ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Regular Size Full Proposal

Country/Region: Azerbaijan
Project Title: Building Climate Resilient Cities and Communities in the Republic of Azerbaijan
Thematic Focal Area: Urban Development, Coastal Zone Management, Disaster Risk Reduction and Early Warning Systems, Water Management
Implementing Entity: United Nations Human Settlements Programme (UN Habitat)
Executing Entities: United Nations Human Settlements Programme (UN Habitat); United Nations Environment Programme (UNEP); International Organization for Migration (IOM)
AF Project ID: AF00000388
IE Project ID:
Requested Financing from Adaptation Fund (US Dollars): USD 10,000,000

Reviewer and contact person: Ahmad Ghosn
Co-reviewer(s): Neranda Maurice-George

IE Contact Person: Katja Schaefer

Technical Summary	The project "Building Climate Resilient Cities and Communities in the Republic of Azerbaijan" aims to enhance climate change adaptation and resilience of local communities in Azerbaijan while fostering necessary capacities and knowledge in Azerbaijan and throughout the Caspian Sea region. This will be done through the three components below: Component 1: Technical and institutional capacity at national and local level for long-term planning, responding and financing climate action (USD 1,470,500). Component 2: Implementation and maintenance of climate adaptation initiatives (USD 6,043,650). Component 3: Climate change adaptation solutions upscaled to communities throughout Azerbaijan (USD 977,500). Requested financing overview: Project/Programme Execution Cost: USD 798,577 Total Project/Programme Cost: USD 9,290,227 Implementing Fee: USD 709,773 Financing Requested: USD 10,000,000

	This second technical revision finds that there are still few CRs and CARs not fully addressed among other issues indicated in the below comments of the second review dated 16 June 2024 and cleared on 8th July 2024.	
Date:	**8 July 2024**	Revision: 29 July 2024

Review Criteria	**Questions**	**Comments Initial Review: 8 May 2024**	**Comments Second Review: 16 June 2024**	**IE review** (28 July 2024)
Country Eligibility	1. Is the country party to the Kyoto Protocol or the Paris Agreement?	**Yes.**	**-**	DONE – no further action required
	2. Is the country a developing country particularly vulnerable to the adverse effects of climate change?	**Yes.** Azerbaijan among other countries bordering the Caspian Sea is experiencing warming trends that surpass global average and extreme weather events that are predicted to continue with higher frequency.	**-**	DONE – no further action required
Project Eligibility	1. Has the designated government authority for the Adaptation Fund endorsed the project/programme?	**Yes.** As per the Endorsement letter dated 14 March 2024 (see p.71)	**-**	DONE – no further action required
	2. Does the length of the proposal amount to no more than one hundred (100) pages for the fully-developed project document, and one hundred (100) pages for its annexes?	**Yes.** However, the document does not fully comply with AF template format, among other issues noted below. **CAR1:** Align document contents/ sections headings with the AF Template for single country fully developed project/ program.	. **CAR1**: **Cleared.**	**CAR2**: Programme Cycle Management Fee by IE has been added to *Table 1: Programme Components, Outcomes, Outputs and Costs* (USD 709,773). **CR4**: In the revised version submitted on 10 June 2024, the table *Target areas in*

		Template can be accessed at the following link: *https://www.adaptation-fund.org/document/template-for-fullly-developed-single-country-proposal/* **CR1:** Please revise the project information sheet regarding the "Stage of Submission" and select one option (either submitted before or first submission ever). **CR2:** Double check/ revise the Table of contents as the sections of Part III are missing. **CAR2:** In Table 4 (p. 26), please include the subtotals of each component and their total, as well as the execution cost (EC) and implementation fee (IF) and the grand total as per the table included in the fully developed proposal template titled Project/Programme Components and Financing. Please ensure that the totals of the Project/Programme Components and	**CR1**: **Cleared.** **CR2: Cleared** **CAR2:** Cleared. See the table on page 25. and the Detailed Budget Part III.F, pp. 66-71. Please double check/ include Programme Cycle Management Fee by IE at the end of the table on page 25 (USD 783.410). **CAR3**: **Cleared.**	*Azerbaijan – Evaluation of Interventions and Cost Effectiveness* was introduced as Table 34 in *ANNEX 5: Programme Investment Sheets under Component 2.* **CR5**: Part II.B titled *Innovative Solutions to Climate Change Adaptation* has been deleted, and an *Acronyms/ Abbreviations List* was included in the table of contents. Moreover, the document has been proofread and typos fixed. In conclusion, section numbering (after deleting Part II.B above) has been revised.

		Financing and the Detailed budget table are aligned. Also, the grand total adds up to USD 8,000,001. Reduce either EC or IF by one dollar to match the numbers. Apply related revisions at relevant budget related tables. **CAR3:** In your presentation of project costs and fees, note that the ”total project cost” is the sum of the components cost and the execution cost. The percentages of execution cost and implementation fee are calculated as based on the ratio of their respective values to the “total project cost”. See the below link for calculating project/ program costs and fees: https://www.adaptation-fund.org/generic/costs-and-fees/ **CR3:** Under Part I, section 1.3.3. “Description of selected vulnerable Communities and Target Areas”, define selection criteria and topology	**CR3**: Cleared, See Part I, Section 1.3.3. and Table 2. **CR4**: **Not addressed.** Apparently, Part I section 2.1, Table 3 “Evaluation Matrix of Interventions” was deleted by mistake in the revised version. **CR5**: **Not addressed.** Please delete Part II.B titled “Innovative Solutions to Climate Change Adaptation”. Add acronyms/ abbreviations list and include in table of contents. Proofreading of the document is also recommended to fix several typos and to adjust section numbering (after deleting Part II.B above) and table numbering after adding deleted table of Part I section 2.1.	

		designation in Table 2 (i.e., A1, A2, A3). **CR4:** In Part I, section 2.1, Table 3 "Evaluation Matrix of Interventions", briefly define the basis for the scores and weights and refer to related annexes for related details, if any. Also note that the presented information may fit more under the section on the project/ program cost effectiveness. **CR5:** Delete the Part II section B titled "*Innovative Solutions to Climate Change Adaptation"* is not a required section and is not part of the AF project/ program template (use the text under this section at other sections if/ as relevant. Also double check/ revise the sections letter numbering under Part II.		
	3. Does the project / programme support concrete adaptation actions to assist the country in addressing adaptive capacity to the adverse effects of	**Not clear.** Project components and related activities need to be discussed under Part IIA (pp. 28-29) in sufficient	**CAR4**: **Partially addressed.** Please	**CAR4**: More details on outcome/s and outputs of each component were added and the activities under each output listed. We have ensured that the presented material is

	climate change and build in climate resilience?	detail to reflect the concrete actions. **CAR4:** Under Part II A, discuss in more detail the project components and activities under the outputs, and highlight the concrete activities that could lead to tangible outcomes. **Also discuss the project Theory of Change and indicate the AF Strategic Objectives supported by the project.** In section E page 58, please also include a clearer graphic of the theory of change as the current on is not legible.	indicate the outcome/s and the outputs of each component and list the activities under each output, Ensure that the presented material is consistent with the project/ programme results framework and related detailed budget tables.	consistent with the project/ programme results framework and related detailed budget tables.
	4. Does the project / programme provide economic, social and environmental benefits, particularly to vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** However, it is recommended to refer to Annex 7 on gender assessment and provide some overall statistics on the benefits (number of beneficiaries along with gender considerations, area of rehabilitated land, etc.). **CR6:** Under the "Economic, Social and Environmental Benefits of the Project" section, pp. 29-31, please refer to the	**CR6**: **Not fully addressed**. Please refer to Annex 7 specifically as well.	**CR6**: Reference to Annex 7 was made under the "*Economic, Social and Environmental Benefits of the Project*", and reference made to the Gender Assessment (Annex 7). We had previously already provided some overall statistics on the benefits (e.g.: No. of beneficiaries along with gender

		Gender Assessment (Annex 7) and provide some overall statistics on the benefits (e.g.: number of beneficiaries along with gender considerations, area of rehabilitated land, etc.).		considerations, area of rehabilitated land, etc.). Added relevant stats on beneficiaries and further considerations on programme impact
	5. Is the project / programme cost effective?	**Not clear.** under Part II section on "Cost-effectiveness of project" (p. 31). Discussions need to reflect cost effectiveness from a sustainability point of view and describe/ compare possible alternative options to the proposed measures. **CAR5:** In Part II section on "Cost-effectiveness of project" (p. 31), reflect on the cost effectiveness from a sustainability point of view, including description/comparison of alternative options to the proposed measures/ interventions that could have taken place in the same sector, region, or community. Provide related quantitative estimates where feasible. (Note: Information to be added is likely available in the annexes attached	**CAR5: Cleared.** See Part II, p. 33.	DONE – no further action required

		and/ or other sections of the document).		
	6. Is the project / programme consistent with national or sub-national sustainable development strategies, national or sub-national development plans, poverty reduction strategies, national communications and adaptation programs of action and other relevant instruments?	**Yes.** See related discussions under Part IIE (pp. 31-34).	-	DONE – no further action required
	7. Does the project / programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund?	**Yes.** See related discussion under Part IIF (pp. 34-35).	-	DONE – no further action required
	8. Is there duplication of project / programme with other funding sources?	**No.** Synergies with related projects and lessons learned are discussed under "Alignment of Project with other Funding Sources", pp. 35-36.	-	DONE – no further action required
	9. Does the project / programme have a learning and knowledge management component to capture	**Yes.** Activities related to knowledge management (KM) and dissemination of lessons learned are part of larger components. See related discussions	-	DONE – no further action required

	and feedback lessons?	under “Learning and Knowledge Management”, pp. 37-40.		
	10. Has a consultative process taken place, and has it involved all key stakeholders, and vulnerable groups, including gender considerations in compliance with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** See “Consultative Process” section (pp. 40-43) for related discussion and Annex 4 “Overview of Consultations, including Objectives, Outcomes and Conclusions” for further details.	-	DONE – no further action required
	11. Is the requested financing justified on the basis of full cost of adaptation reasoning?	**Yes.** See ”Justification for Funding Requested” section (pp. 43-44) for related discussions.	-	DONE – no further action required
	12. Is the project / program aligned with AF’s results framework?	**Yes.** Part IIIF, pp. 63-64, presents in detail the project/ programme alignment with pertinent AF outcomes and outputs along with pertinent indicators.	-	DONE – no further action required
	13. Has the sustainability of the project/programme outcomes been taken into account when designing the project?	**Yes.** See related discussion under section “Sustainability of the Programme Outcomes“ (pp. 44-46).	-	DONE – no further action required
	14. Does the project / programme provide an overview of environmental and social impacts / risks identified, in	**No.** “Environmental and Social Impacts and Risks” section, pp. 46-48, does not include the AF assessment checklist.	**CAR6: Addressed to a large extent** (see Part II, pp. 49-51). However, it is recommended to indicate	**CAR6**: The indication “Annex 6 includes a detailed screening of the project/ programme activities risks and impacts against the AF

	compliance with the Environmental and Social Policy and Gender Policy of the Fund?	The AF overall project risk category (e.g.: A,B,C) is also not clearly mentioned. Moreover, related discussions under this section refer to component (4), while the project only has three components. **CAR6:** Clearly state the overall project risk category (e.g.: A, B or C) in which the screening process has classified the project/programme. This category should be based on AF ESP, not the IE policy. **CAR7:** Include an AF E&S screening checklist at Part II Section K as per the proposal template. (See AF project template and related link mentioned above also reference https://www.adaptation-fund.org/wp-content/uploads/2016/07/ESP-Guidance_Revised-in-June-2016_Guidance-document-for-Implementing-Entities-on-compliance-with-the-Adaptation-Fund-	that: "Annex 6 includes a detailed screening of the project/ programme activities risks and impacts against the AF 15 E&S principles, as well as an ESMP to mitigate identified risks.". **CAR7: Addressed to a large extent** It is also recommended to indicate in column 3 of the AF screening list/ table what the type of further assessment is needed for AF E&S principles 2,3,5 and 12 (If such assessments are conducted in Annex 6, please refer to them and to the ESMP for mitigating identified risks. **CR7: Cleared**	15 E&S principles, as well as an ESMP to mitigate identified risks." was made in the relevant section. **CAR7: Indication in** column 3 of the AF screening list/ table on type of further assessment required for AF E&S principles 2,3,5 and 12 were made, as relevant. (If such assessments are conducted in Annex 6, please refer to them and to the ESMP for mitigating identified risks.

