; the CBFFEWS; and the collection of information on perceived challenges faced by the local communities.	
		13. Relevant risk information disseminated to stakeholders. (AMAT Outcome Indicator 2.1.1).	No, relevant risk information is not disseminated to stakeholders.	Yes, relevant risk information will be disseminated to stakeholders.	Risk information has been disseminated to stakeholders through workshops held during the reporting period. Preliminary, indicative flood maps have been produced and circulated and discussed with local communities in an effort to secure greater awareness of the current and potential risks of flooding. Visits were made to Balakan, Qax and Zaqatala to disseminate/collect information on risk and climate change impacts.	<i>Partially achieved. Concur with self-assessment. This has been completed to the extent feasible and realistic with the available data, but unfortunately it was not possible to achieve this to the level of detail originally envisioned, due to data issues that were not adequately assessed and anticipated in the project design phase.</i>
		14. Number of rayon's to which climate-risk watershed management planning is replicated.	Climate-risk watershed management planning has not yet been piloted, much less replicated.	6 climate-risk watershed management plans in addition to the 3 pilot rayons for a total of 9.	Given the lack of resources now available to the project, meaningful development of full watershed management plans is unrealistic. Any plans will be limited to actions and activities related to the Community-based FFEWS installed in the Turyanchay basin and, if funds permit, the Kishchay basin.	<i>Not achieved. Concur with self-assessment.</i>

K. Annex 11: Water and Flood Management Project Mainstreaming of UNDP Programme Principles

Programming Principle	Project Principle Mainstreaming Approach
UNDAF / CPAP / CPD	The project is in-line with the relevant UNDP and Government of Azerbaijan strategic documents.
Poverty-Environment Nexus / Sustainable Livelihoods	The project directly addresses the poverty-environment nexus, as it draws attention to the specific issues of how environmental issues, and in particular climate change, can have negative impacts on poverty levels if these environmental issues are not effectively addressed. In this case, the effects of climate change in the lower Caucasus mountains can further impoverish local communities due to damage to infrastructure and livelihoods (e.g. fields, livestock, etc.).
Disaster Risk Reduction, Climate Change Mitigation / Adaptation	This was the direct focus of the project.
Crisis Prevention and Recovery	Not applicable.
Gender Equality / Mainstreaming	The project did include gender equality and mainstreaming aspects, and this was a relative strength of the project. As one small example, the project worked to enhance the role of women in their communities in terms of disaster risk reduction planning and water management. The full results of the project in this regard may not be fully captured through the projects original results framework indicators and targets.
Capacity Development	This was a key aspect of the project, and in particular training of multiple stakeholder groups on different aspects of climate risk reduction. The project trained a number of national level staff on key technological aspects, while strengthening community awareness and responsiveness at the local and regional levels.
Rights	The project included a rights-based approach. For example, the project worked to leverage to the oversight afforded Water User Associations with respect to the management of water access rights.