		Environmental-and-Social-Policy.pdf) and indicate the environmental and social impacts and risks identified, and measures to ensure compliance. Ensure that identified risks are consistent with those addressed in the ESMP (Annex 6). **CR7:** Revise the discussion related to project components under this section (among other sections, if any) to refer only to the three (3) components of the project.		
Resource Availability	1. Is the requested project / programme funding within the cap of the country?	**Yes.**	**-**	DONE – no further action required
	2. Is the Implementing Entity Management Fee at or below 8.5 per cent of the total project/programme budget before the fee?	**Yes.** The Implementing Entity Management Fee (*USD 626.728)* is 8.5% of the total project/programme budget/cost before the fee (USD 6,733,582)	**Cleared.** Note: The amended budget Implementing Entity Management Fee (USD 783.410) is 8.5% of the total project/programme budget/cost before the fee (USD 9,216,585).	DONE – no further action required
	3. Are the Project/Programme Execution Costs at or below 9.5 per cent of the total	**Yes.** The Execution costs (USD 639.691) are 8.7% of the total project/ programme cost (USD 6,733,582). However, UN		**CAR8:** The budget has been reviewed once more to ensure compliance. For easy reference, we have attached the excel

	project/programme budget (including the fee)?	Habitat (the Implementing Entity) is involved in the execution along with (UNEP) and (IOM), which require reducing the execution cost as per the AF related policies. **CAR8:** As per the AF policy, When the Implementing Entity (IE) serves as the Executing Entity, the limit for execution fee is 1.5%. If the IE provides part of execution services, limit the execution costs of the IE to 1.5 per cent of the cost of the part of the project or programme executed by the IE. In both cases, justifications must be provided, as this arrangement can be approved only on an exceptional basis.	**CAR8: Cleared.** Please review the costs again. It appears that there are instances where 1.5% is allocated for the IE but still 9.5 for the other EEs under the same component. If the IE takes 1.5 for the part of the component it is executing the remaining available for the other EE should be 7% for that component. Please review for compliance. Also refer to https://www.adaptation-fund.org/document/ie-and-ee-fees-calculator/	files that allow for easy follow up: (1) 240729 AF Azerbaijan budget (2nd revision final); and (2) 240729 IE-and-EE-fees-Calculations. The relevant sections in the project document have been adjusted accordingly.
Eligibility of IE	1. Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board?	**Yes.** UN Habitat is an AF accredited implementing entity.	-	DONE – no further action required
Implementation Arrangements	1. Is there adequate arrangement for project / programme management, in compliance with the	**Yes.** See Part III D for related discussions.	-	DONE – no further action required

	Gender Policy of the Fund?			
	2. Are there measures for financial and project/programme risk management?	**Partly.** Information in Part III B (pp. 52-53) "Measures for Financial and Project Risk Management" partly demonstrates this. However, concerns over the relevance of COVID-19 risk as well as the need to include other types of risks is noted and are reflected in the CR and CAR below. **CR8:** Under potential issues column in Table 14, COVID-19 is indicated as a risk, which is likely not the case any longer. Please clarify or delete. **CAR9**: Include other risks (e.g.: environmental, social, etc.) levels and how they will be managed.	**CR8:** Cleared. See Part III.B, pp. 55-56 **CAR9:** Cleared. See above.	DONE – no further action required
	3. Are there measures in place for the management of for environmental and social risks, in line with the Environmental and Social Policy and Gender Policy of the Fund?	**Yes.** See related discussion in Part IIIC "Measures for Environmental and Social Risk Management" (pp. 53-54) and Annex 6 "Environmental and Social Risk Screening, Impact Assessment and Environmental and Social		DONE – no further action required

		Management Plan“ for further details. However, further information is needed on the issues noted below. **CAR10:** Include budget provisions for the implementation of the ESMP mitigation measures (Annex 6, pp. 112-125) or indicate whether such provisions are embedded under other budget table items (e.g.: M&E budget, Execution Costs, Implementation Fee). Same applies for the ESMP implementation IE supervision arrangements.	**CAR10: Cleared.** Budget provisions are provided under execution cost/ implementation fees table, pp 69-70.	
	4. Is a budget on the Implementing Entity Management Fee use included?	Yes. See Table 22, p. 67, on the Implementing Entity Management Fee use. However, the largest portion of the Monitoring and evaluation (ESP and GP) and travel item fees needs further breakdown. CR9: In Table 22, please provide further breakdown of the Monitoring and evaluation (ESP and GP)	**CR9: Cleared.** See pp. 69-70	DONE – no further action required

		and travel item. Breakdown may cover activities fees related to engagement with donor (Policy support, Portfolio management, Reporting, Outreach, knowledge sharing), Project cycle management fees (project preparation, oversight, financial management & quality insurance, implementation reports supervision, completion and evaluation oversight). CR10: Table 23 numbering is repeated twice. Please double check/ revise table numbering/ starting after Table 22.	**CR10: Cleared.**	
	5. Is an explanation and a breakdown of the execution costs included?	**Yes.** See Part III H, Table 23, p. 68.	**-**	DONE – no further action required
	6. Is a detailed budget including budget notes included?	**Yes.** See Part III G "Detailed Budget" Tables 19-25. pp. 65-69.	**-**	DONE – no further action required
	7. Are arrangements for monitoring and evaluation clearly defined, including budgeted M&E plans	**Yes.** See Part IIID, pp. 54-57 for related discussions.	**-**	DONE – no further action required

	and sex-disaggregated data, targets and indicators, in compliance with the Gender Policy of the Fund?			
	8. Does the M&E Framework include a break-down of how implementing entity IE fees will be utilized in the supervision of the M&E function?	**Yes.** See Table 15 (p. 55) for related information.	**-**	DONE – no further action required
	9. Does the project/programme's results framework align with the AF's results framework? Does it include at least one core outcome indicator from the Fund's results framework?	**Yes.** See Part III E "Results Framework" (pp. 58-62) and art III F "Programme Alignment with AF Results Framework" (pp. 63-64) for related details.	**-**	DONE – no further action required
	10. Is a disbursement schedule with time-bound milestones included?	**Yes.** See Part III H, p. 79, Tables 26 and 27. **CR11:** For more clarity, consider combining Tables 26 and 27 in one table.	**CR11. Cleared**. See table, page 72.	DONE – no further action required

ADAPTATION FUND

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

Building Climate Resilient Cities and Communities in the Republic of Azerbaijan

Figure 1: Urbanization at the Southern and Western shores of the Caspian Sea (source: NASA)

Implementing Entity:	United Nations Human Settlements Programme (UN-Habitat)
Re-Submission:	29 July 2024

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List of Acronyms

ADB	Asian Development Bank
AF	Adaptation Fund
CASPCOM	Coordinating Committee on Hydrometeorology of the Caspian Sea
CSL	Caspian Sea Level
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women (1979)
CEIC	Caspian Environment Information Centre
CEP	Caspian Environmental Programme
COP29	UN Climate Change Conference in Baku, November 2024
DoC	Domain of Change
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESP	Environmental and Social Policy
ESSS	UN-Habitat's Environmental and Social Safeguards System
EWS	Early Warning System
IEA	International Energy Agency
INSTC	International North-South Transport Corridor
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
GCF	Green Climate Fund
GEF	Global Environment Facility
GP	Gender Policy
ICZM	Integrated Coastal Zone Management
IUCN	International Union for Conservation of Nature
LO	Learning Objective
LOE	Letter of Endorsement
M&E	Monitoring and Evaluation
MSP	Maritime Spatial Planning
NAP	National Adaptation Plan/ Planning
NBS	Nature Based Solution
NCAP	National Convention Action Plan
NGO	Non-Governmental Organization
NUP	National Urban Policy
OJSC	Open Joint Stock Company
PAC	Programme Activities Cost
PAC	Programme Advisory Committee
PAP/PAC	Priority Actions Programme Regional Activity Centre
PEC	Programme Execution Cost
PMU	Programme Management Unit
RCO	Resident Coordinator Office
SCUPA	State Committee on Urban Planning and Architecture
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
TAC	Technical Advisory Committee
UHI	Urban Heat Island
UN	United Nations
UN-Habitat	United Nations Human Settlements Programme
UNDP	United Nations Development Programme
UNCT	United Nations Country Team
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank

PART I: PROGRAMME INFORMATION

Title of Programme:	Building Climate Resilient Cities and Communities in Azerbaijan
Country:	Republic of Azerbaijan
Thematic Focal Area:	Urban Development, Coastal Zone Management, Disaster Risk Reduction and Early Warning Systems, Water Management
Type of Implementing Entity:	Multilateral Implementing Entity
Implementing Entity:	United Nations Human Settlements Programme (UN-Habitat)
Executing Entities:	United Nations Human Settlements Programme (UN-Habitat); United Nations Environment Programme (UNEP); and International Organization for Migration (IOM)
Amount of Financing Requested:	USD 10.000.000
Letter of Endorsement (LOE) signed:	Yes ☒ No ☐

Stage of Submission:

☒ This proposal has been submitted before including at a different stage

This proposal has been submitted earlier as part of a regional programme at concept and fully-developed proposal on Urbanization and Climate Change Adaptation in the Caspian Sea Region (https://www.adaptation-fund.org/project/azerbaijan-and-iran-urbanisation-and-climate-change-adaptation-in-the-caspian-sea-region/). On 8 November 2023 (Ref: 2023/205), the Implementing Entity (UN-Habitat) was informed that the fully developed regional programme was rejected by the Project and Programme Review Committee (PPRC) of the Adaptation Fund Board (Board Decision B.41/11). Based on this decision, a single country submission has been encouraged. The fully developed proposal for single country was submitted on 20 March 2024.

☐ This is the first submission ever of the proposal at any stage.

In case of a resubmission, please indicate the last submission date:

1. Programme Background and Context

1.1. Programme Summary

The main objective of the programme is to enhance climate change adaptation and resilience of local communities in Azerbaijan while fostering the necessary capacities and knowledge in the country and throughout the Caspian Sea region. The project is structured around the three components:

Component 1: **Technical and institutional capacity at national and local level for long-term planning, responding and financing climate action.**

Component 2: **Implementation and maintenance of climate adaptation initiatives.**

Component 3: **Climate change adaptation solutions upscaled to communities throughout Azerbaijan.**

1.2. Context and Problem Analysis

1.2.1. Introduction Caspian Sea Region

Figure 2: Caspian Basin
(source: www.gride.no/resources/5732)

The Caspian Sea is the world's largest inland water body confined by five countries: Azerbaijan, Iran, Kazakhstan, the Russian Federation and Turkmenistan. It is climatically diverse, encompassing the Volga and Ural River basins in the North, semi-arid and hot arid plains in the east, and humid Caucasus and Elburz mountains in the south-west. The endorheic Caspian Sea spreads around 1,200 km from north to south with an average width of 320 km and covers a region of 390,000 km² with two deep basins occupying its central and southern areas, leading to horizontal differences in temperature, salinity, and ecology. The Caspian Sea is approx. 27 m below sea level.

The primary rivers that discharge into the northern Caspian Sea include the Volga, Ural, and Terek. Together, their combined annual flow constitutes approximately 88 percent of the total river water entering the Caspian Sea. On the western shore of the middle and southern Caspian Sea, additional contributors include the Sulak, Samur, Kura, and several smaller rivers, contributing around 7 percent of the overall flow into the Caspian Sea. The remaining inflow originates from rivers along the southern, Iranian shore. Except for the Atrak (Atrek) River in southern Turkmenistan, the arid eastern shore of the sea is characterized by a complete absence of permanent streams, with the only outflow occurring into the Kara-Bogaz-Gol Bay to the east.

The water body plays a crucial role in atmospheric processes, regional water balance, and microclimates associated with fluctuations in atmospheric air pressure from the northern Atlantic, influencing temperatures, moisture, and winter storms across Europe, including the Volga basin, and impacting rainfall over the Caspian basin. Recent surveys indicate that anthropogenic influences are detrimentally affecting the region's biological diversity, leading to the endangerment of certain species of vegetation and fauna, prompting their classification as strictly protected (Goodman and Dmitrieva, 2016). In recent times, communities along the shores of the Caspian Sea have increasingly experienced severe climate change hazards, such as variations in sea levels, heightened temperatures, intensified floods, and acute droughts. Simultaneously, the concentration of urbanization along the shores of the Caspian Sea, particularly in Azerbaijan, has accelerated. This trend aligns with plans for substantial infrastructure investments

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related to the International North-South Transport Corridor (INSTC), endorsed by Russia as an alternative transportation route bypassing the Suez Canal. These developments contribute to the escalating challenges of land conversion, biodiversity loss, heightened water consumption needs, increased sewage and waste production, and overall water stress in the region. The amalgamation of climate change and rapid urbanization has also led to the urban heat island (UHI) effect in several larger cities and towns.

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As a response to these issues, in 2018, the Government of Azerbaijan sought the support of UN-Habitat, in collaboration with the UN Development System, to address the combined impacts of climate change, urbanization, and the distinctive environmental challenges faced by the Caspian Sea region. The focus is specifically on vulnerable communities most affected by climate change. The repercussions of climate change are evident across various sectors, affecting fisheries, agriculture, infrastructure, and the livelihoods of individuals employed in these sectors. Moreover, anticipated increases in shipping activities, tourism development, and major infrastructure projects along the Caucasian-Eurasian transportation route and the emergence of the "Middle Corridor"[1] are expected to exert additional pressure on the environment in the future. A notable concern, often overlooked, is the issue of marine litter in the Caspian Sea, for which reliable information on the volumes of debris discharged into the region's coastal or marine environment is currently unavailable.

Figure 3: Strategic position of Azerbaijan as a vital Caspian-Arabian Sea link; part of the International North-South Transport Corridor (INSTC) has repositioned the country as a strategic route between Russia and Asia. By bypassing the Suez Canal, the route is 40% shorter and 30% cheaper than traditional routes in terms of distance and time.

Existing climate change scenarios do not definitively predict whether sea levels will rise, fall, or continue historical fluctuations, but researchers agree that the current decreasing trend is expected to persist. Furthermore, the Caspian littoral states are experiencing a rise in greenhouse gas emissions, primarily attributed to increased activities in energy, industry, agriculture, and waste sectors. Notably, the energy-related sector, encompassing individual and commercial road transportation, is the leading source of emissions, constituting 73% in Azerbaijan (International Energy Agency - IEA, 2021).

The impact of climate change has compelled Azerbaijan to adapt to evolving conditions, often incurring substantial capital and operating costs. For instance, in 2011, Azerbaijan had to undertake a significant reconstruction effort following Kura River floods, involving the rebuilding of over 2,400 houses, infrastructure, schools, and public facilities.

[1] https://www.voanews.com/a/central-asian-trade-corridor-gains-interest-amid-regional-tensions-/7390284.html

Figure 4: Kura River flooding in 2010
(source: https://dergipark.org.tr/tr/download/article-file/735955)

Being a closed water body, considerable fluctuations of the Caspian Sea water level are an intrinsic property. While such fluctuations are the norm in this sea, global warming has altered its natural rhythm, resulting in dry, warm years for the 1996 – 2015 period, with 2006 – 2015 being especially unfavorable years. The water volume appears to have decreased due to the combined effect of droughts, increased agricultural consumption and construction of dams. The faster the change in sea level occurs, the more severe its consequences. In the Caspian Sea, increases in the water and air temperatures over the water are of great importance, causing evapotranspiration. Based on the suggestions made by the Intergovernmental Panel on Climate Change (IPCC), Roshan et al. (2012) there is a high probability that during this century, temperatures in the Caspian Sea basin will continue to increase. The average air temperature increases for the last 50-year and 10-year periods show a slight decrease and are negative for the 2012 – 2016 five-year period, indicating that the warming of the Caspian Sea climate has slowed in recent years (Coordinating Committee on Hydrometeorology of the Caspian Sea – CASPCOM, 2018).

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1.2.2. Republic of Azerbaijan

- *General*: Covering an expanse of 86,600 km^2, Azerbaijan is home to around 10 million people. The geographical makeup of Azerbaijan comprises four mountainous regions, with the fifth characterized by lowlands, including the coastline along the Caspian Sea, positioned approximately 28 meters below sea level.
- *Climate:* Azerbaijan boasts a highly diverse climate, encompassing nine of the world's eleven climate zones across its various regions. Semi-arid zones dominate the central and eastern parts, including the capital, Baku, while temperate zones prevail in the north, continental zones in the west, and tundra zones introduce marked variations in average annual temperature and precipitation. Generally, the mountainous regions experience higher precipitation and lower average temperatures compared to the central lowlands and the Caspian Sea coast, where the climate is drier and hotter. The south-western towns of Julfa and Ordubad hold the record for the highest recorded temperature at +46°C, while temperatures near the mountains can plummet to -32°C. Humidity levels vary across the country, with annual precipitation falling below 400 mm in 65% of the country. In all the plains, snow does not remain long and has not been observed in many years. The south slopes of the Great Caucasus receive the most snowfall, and the highest peaks are perpetually covered in snow. Average wind speeds typically range 0.5m/s, however, in the offshore areas of the Absheron peninsula it is 6-8 m/s.
- *Flora and fauna:* The country's rich flora encompasses 5,000 plant types across 176 families and 1,114 species. In Azerbaijan, the flora is much richer relative to other locations of the South Caucasus, with 66% of species found in the entire Caucasus region. The diverse fauna of Azerbaijan includes 100 mammal species, 360 bird species, 61 reptile species, ten amphibian species, 100 fish species, and over 15,000 insect species.
- *Economy:* Sharing land borders with five countries, Azerbaijan borders Iran and the Russian Federation, both Caspian Sea littoral countries, along with Georgia, Armenia, and Türkiye. The primary driver of the country's economy is the extraction of oil and gas from the Caspian Sea offshore. Vital contributors to the national budget include the Baku-Tbilisi-Jeyhan oil pipeline and the Trans-Anatolian Natural Gas Pipeline (TANAP). Since 2015, the government has spearheaded

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reforms and undertaken vigorous efforts to diversify the economy by fostering competitive non-oil sectors such as agriculture, tourism, and services. The government's 10-year development strategy, "Azerbaijan 2030: National Priorities for Socio-Economic Development," outlines goals to establish a sustainable and competitive economy, ensure social inclusiveness, enhance human capital, transition to "green growth," and improve infrastructure.

- *Urbanization*: According to studies conducted by the World Bank, urbanization in Azerbaijan remained relatively stable for approximately 40 years, from 1960 to 1990, hovering around 52-53%. However, following the dissolution of the former Soviet Union and the country gaining independence, there has been a notable increase in the urban population over the past 25 years. This rise is attributed to migration, particularly from rural to urban areas, as households seek improved job opportunities and services, along with displacement from regions affected by conflict. As a result, the current urban population has surpassed 56%, encompassing cities, towns, and suburban areas. Situated on the Caspian Sea coast, Baku, is largest city and capital of Azerbaijan. Poverty in Azerbaijan has dropped sharply in the last 2 decades. Based on the Asian Development Bank (ADB)[2] (against 17,5% of the population in Georgia and 26.5% in neighbouring Armenia), and only 6% of the total labour force is unemployed (against 11.7% in Georgia and 10% in neighbouring Armenia[3].

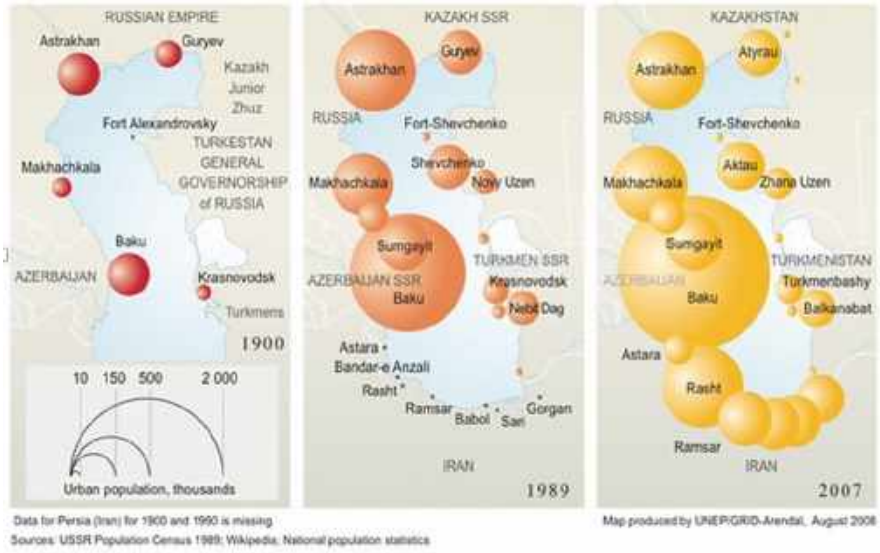

Figure 5: Visualization of Urbanization along the Caspian Sea Shores between 1900 and 2007

1.2.3. Regional Environmental Agreements

Convinced of the need to address the rapidly emerging challenges to the health of the Caspian Sea, the five riparian states in 1995 agreed to develop the Caspian Environment Programme (CEP) aiming to halt the deterioration of the environmental conditions of the Caspian Sea and promote sustainable development in the area. In a joint venture with UNEP, United Nations Development Programme (UNDP) and the World Bank, and with financial support from the Global Environmental Facility (GEF), the programme was launched in 1998. After extensive negotiations the programme became part of the *Framework Convention for the Protection of the Marine Environment of the Caspian Sea*, a legal instrument adopted by the countries in Tehran, 4 November 2003 and entered into force on 12 August 2006. In times of rapid increase of natural resources use in the Caspian Sea, the so-called “Tehran Convention” was the first legally binding agreement between the Caspian countries and provides an

[2] ADB (2021). Poverty Data: Azerbaijan [https://www.adb.org/countries/azerbaijan/poverty]
[3] ADB (2021). Poverty Data: Georgia [https://www.adb.org/countries/georgia/poverty]

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important framework for cooperation on environmental policies in the region. The Convention is serviced by an interim Secretariat which is hosted by the UN Environment Europe Office. It serves as an overarching governance framework which lays down the general requirements and the institutional mechanism for environmental protection and sustainable development in the Caspian Sea region. Under its umbrella, the Caspian littoral states developed additional protocols on priority areas of common concern:

- Protocol Concerning Regional Preparedness, Response and Co-operation in Combating Oil Pollution Incidents (Aktau Protocol);
- Protocol for the Protection of the Caspian Sea against Pollution from Land-based Sources and Activities (Moscow Protocol); and
- Protocol for the Conservation of Biological Diversity (Ashgabat Protocol);
- Protocol on Environmental Impact Assessment in a Transboundary Context (EIA Protocol).
- A fifth Protocol on monitoring, assessment and information exchange is under negotiation; its provisions will commit the riparian states to secure regular updating of the web-based Caspian Environment Information Center (CEIC), State of the Environment reporting, and public access to information.

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1.2.4. National Parks

Situated in the Caucasus region between the Black and Caspian Seas, Azerbaijan boasts abundant biodiversity, with the broadest range among European states and significant natural resources. Specially protected ecosystems play a vital role in preserving this biodiversity by providing habitats for rare and endangered plant and animal species. Azerbaijan is home to a total of 9 national parks, along with 13 state natural parks and 21 state reserves.

There are three National Parks in Azerbaijan with marine coastal ecosystems located in target regions: *Gizilaghaj National Park*, designated as Wetland of International Importance (Ramsar Sites), is home to millions of migratory birds; *Absheron National Park* aims to protect the Caspian seals; and *Shirvan National Park* is home to gazelles in the region.

Apart from the National Parks situated along the coastal areas, *Hirkan National Park* is located close to the coast on the southern borders of Azerbaijan. It is worth mentioning that the Hirkan National Park, famous in the South Caucasus for its unique natural forests rich in relict and endemic species, has been jointly nominated by Azerbaijan and Iran for inclusion in the "UNESCO World Natural Heritage List" (UNESCO – United Nations Educational, Scientific and Cultural Organization).

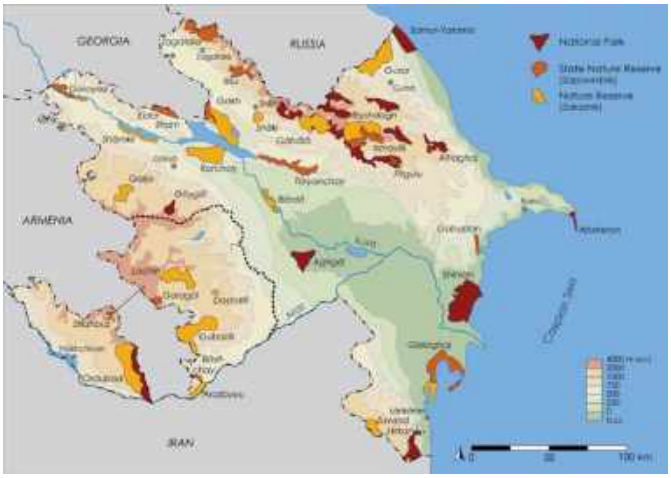

Figure 6: Protected Areas in Azerbaijan
(source: https://www.researchgate.net/figure/Protected-areas-of-Azerbaijan-Source-Adopted-and-updated-from-Schmidt-Uppenbrink_fig4_337328047)

1.2.5. Main Climate Change Hazards

As per the Fifth Assessment Report by the IPCC, the countries of North and Central Asia bordering the Caspian Sea are experiencing warming trends, particularly in the central regions during summer, accompanied by reduced precipitation. The warming in these areas surpasses the global average, and models predict an increased likelihood of extreme precipitation. However, accurate modelling is challenging due to data limitations and difficulties in accounting for mountainous landscapes' influence on climatic parameters. It is anticipated that thermal waves' duration, intensity, and frequency will rise, contributing to continued temperature increases in the Caspian Sea region throughout the century (IPCC, 2013).

Recognizing the importance of climate change adaptation in urban areas, cities must adjust to current or anticipated climate hazards to mitigate negative impacts and capitalize on potential opportunities. Building resilience and reducing vulnerabilities, particularly among the most susceptible populations and fragile ecosystems, are crucial for effective adaptation aligned with national and local priorities.

Urgent action is essential for cities to prevent or minimize weather-related fatalities and economic losses resulting from climate-related extremes. While national governments play a role, local authorities are best positioned to address climate adaptation, especially in areas housing low-income and vulnerable populations. Localized adaptation efforts not only make economic and social sense but also enhance the attractiveness of cities to investments and skilled workforce by providing safe environments and amenities like public green spaces. Within the framework of this single country initiative for Azerbaijan, various climate-related hazards associated with climate change and urbanization processes have been assessed. Key interventions will be implemented in selected locations to address these issues, contributing to an evidence base for subsequent actions at the national and local levels.

- *Sea level fluctuations*

The Caspian Sea functions as a complex system influenced by geological, hydroclimatic, anthropogenic, and spatial factors (Ministry of Ecology and Natural Resources, 2010). Being an endorheic water body, it experiences inherent fluctuations in water level. Over the past century, the Caspian Sea Level (CSL) has undergone variations exceeding 3 meters, significantly impacting the lives of coastal communities, agricultural practices, fisheries, economies, and the shared ecosystem of countries surrounding the Caspian Sea (Azerbaijan, Iran, Kazakhstan, Turkmenistan, and Russian Federation).

In the 20th century, the most rapid sea level decline occurred between 1931 and 1940, amounting to 1.7 meters. From 1978 to 1995, sea level rose most rapidly, reaching about 2.5 meters. Since 1996, sea levels have been decreasing, with a notable drop of almost one meter between 2006 and 2015. In 2016–2017, sea levels stabilized (Interim Secretariat of the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Tehran Convention) – TCIS, 2020). Increased temperature-induced evaporation and combined changes in precipitation and river discharge contributed to seawater decline. The future CSL is directly influenced by changes in its water budget (precipitation minus evaporation over the catchment), linked to the anticipated impacts of anthropogenic global warming and water withdrawal from river sources. Unfortunately, data on these factors is lacking from all five Caspian Sea littoral countries, making future CSL predictions challenging. However, indications of population growth and increased water consumption suggest heightened water withdrawal from source rivers, such as the Kura River. Additionally, escalating evaporation over the lake surface, driven

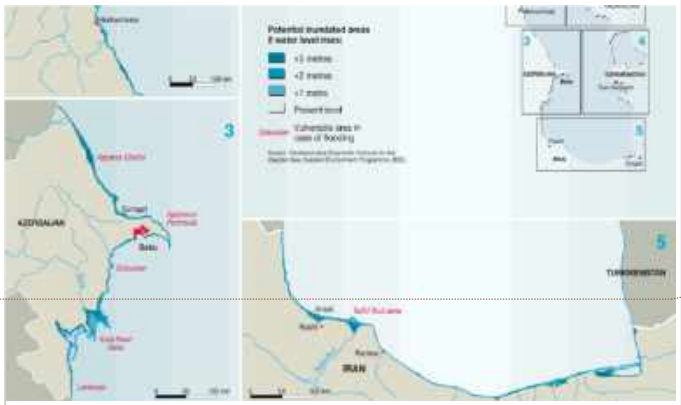

Figure 7: Potential Inundation Areas in Azerbaijan, considering Scenarios of 1-, 2-, and 5-Meters Sea Level Rise

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by warming, is likely to result in a gradual decline in the Caspian Sea's water level. Such a CSL decrease would significantly impact the Caspian environment, especially over the northern Caspian shelf, currently with a depth of about 5 meters (Nadini-Weiss et al., 2019). While the prevailing projections indicate fluctuations and a decrease in sea level, there exists the possibility of brief periods of sea level rise.

- *Salinity*

Increased salinity from sea level fluctuation and increased evaporation also poses a threat to biodiversity, leading to soil degradation, machinery corrosion, public health risks and subsequent loss of livelihoods along several hundred kilometres around the former coastline.

Over 90% of irrigation and collector-drainage schemes consist of open-type earth channels, water losses are high, mineralized phreatic water rises to the cultivation layer and surrounding areas become salinized. Moreover, the most common irrigation in farming is traditional surface irrigation. Utilization of modern water-saving techniques such as drip irrigation or sprinkler irrigation is limited. It is worth noting that some of the lands that are suitable for irrigated agriculture have been exposed to salination.

ion. Around 17 percent of irrigated lands are slightly saline, 8.4 percent moderately saline, and 3.3 percent highly saline (Azerbaijan Melioration and Water Economy Open Joint-Stock Company (OJSC) as of January 1, 2016). Currently, 495,166 hectares of irrigated land in the country or 5.9% of the territory of the country require ameliorative measures. The saline soils are located mainly on the coastal plain of the Caspian Sea, in the Kura-Araz depression and at the Salyan, Mugan, and Mil plains.

Figure 8: Changing Sea Levels in Caspian Sea

- *Increased temperature (heat)*

In the Caspian Sea region, there has been an escalation in both air and Caspian Sea water temperatures. The rise in water temperature is particularly noteworthy, leading to a reduction in the winter ice cover in the Northern Caspian Sea, disruption of vertical water circulation in the deep sea, heightened evaporation, and increased activation of chemical and biological processes (TCIS, 2020). During the last quarter of the twentieth century, the air temperature over the Caspian Sea water increased by 0.7–0.8°C, and the surface water layer saw an increment of 0.4–0.5°C (CASPCOM, 2018). Over the past century, the average yearly temperature in Azerbaijan has risen by 0.4-1.3°C. Projections for Azerbaijan suggest potential increases in average annual temperatures of 2.4°C by 2050 and 4.5°C by 2090 (under the high emission scenario RCP8.5) (climateknowledgeportal.worldbank.org, s.d.). Elevated temperatures, especially in regions already experiencing high temperatures above 40°C, pose a significant threat to human and animal health, with the urban heat island effect exacerbating the impact in urban areas.

- *Floods*

Extreme weather patterns have become increasingly prevalent in the Caspian Sea region, primarily attributed to climate change. Alterations in precipitation patterns are evident not only in the increase or decrease in their volume but also in the heightened frequency of intense precipitation events, often accompanied by hazardous phenomena such as hail, floods, mudflows, etc. In Azerbaijan, it is estimated that average annual flood damages in the region's infrastructure alone will range from 18 to 25 million USD (adaptationundp.org, 2015). The probability of floods is on the rise (USAID.gov, 2018). Flash floods pose a substantial threat to the population, particularly in the basins and mouths of transboundary rivers like the Kura and Aras in Azerbaijan.

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In 2003, economic losses triggered by floods at the Kura River mouth (location of the town of Neftchala) in Azerbaijan amounted to 65 million USD (Imanov et al., 2009). In 2010, over 70,000 people were affected by a flood near the confluence of the Kura and Araz rivers, resulting in the destruction of tens of thousands of homes. The magnitude of losses caused by flash floods in the Caspian Sea region is attributed to climate change-induced increased rainfall intensity, bare soil in catchment areas, movable materials, and steep slopes, along with inappropriate agriculture and development practices, and degradation of pasture and forest land (Sharifi et al., 2012). The risk of flooding due to storm surges and sea level fluctuations is present south of Baku. Moreover, in recent decades, the number and intensity of floods have risen in small mountain rivers. During the cold periods, cases of intense precipitation have become more frequent on the Absheron Peninsula, especially in Baku, resulting in significant damage to urban infrastructure, and landslide processes have intensified.

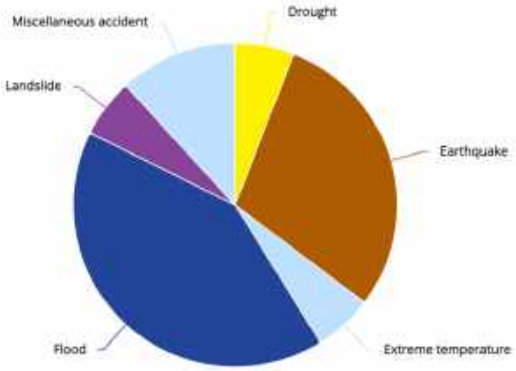

Figure 9: Average Annual Natural Hazard Occurrence for 1980 - 2020, Azerbaijan

Source: World Bank, Climate Change Knowledge Portal (https://climateknowledgeportal.worldbank.org/country/azerbaijan/vulnerability)

- *Drought*

Amidst a substantial rise in air temperature across significant parts of Azerbaijan, particularly in lowlands, there is a marked reduction in precipitation leading to drought, posing severe challenges in agriculture, ecology, water supply, and more. The likelihood of severe droughts in Azerbaijan is projected to increase significantly (World Bank Group and Asian Development Bank, 2021). Precipitation levels decreased across the entire territory of Azerbaijan from 1991 to 2010 (Ministry of Ecology and Natural Resources, 2010), and projections from various scenarios of the General Circulation Model (GCM) anticipate an increase in the monthly average temperature of up to 1.58°C. Azerbaijan has recently emerged from a prolonged drought, impacting agriculture, with irreversible damage to crops in some regions and adverse effects on the livestock sector due to inadequate vegetation of summer pastures. Simultaneously, climate change-induced droughts are expected to reduce water supply by 23% over the next three decades in Azerbaijan. The rising temperature is also anticipated to result in water losses through evaporation, causing water shortages for the agricultural sector, which, in turn, is expected to increase the demand for irrigation water by 10-15% (ibid.). In rural areas, droughts disproportionately impact women, leading to an escalation in their daily domestic responsibilities as they devote additional time to tasks such as water collection and food procurement.

1.2.6. Non-climatic Drivers and Pressures that affect Environment and Impacts People

Urbanization, economic activities, and tourism along the Caspian Sea coastlines have surged in recent years, exerting growing pressure on the terrestrial, freshwater, and marine environments in the region. This escalating pressure exacerbates climate change hazards, with three primary environmental stressors: (1) Land use conversion and ecosystem degradation; (2) Pollution of land, water, and air; and (3) Water stress.

The vulnerability of the built environment, coupled with inadequate or substandard housing and infrastructure, further compounds these challenges. Population distribution along the Caspian Sea shorelines is uneven, concentrated mostly in major urban centres of Azerbaijan, the Russian Federation, and Iran. Baku, the metropolitan area in Azerbaijan, stands as the largest and relatively dense urban agglomeration. Since 2001, rural migrants have increasingly moved to Baku for job

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opportunities, settling in suburban areas, contributing to the spatial expansion of the metropolitan area (Allahveranov et al, 2012). The scale of rural to urban migration is difficult to estimate since most migrants do not deregister when leaving their settlement of origin, which skews statistics based on official registration. Despite variations among countries, peri-urban expansions impact land use, pollution, and the quality of life for urban residents.

- *Land Use Conversion and Ecosystem Degradation*

Land use changes in the region have resulted in the loss or degradation of cropland, forests and pastures and the reduction of biodiversity. Urban sprawl has driven much of this land use change as well as desertification. The loss of agricultural land affects food security as well as the livelihoods of people working in the agriculture sector.

In Azerbaijan, soil salinization is one of the biggest ecological and geographical challenges. In addition, according to the local experts, most of the pasturelands in the country are now considered degraded. Soil organic carbon (SOC) has declined over time with the intensification of grazing in pastures and the overall degradation of soils, as reported in Babaev et al (2006) and Rasouli-Sadaghiani and Sheikhlou (2016). Azerbaijan does not have a soil information system that allows the monitoring of soil health. Monitoring the status of soils is fundamental for achieving land degradation neutrality and ensuring the provision of other ecosystem services provided by soils (Ismayilov, 2013). Overloading of pastures and grasslands with animals resulted in degradation of land under pastures (this data is not based on official inventory data: there was no inventory done since 1950). As a result of degradation, the grass cover thinned out significantly, dry grass productivity of winter pastures fell to 0.3-0.4 tons/ha, and severe erosion processes continue being observed. Local experts predict that 60 percent of winter pastures and 70 percent of summer pastures may become unfit for use in future. At present, there is no dedicated policy document or programme on sustainable pasture management in Azerbaijan. The integrated and cross-sectoral process for land and water management is lacking. In addition, local and national capacity for land degradation assessment and monitoring of salinization and desertification processes to provide accurate and efficient information to farmers and others is missing. Marine ecosystems face degradation primarily due to overfishing. In the Caspian Sea, all five major sturgeon species are currently classified as "critically endangered" by the International Union for Conservation of Nature (IUCN) in its Red List of Threatened Species. Overfishing, environmental degradation, and the invasion of species such as exotic comb jellyfish, which has impacted fisheries in the area, are all contributing to the reduction in fishing stocks. Additionally, increased water temperature is affecting the biophysical health of the Caspian Sea marine ecosystem.

Figure 10: Desertification Hotspots in the Caspian Sea Coastal Zone Region

The configuration of land in the region is undergoing changes, driven by both natural processes and those accelerated by existing land uses. Along the Azerbaijani coastline, erosion and accumulation processes have led to alterations. A recent study revealed that between 2016 and 2021, 8,052 hectares of land were gained through accumulation, while 71.47 hectares were lost due to erosion. On Kurdili Island, the land area increased by 623.66 hectares, and 220 hectares decreased. These findings indicate a shift in the coastline during 2016-2021, with an average movement of 230 meters toward the sea and 23.14 meters toward the land.

- *Pollution of Land, Water and Air*

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There are various sources of pollutants to the Caspian Sea, including river run-off, precipitation, sewage, discharge from ships and oil and gas facilities, and gas and liquid releases from the seabed. Mining, Manufacturing, and utilities (which includes oil and gas) is one of the leading sectors across the Caspian Sea littoral states as shown on Figure 12, and contributes to pollution of land, water, and air in the region.

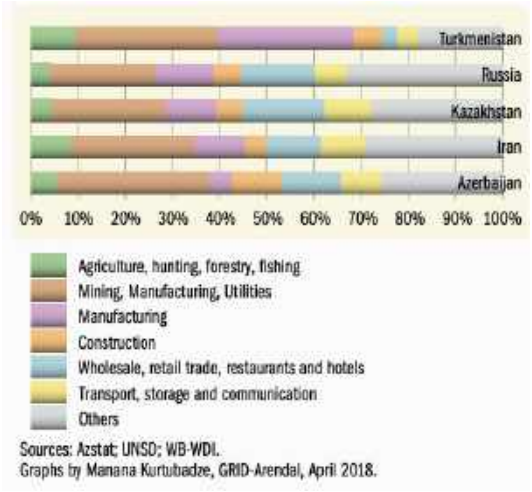

Figure 11: GDP of the Caspian littoral states in 2006 - 2016
(source: Teheran Convention (2019), Caspian Sea – State of Environment)

River run-off predominantly affects the Northern Caspian Sea as this is where the Volga flows into the Caspian Sea and the figure below shows a concentration of copper in this area. Higher rainfall amounts and large urban and industrial conglomerations result in high concentrations of pollutants on the southern coasts of the Caspian Sea. The maps below show the issues of arsenic, mercury and copper concentration that affect the sea and coastline. Wastewater discharge is mainly concentrated on the western and southern coasts, where there are large urban settlements and well-developed industrial and agricultural sectors. River run-off, untreated sewage, industrial waste and atmospheric transport are land-based sources of Caspian Sea pollution.

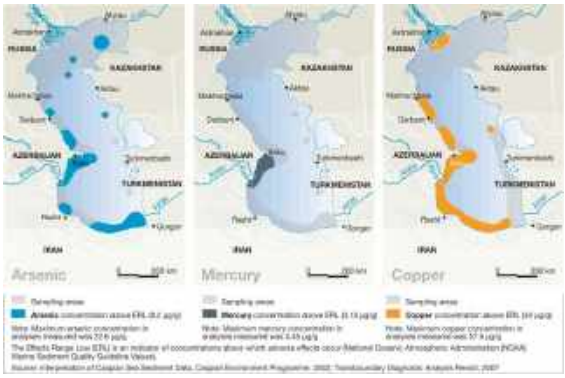

Figure 12: Issues of Arsenic, Mercury and Copper Concentration that affect Caspian Sea and Coastline

In Azerbaijan, the extent of industrially contaminated soils is estimated at 33,300 hectares, comprising 11,143 hectares contaminated with petrochemical products, around 11,000 hectares under mining products, and 5,000 hectares under construction waste (Krasilnikov et al., 2018). The primary source of pollution in the Caspian Sea from the territory of Iran, which includes wastewater from Armenia and

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Georgia into the Kura River, is the discharge of polluted domestic and industrial wastewater (TCIS, 2020). Pollution of the Caspian Sea from land-based sources in Azerbaijan is mainly attributed to the dumping of solid waste, discharge of unfiltered sewage, polluted wastewater in front of urbanized areas, and industrial fertilizers in front of rivers draining agricultural areas. The Kura River, carrying traces of pollution from domestic and industrial wastewater of neighbouring countries as well as Azerbaijan, significantly contributes to this issue. To prevent untreated sewage discharge into the sea, Azerbaijan is investing in the modernization of major sewage treatment plants and the construction of state-of-the-art treatment facilities. Key sources of polluted water discharged into Baku Bay have been addressed, and modular treatment plants have been installed along the Caspian Sea shores and the Absheron Peninsula to prevent sea pollution from local sources not connected to the sewage system.

The generation and inadequate management of waste degrade seawater quality. Solid waste is commonly disposed of in landfill sites, limiting opportunities to process valuable secondary materials. The generation of industrial and municipal waste varies within the region based on overall economic development. Some Caspian littoral states have implemented urgent measures to address waste accumulation, such as constructing waste incineration plants to convert household waste into energy (as in Azerbaijan, where the Baku Solid Waste Incineration Plant with fourth generation (4G) technology was commissioned in 2012 to provide electricity to 100,000 households).

Marine litter in the Caspian Sea is a significant concern and results from inadequate municipal waste management, coastal tourism, fishing, shipping, and improper disposal of hazardous waste. Fluctuations in sea level further exacerbate marine litter from land-based sources.

In addition to the above mentioned, air pollution has been highlighted by all Caspian littoral states with transport and industrial emissions being the main sources of air pollution, and with industrial areas and urban centers as the main concern in terms of air quality. In general, the air quality of large cities along the Caspian Sea's coast is critical. Like other regions, environmental pollution in the Caspian Sea is having a negative impact on both the littoral states, communities that depend on fishing and tourism and the human health of consumers.

- *Water stress*

Water scarcity and stress represent additional environmental pressures in the region. Unplanned urbanization and new constructions contribute to the strain on water resources, transforming land from permeable to impermeable surfaces, resulting in reduced water filtration. This leads to increased surface runoff and subsoil water scarcity. Agriculture also impacts water usage, affecting the hydrological regime of the Volga Delta through water consumption for irrigation, industrial, and municipal water supply. The growth in water consumption in the basin slowed down in the early 1990s with the deceleration of water-intensive sectors of the national economy (Gorelits et al., 2018). Moreover, Azerbaijan faces challenges with limited water resources, primarily relying on rivers for surface water, most of which originate in neighbouring countries. The availability of suitable groundwater is limited and unevenly distributed (Ministry of Ecology and Natural Resources, 2021). Approximately 70% of drinking water in Azerbaijan is sourced from the Kura-Araz basin (Red Cross Red Crescent Climate Centre, 2021).

- *Inadequate housing, infrastructure and service delivery*

In Azerbaijan, much of the public infrastructure in the region was established during the Soviet era, characterized by large and relatively inefficient irrigation and water distribution systems. Current infrastructure development mainly targets industrial infrastructure, service facilities supporting tourism, and transportation infrastructure (Ministry of Ecology and Natural Resources, 2021). The Baku port stands as a crucial regional infrastructure for economic development, while the Heydar Aliyev airport functions as a key hub for national and international carriers, ranking among the busiest in the Caucasus region. Additionally, numerous new communities have emerged, either as extensions of existing towns or as small villages evolving into new low-density towns, presenting challenges associated with unplanned urban sprawl. The construction of buildings in both urban and rural areas has shifted from traditional to concrete structures in recent years due to their better resilience in humid climates

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1.2.7. Current and Projected Impacts

- *Environment and Biodiversity*

Biodiversity in the Caspian Sea will also be severely affected, as the sea supports many of the unique and ancient species from the Mesozoic era, which live in the shallow areas and use the northern area as spawning grounds, including 90% of the world's sturgeons. Higher temperatures have also contributed to eutrophication, which cuts oxygen levels needed by other organisms. If the temperature increases by just 1.5 - 2.0 degrees Celsius, on average 20% of the animal and plant species will be endangered to become extinct across the Caspian Sea basin and its respective catchment area, and as cited above, the potential for warming by 2100 is even higher levels of temperature increase.

The projected Caspian Sea level decline combined with the loss of the highly productive and seasonally ice-covered northern Caspian shelf will severely affect this unique ecosystem, which is already under immense stress due to pollution, over-exploitation, and the introduction of invasive species (Lattuada et al, 2019).

The seasonal ice cover that forms in the northern section is also prime breeding habitat for the endemic Caspian seal. The reduction in winter sea-ice area will affect pupping grounds for the endangered Caspian seal. The disappearance of the vast shelf further robs the Caspian Sea of shallow-water habitats that are major food sources (e.g., for fish, migrating birds, and the endemic seal), and provide spawning grounds for native and endemic fish species such as the endangered sturgeons (Wilson et al, 2016).

Impacts of climate change on the fisheries and aquaculture sector are another main issue of concern. The number of fish stocks during the period 1997-2018 has been decreasing, and environmental factors have increased although the trend of provincial ecological changes was not the same, and the studied factors have acted differently on marine reserves. There is also an increase in sedimentation and development of sediment cells, removal of merged and submerged aquatic plants, destruction of fish habitats, and migration cluttering of Anadromus and Catadromusspecies. (Rabbaniha, 2013.) This has an impact on both livelihoods and food security.

A combination of climate change impacts and degradation are affecting critical ecosystems such as wetlands. Sedimentation due to rainfall, drought, irregular irrigation and aquaculture, agricultural runoff, urban and industrial waste, overfishing and illegal hunting, soil erosion, algal bloom threatens the wetlands and lagoons. The wetlands are surrounded by seasonally flooded marshes which are mainly covered by reedbeds and floating-leaf plants and form vital habitat for waterbirds that migrate along the Afro-Eurasian and Central Asian flyways. Some 140,000 birds from 254 species have been recorded, among which the cormorants, terns, dalmatian pelican, gadwall and Eurasian teal constitute significant proportion of their regional population. The wetland was designated as a Ramsar site in 1975. A recent study showed that wetlands decreased in size due to various factors such as climate change and unsustainable use of natural resources in the region. Moreover, the conditions of the lagoon have significantly deteriorated as a result of sewage and industrial runoff. This site was placed on the Montreux Record in 1993 due to its degradation. Studies conducted by JICA have determined changes in the route, stopover and breeding sites of migratory birds in the Anzali Wetland, whereby immature Dalmatian Pelicans moved to the Ghizil-agaj State Reserve in Azerbaijan and some Purple Herons migrated to Hawizeh Wetland on the border between Iran and Iraq or to Izad Khast Dam Reservoir in Fars Province for wintering.

Sea level fluctuation impacts the hydrological regime of river systems and basins that flow into the sea, affecting ground waters level and mineralizing rates in a region already impacted by water stress (Gurbanov & Mammadli, 2018). In addition to sea level fluctuation, observed and projected increases in temperature and declines in annual precipitation result in pressure on water supply in an already water-stressed region (Adanalyan and Gevorgyan, 2011). Declining quality of drinking water is also a concern – studies have shown links between water-scarcity caused by climate change and declines in the potability of water as the result of higher concentrations of elements such as iron, zinc and manganese (Rue and McKnight, 2021).

- *Social and Economic Impacts*

In this region, communities and individuals settling in low lying areas and unplanned neighbourhoods along the coast and riverbeds are vulnerable to flooding. The amount of assets and populations that need to be protected in the future is increasing and so does the magnitude of losses when floods occur. The most affected are elderly persons and persons with disabilities, women in charge of households and children, and people employed seasonally or in affected sectors which includes many migrants. The coastlines of Azerbaijan, Iran and the Russian Federation are the most densely populated Caspian Sea shores. It is in these three countries where the impacts of climate change

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related hazards on urban and rural populations will be higher in absolute numbers. It is estimated that between 80 to 100 million people living in the Caspian Sea region will be potentially affected by hazards related to climate change. More than 4 million people in Azerbaijan (Ministry of Ecology and Natural Resources, 2010) live in coastal areas and would be affected directly or indirectly by sea level fluctuations, increased floods, acute droughts and desertification. In all three countries, sea level decrease will affect the livelihoods of coastal communities, which already experience a drastic decline in economic activities such as fisheries and sturgeon catch. Declining water levels will decrease trade access, the size of vessels that can sail in the sea, access to the Volga River navigation and access to main port infrastructure. The construction sector will also be affected, as the main infrastructure in place will be rendered obsolete, and new infrastructure will need to be progressively put in place. Increased occurrences of extreme weather events as well as droughts and floods will impact both urban and rural areas, including infrastructure and housing degradat0on, damage to coastal economic enterprises, and service provision as well as loss of livelihoods.

The agricultural production in Azerbaijan has been affected by those extreme weather events, a sector that represents 5.3% of the GDP and employs over 40% of the population (ibid.). With the expected temperature increase in the future, experts predict more frequent extreme weather events, which will put further strain on agricultural productivity including farm and off-farm based livelihoods in rural areas. Meanwhile, the major risk for food security in Azerbaijan is climate-sensitive production/ yields. Not only does this risk push many people into poverty, it also disproportionally affects those who are the most vulnerable including women and children. Increasing risk of droughts will threaten water and food security especially for people who live in cities due to extra pressure on the limited water resources.

Climate change impacts will also pose challenges to economic development linked to tourism and recreational activities, which are already being disrupted by precipitation and temperature variation that trigger phenomena such as the thermohaline circulation of colder water to the surface of the sea, reducing the aptitude of water for recreational activities. Research has shown that the marine environment of the southern basin is under serious threat due to the entry of pollutants (industrial and municipal sewage, marine and coastal litter and agricultural pesticides) as well as the effects of climate change and drought (Jamshidi & Jafari, 2021) which impacts on livelihoods of those dependent on fishing and aquaculture for livelihoods. If the Caspian Sea Level drops between 9-18 m, this can result in rapid and strong incision of major rivers flowing into the Caspian Sea (e.g. Volga, Ural, Kura) resulting in lowering of groundwater levels in the river basins directly affecting agriculture and water use in a region that is already experiencing severe water stress (Prange et al, 2020). Historically, the rapid decline of the Caspian Sea water level in 1930-1978 and 1995-2019 led to degradation of natural habitats, extinction of coastal wetlands and impacted economic activity in coastal areas (Khoshravan et al, 2019). The economic consequences of a 250 cm increase in the Caspian Sea water level during the period 1978-1995 are estimated at more than $ 17 billion (Kroonenberg et al, 2000). 2Shifting coastlines due to sea level fluctuation has a direct impact on infrastructure vital to the economy such as commercial ports, fishing docks, thermal power plants and coastal tourism facilities. The Caspian Sea coast is no exception to this rule and has undergone serious changes and extensive environmental challenges due to fluctuations in sea level. Increased frequency of extreme precipitation events will likely cause floods and soil erosion resulting in damage to urban infrastructure and water resources, as well as impacts on transportation and safety (Zarrin et al, 2022).

The projected sea level drops could cause harbours to become obsolete and in need of constant relocation, shipping lanes will need to be deepened and resorts will become landlocked if there is an ongoing drop in the Caspian Sea Level. (Prange et al, 2000)

The impact on human health is also a concern as climate change can directly impact health due to heat or extreme events or indirectly because of diseases spreading. Public health is further linked to the state of environment and environmental pollution which is a significant problem in the Caspian region (State of the Caspian Sea Environment Report, 2019).

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Figure 13: Relationship between Climate Hazards, Pressures and Impacts in Caspian Sea Region

1.3. Target Areas and Population

1.3.1. Defining Community Vulnerability to Climate Change

Climate change adaptation involves anticipating and addressing the negative impacts of climate change, aiming to prevent or mitigate potential damages. These adaptation measures not only serve to minimize harm but also offer additional benefits for economic and social development, environmental well-being, and climate change mitigation. To optimize human and financial resources, effective planning for climate change adaptation is essential, emphasizing early action and incorporating short-, medium-, and long-term interventions from the outset. Creating sustainable adaptation measures requires a comprehensive analysis of root causes and a thorough assessment of vulnerability to climate change.

The IPCC Fifth Assessment Report (AR5) Working Group II (2014) defines vulnerability as "*the propensity or* predisposition *to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt*." Moreover, O'Brien et al. (2007) defines contextual vulnerability (starting-point vulnerability) as *"a present inability to cope with external pressures or changes, such as changing climate conditions. Contextual vulnerability is a characteristic of social and ecological systems generated by multiple factors and processes*." Lastly, Kelly and Adger (2000) defines outcome vulnerability (end-point vulnerability) as "*vulnerability as the end point of a sequence of analyses beginning with projections of future emission trends, moving on to the development of climate scenarios, and concluding with biophysical impact studies and the identification of adaptive options. Any residual consequences that remain after adaptation has taken place define the levels of vulnerability*".

The assessment of underlying vulnerabilities conducted to support this proposal (provided with more detail in Annex II) included an analysis of issues related to exposure, sensitivity and adaptive capacity. Sensitivity focused on compounding factors that are non-climatic pressures which increase vulnerability and as a result climate risks. These include the issues identified above such as pollution, ecosystem degradation and biodiversity loss as well as inadequate housing, sanitation services and infrastructure. Adaptive capacity was assessed based on knowledge and capacity at the local level to address climate change as well as existing systems to address climate change.

1.3.2. Selection of most vulnerable Communities and Target Areas

The process of identifying the most susceptible communities and environmental "hot spots" to climate change along the Caspian Sea shore in Azerbaijan involved a comprehensive approach. This included a desk review of national development reports and maps, engaging in bilateral discussions with sectoral ministries and local governments in both countries, creating an evaluation matrix, and validating findings through national and local consultations, along with field visits. The latest field visit occurred in May 2023, confirming the local authorities' commitment to the project. In each country, four locations were pinpointed based on the target area's typology and a set of evaluation criteria and indicators. This allowed for a comprehensive assessment of vulnerability dimensions and scale for communities in these specific locations. The **evaluation matrix** considered criteria such as the type

and level of hazard, the number of affected beneficiaries, the necessity of proposed measures, alignment with government priorities, and comparability with other projects.

Figure 14: Women make up to 48% of agricultural Workers in Azerbaijan and therefore play a very important Role in the Process of Adaptation to Climate Change. *(Source: https://report.az/en/incident/women-make-up-48-of-agricultural-workers-in-azerbaijan/)*

With regard to the situation of **gender equality**, in Azerbaijan in general, some progress on women's rights has been achieved in recent years. However, many drivers still need to be enhanced to achieve gender equality. At present, women are underrepresented as entrepreneurs, with only 25% of registered businesses in the country being owned by women. Women entrepreneurs are mainly concentrated in agriculture and fishing, trade and other service activities economic areas. The most alarming points are the under-representation of women in decision making processes at all levels, the uneven distribution of unpaid care and domestic work, as well as the lack of information on many key factors, such as the gender pay gap.

1.3.3. Description of selected vulnerable Communities and Target Areas

The 2023 updated Nationally Determined Contribution (NDC)[4] envisages the current population dynamics of the country and claims that the population will reach about 10.8 million by 2023.

Table 1: Population in 2014 – 2030, at the Beginning of the Year

Population	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Million	9,5	9,6	9,7	9,8	9,8	10,0	10,0	10,0	10,1	10,1	10,3	110,4	10,5	10,6	10,6	10,7	10,8

Presently, 54.6% of the nation's population resides in urban areas, while 45.4% live in rural settings. As of January 2023, the population is nearly evenly split between males (49.8%) and females (50.2%). The escalation of global warming has led to a noticeable increase in the number and duration of extremely hot days and peak temperatures during summer months. In Baku, characterized by a semi-desert and dry steppe climate, the days with a maximum air temperature of 35 degrees Celsius and above surged from 86 days to 365 days between 1991 and 2020, compared to the period from 1960 to 1990. Despite the frequent winds for which Baku is renown, urban residents in the capital are particularly susceptible to heat, with the poorest who cannot afford air conditioning in their homes or their businesses or those working in open unshaded areas struggling to adapt during prolonged extreme summer heatwaves.

The impact of severe weather conditions on Azerbaijan's population in recent decades highlights specific vulnerable groups requiring urgent adaptation measures. These groups include children, adolescents, women, the elderly, individuals with disabilities, those with chronic diseases, and eco-migrants displaced or at risk of displacement due to climate change.

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[4] https://unfccc.int/sites/default/files/NDC/2023-10/Second%20NDC_Azerbaijan_ENG_Final%20%281%29.pdf

Table 2: Target Area – Location Typology

Target Area: Location Typology		Azerbaijan		
		Greater Baku Region	Neftchala	Astara
1	Target area represents a typical settlement in the respective region that is located along the shoreline	X	X	X
2	Target area represents a typical urban settlement in the respective region located along a river and/ or close to a river mouth that is prone to flooding and water salinity due to intrusion of sea water		X	
3	Target area represents a typical settlement in the respective region located in a low-lying area prone to both flooding and severe summer droughts	X	X	X
4	Target area represents a typical settlement in the respective region exposed to regular flood and/ or drought events	X	X	X
5	Target area represents a typical settlement in the respective district located to a relevant protected area, i.e. forest area		X	X
6	Target area represents a typical settlement in the respective region located in a larger metropolitan area	X		
7	Target area represents a typical settlement in the respective region facing rapid urbanization dynamics, including informal expansions	X		X
8	Target area represents a typical settlement in the respective region facing declining urbanization dynamics, including informal expansions		X	X
9	Target area represents a typical settlement in the respective region experiencing in-migration from rural areas, including unplanned urban expansions	X		

To establish comparability among interventions, the selection of the most socio-economically and/or environmentally vulnerable communities and target areas has been guided by the following typologies and criteria[5]; the identification of vulnerable communities and target areas focuses on specific settlements situated along the shoreline, reflecting their unique topological characteristics and environmental challenges. These regions are particularly susceptible to climate change impacts, such as rising sea levels, coastal erosion, and extreme weather events. Each target area serves as a representative example of the broader region's vulnerabilities, necessitating tailored interventions and sustainable development strategies. Comparing target areas and their respective vulnerable communities poses a substantial challenge due to the **lack of compatible data**. The data provided by the Statistical Committee is limited to national and district levels, necessitating the vulnerability analysis in this proposal to rely on the localization of national and district data. This localized data has been validated through site visits and stakeholder consultations conducted between 2019 and 2022.

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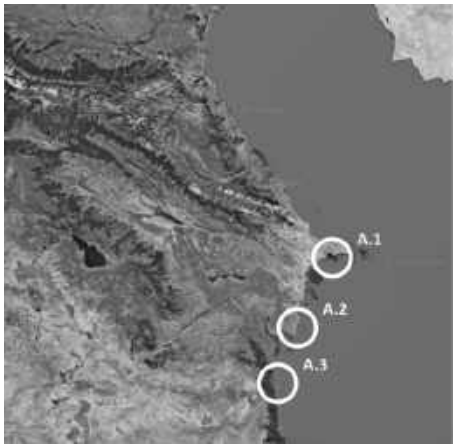
In Azerbaijan, communities and target areas along the Caspian Sea shores, outside the Greater Baku Region and the Absheron Peninsula, encounter similar challenges. These challenges, though common across the country, exhibit variations between communities located to the North or South of the metropolitan region. While issues such as poverty and access to income-generating opportunities persist nationwide, coastal areas face heightened levels of **multi-dimensional poverty and inequalities** due to diverse degrees of urbanization. The impact of extreme weather conditions, encompassing flash floods, drought events, severe water shortages, salinization of rivers, etc., underscores the urgency of climate adaptation across all governmental entities. Addressing climate change adaptation in an urbanizing country like Azerbaijan reveals a key shortfall in institutional capacities and coordination mechanisms, both horizontally across sectors and vertically across governance levels, especially with local governments. Legislative frameworks and sector strategies have yet to fully integrate the interconnected nature of climate change adaptation within the broader development context.

Presently, climate change-related coordination mechanisms at all governance levels remain weak, leading to significant delays in localizing and fulfilling global commitments. Particularly underserved and remote communities encounter issues of isolation, inequality, and exclusion, often missing out on wider development gains and representing the most vulnerable communities to external shocks induced by climate or environmental risks and hazards. Factors such as increased fertilizer use in response to climate change impacts like droughts are exacerbated by a lack of accessible agriculture

[5] Further descriptions on the selected target areas can be found in the respective section of *ANNEX2: Vulnerability Assessment Summary with Focus on localized Climate Change Impacts/ Hazards and Effects, underlying Vulnerabilities, Barriers to adapt and Resilience Building.*

specialists to guide appropriate practices. Based on comprehensive analysis and consultations, the project identifies the three target areas in Azerbaijan as the most vulnerable communities to be covered:



- Greater Baku Region - Target Area A.1;
- Neftchala - Target Area A.2; and
- Astara - Target Area A.3[6].

Figure 15: Map of identified Target Areas and Communities along the Caspian Sea Shore (not to scale)

- *Migrants in Target Communities*

Migrants play a crucial role within local communities in the Caspian Sea Region, particularly in the cities and towns along the Caspian Sea in Azerbaijan. These migrants exhibit diverse backgrounds, encompassing urban migrants relocating from other parts of the country and migrants arriving from different nations. Migration from rural areas and secondary cities as well as displacement from conflict-affected regions have led to areas of overcrowding in the capital and the growth of informal settlements. Their engagement and role in the community vary, with some moving to urban centers independently and others arriving with their families, influencing their integration into the community. Migrants susceptible to climate hazards often inhabit also recently developed peri-urban areas or rural settlements that closely resemble older urban regions due to extensive urbanization along the coastline. Although rent in peri-urban and rural zones is notably lower than in urban centers, these areas face various hazards, such as flooding, and lack access to essential infrastructure, including safe drinking water networks and sewage and waste management systems. Consequently, ground pollution and health concerns arise as significant issues. The limited availability of water for irrigation has led to land degradation, prompting migration from rural to urban areas.

Engaging in a variety of occupations, migrants often find employment in the informal sector. With the increasing competition in the labour market – particularly for low-skilled farmers and Internally Displaced People (IDPs) – many migrants work seasonally in informal roles, such as waste collectors and construction workers. The absence of a comprehensive social protection system, including insurance and access to free medical care, renders them vulnerable to the detrimental impacts of climate change.

- *Data and Information Challenges*

During the preparation of the comprehensive proposal, a pervasive challenge emerged – the unavailability of data on climate hazards, disaggregated population and economic statistics, and environmental and urbanization trends at the local level within the target communities. Even when data was collected at the national level, it was not always easily accessible to local authorities and, consequently, the project team. Consequently, the information presented in this section, subsequent sections, and the annexes represents a synthesis of national and district data, incorporating academic articles, national government data, insights gathered through field missions, discussions with local stakeholders, including local government authorities, and consultations with experts at both national and district levels with extensive experience in environmental and urban issues. Acknowledging the challenges faced in the project preparation phase played a pivotal role in shaping the outcomes and

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[6] During the proposal development, further assessments on climate change risks and vulnerabilities have been conducted (see Section 1.3.3), looking both at existing and projected climate hazards, considering the specific reasons for vulnerability in a given location.

components. This approach aimed to maximize the collection and dissemination of data and information at national, and local levels, ensuring that climate adaptation actions and planning are grounded in the most accurate information, thereby delivering tangible benefits to the target communities.

1.3.4. Adaptation Areas linked to identified Hazards and national and local Priorities

Through a site-specific **Risk and Vulnerability Assessment**, the single country initiative, along with its national and local project components, has delineated key concerns and goals for climate change adaptation. Taking into consideration the spatial dimensions associated with urbanization processes, the peripheries of cities and towns have been prioritized for site-specific climate change adaptation planning and the implementation of corresponding adaptation measures. *The* comprehensive Risk and Vulnerability Assessment encompassed the following components: (i) comprehending historical and current climate impacts; (ii) understanding climate resilience and anticipating future impacts; (iii) pinpointing vulnerable urban sectors in designated target areas; (iv) executing location-specific risk and vulnerability assessments, emphasizing the significance of surrounding areas and the urban hinterland; and (v) elucidating primary adaptation concerns and defining specific objectives.

Following UN-Habitat's *Guiding Principles for City Climate Action Planning* (UN Habitat, 2014), key urban interventions were refined and elaborated context specific for each target area and vulnerable community. Hereby, the basic principles for interventions guided the refinement of interventions.

All interventions include livelihood, infrastructure and biodiversity components as well as policy/strategy, legal and financial aspects in addition to capacity and skills development dimensions. Hereby, the local communities' capacity to adapt to climate change and overcome vulnerabilities is core.

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The Project Proposal has outlined adaptation to climate change in urban areas in more detail, while considering the identification, selection and implementation of adaptation intervention options. Suggested options were evaluated against their suitability to the local context, their effectiveness in reducing vulnerability or enhancing resilience and their wider impact on sustainability as well as potential for scaling up. Hence, it is important that further plans are developed and costed.

In Azerbaijan, the National Adaptation Planning process is also underway, and this project can contribute learning to that planning process as well as benefit from the mainstreaming of adaptation at the national level, to share learning and scale up the experiences to further locations in the country. Moreover, data and knowledge aspects can also support the implementation and adaptive management of the adaptation measures at the local level.

2. Programme Objectives

The project seeks to address the repercussions of the primary environmental hazards identified, mitigating their influence on both human settlements and the surrounding natural environment: (i) fluctuations in sea levels and potential decrease; (ii) heightened occurrences of floods; (iii) more intense drought conditions; and (iv) increased heat in the Caspian Sea coasts, with a specific focus on Azerbaijan. Adaptation measures for these primary hazards will be examined in conjunction with ongoing urbanization processes, employing an integrated approach to spatial and coastal planning, innovation, knowledge sharing, access to resources, and management capacity.

The project aims to advance climate initiatives on both national and local scales in Azerbaijan. This entails strengthening capacity and establishing an evidence base for planning, prioritizing, and financing essential urban resilience and climate change adaptation measures. Specific actions will be implemented at the local level, including initiatives like water management, early warning systems, and addressing urban heat island effects. These actions will be supported by data collection for evidence-based decision-making, capacity development, studies to enhance understanding of nature-based solutions and water management, as well as financial initiatives. These efforts will unfold at both local and national levels, with the goal of up-scaling to other locations in Azerbaijan. This expansion will be achieved by leveraging the institutions and mechanisms established by national frameworks and under the Tehran Convention, which came into effect in 2006. Hence, the overall project objectives are summarized as follows:

Deleted: Framework Convention for the Protection of the Marine Environment of the Caspian Sea (

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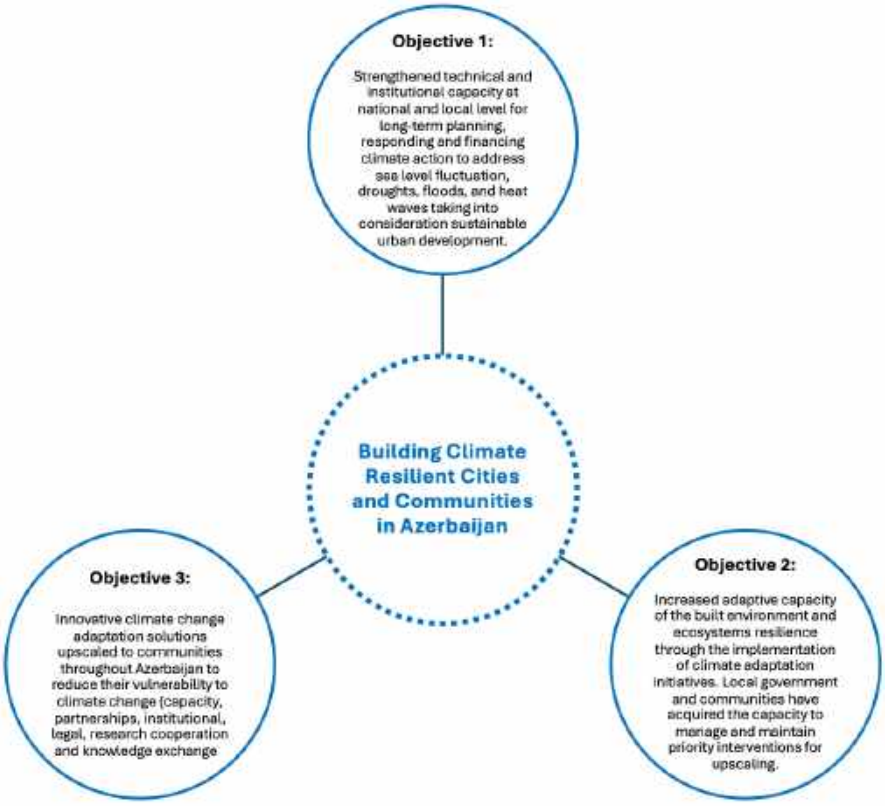

Figure 16: Project Objectives for Building Climate Resilient Cities and Communities in Azerbaijan

3. Programme Components and Financing

Table 3: Programme Components, Outcomes, Outputs and Costs

Programme Components	Expected Concrete Outcomes	Expected Concrete Outputs	Amount
Component 1: Technical and institutional capacity at national and local level for long-term planning, responding and financing climate action.	**OUTCOME 1:** Strengthened technical and institutional capacity at national and local level for long-term planning, responding and financing climate action to address sea level fluctuation, droughts, floods, and heat waves taking into consideration sustainable urban development.	**Output 1.1:** **Data and knowledge** on climate change risks and vulnerability for the Caspian Sea coast of Azerbaijan collected	862.250 USD
		Output 1.2: **Strategies and recommendations** developed for climate change adaptation coordination, planning and management	315.750 USD
		Output 1.3: National-and local level **capacities** in Azerbaijan strengthened to develop and finance plans and measures to address climate change and disaster related risks and impacts for greater local community resilience especially to sea-level fluctuation, droughts, heat waves, and floods	292.500 USD
		Sub-Total Component 1	**1.470.500 USD**
Component 2: Implementation and maintenance of climate adaptation initiatives.	**OUTCOME 2:** Increased adaptive capacity of the built environment and ecosystems resilience through the implementation of climate adaptation initiatives. Local government and communities have acquired the capacity to manage and maintain priority interventions for upscaling.	**Output 2.1:** Reduced heat risk through a demonstration greening corridor and development of investment planning for further projects in Greater Baku Region	3.238.992 USD
		Output 2.2: **Enhanced Early Warning System** for sea level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala	1.230.992 USD
		Output 2.3: **Improved water security and management** to reduce drought risk through demonstrated rainwater harvesting technology and advancing costed integrated water management plans in Astara	1.573.666 USD
		Sub-Total Component 2	**6.043.650 USD**
Component 3: Climate change adaptation solutions upscaled to communities throughout Azerbaijan.	**OUTCOME 3:** Applied innovative climate change adaptation solutions upscaled to communities throughout Azerbaijan to reduce their vulnerability to climate change (capacity, partnerships, institutional, legal, research cooperation and knowledge exchange).	**Output 3.1:** **Public Awareness and Engagement** Campaigns; Launch of campaigns to raise public awareness about the impacts of climate change and the importance of adaptation measures	410.000 USD
		Output 3.2: Financial Strategy for Climate Adaptation: Creation of a comprehensive financial strategy to support climate change adaptation measures	567.500 USD
		Sub-Total Component 3	**977.500 USD**
		Programme Activities Cost (A)	**8.491.650 USD**
		Programme Execution Cost (B) – Programme Cycle Management Fee by IE	**798.577 USD**
		Total Programme Cost (A+B)	**9.290.227 USD**
		Implementing Entity Fee (C)	**709.773 USD**
		Amount of Financing Requested	**10.000.000 USD**

4. Projected Calendar

Table 4: Brief Workplan

Milestones	Expected Dates
Start of Programme Implementation	January 2025
Mid-term Review	December 2026
Programme Closing	December 2028
Final Evaluation	December 2028

PART II: PROGRAMME JUSTIFICATION

A. Programme Components

The programme is a critically justified initiative, addressing the urgent need to fortify the nation against the increasingly tangible and destructive impacts of climate change and is strongly supported by both the Ministry of Ecology and Natural Resources, and UN-Habitat main counterpart, the State Committee on Urban Planning and Architecture (SCUPA). Azerbaijan, situated at a unique geographical crossroads, is particularly vulnerable to a range of climate-induced challenges such as sea level fluctuations along the Caspian coast, extreme weather events like heatwaves and droughts, and the growing frequency and intensity of floods. These phenomena not only pose a threat to the natural ecosystems but also have far-reaching implications on the socio-economic stability of the region.

A very recent World Bank report emphasizes how the country's imminent water security risks compound existing sector challenges, exacerbated by the country's dependency on transboundary sources. Coupled with mounting water quality challenges, reduced availability of transboundary water will mean that regional competition for scarce water resources will likely increase. Without adaptation investments, climate impacts on labour and water availability risk lowering productivity throughout the economy. Failure to invest in resilience will entail significant economic and inclusion costs. Vulnerability to catastrophic events is spatially concentrated, with relatively poorer areas likely to be impacted more severely. The Figure on the right shows the extent of correlation in spatial variation in the correlation of risks of various natural disasters and climate-related hazards with the relative wealth (RWI). Municipalities in the north and south borders (including Astara) are subject to both high overall exposure, climate vulnerabilities, and poverty.[7]

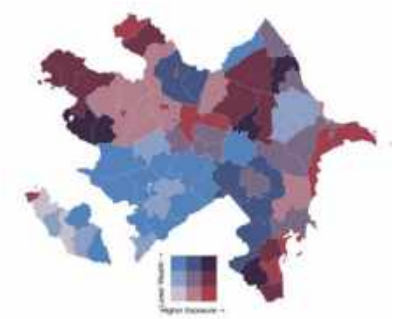

Figure 17: Exposure to Climate Vulnerabilities and Relative Wealth Index (RWI), constructed by the 'UC Berkeley's Center for Effective Global Action and Facebook's Data for Good' and Climate Impacts estimated. Darker colors: lower wealth, higher exposure. *(Source: The World Bank Group (2023), Azerbaijan – Country Climate and Development Report)*

This programme is essential in equipping national and local decision-makers with the necessary data, strategies, and skills to effectively mitigate these risks. Moreover, considering Azerbaijan's rapid urban development, demonstrating how climate change adaptation can be integrated into urban planning is crucial to ensuring sustainable and resilient urban growth. The programme aligns with global climate goals and commitments, addressing both local needs and broader environmental responsibilities. It also aligns to national priorities, as 2024 was declared "*Green World Solidarity Year*" in Azerbaijan, and the government gears up to host the 29th Conference of the Parties to the UN Framework Convention on Climate Change (COP29) in November 2024. By strengthening the nation's capacity to anticipate, prepare for, and respond to climate-related hazards, this initiative represents a proactive and essential step in safeguarding the future of Azerbaijan's environment and a tangible opportunity to localize climate action where it is most needed.

Component 1 is strategically designed to enhance the technical and institutional decision-making capacity at national and local level for long-term planning, responding and financing climate action.

Planned activities of Component 1:

1.1. Improving the collection of data and knowledge on climate change risks and vulnerability for the Caspian Sea coast of Azerbaijan.

- ☞ Outputs include:
  - **Analytical review** on information from other regions applicable to the Caspian Sea region.

[7] World Bank Group (2023), *Azerbaijan – Country Climate and Development Report*, Washington (https://documents1.worldbank.org/curated/en/099112723161524095/pdf/P17904806938f5083093a707fa0352e87a5.pdf

- **Climate Risk Analysis** of the current and projected climate risks specific to the Caspian Sea coast.
- **Vulnerability assessment** of the regions and communities most vulnerable to climate change along the Caspian Sea coast of Azerbaijan.
- **Multi-sector impact projections** of the potential impacts of identified climate risks.
- **Geospatial data mapping** of the areas of risk and vulnerability along the coast.
- **Report on the existing climatic data** for the Caspian Sea region.
- **Comparative study** on measures in which rules and regulations governing settlements in Azerbaijani coastal zone take climate change mitigation and adaptation needs into account.
- **Inventories of land-based sources of pollution**

1.2. Developing fit-for-purpose strategies and recommendations for better climate change coordination, planning and management.

☞ Outputs include:

- **Azerbaijan Caspian Sea Coast Adaptation Guidelines**
- **Policy Recommendation document** for Azerbaijan's Coastal Management
- **Sector-Specific Strategies** for coastal and marine Areas relevant to Azerbaijan's part of the Caspian Sea, such as fisheries, tourism, and oil and gas exploitation.
- **Compilation of case studies** that showcase successful climate adaptation and coastal management practices specifically in the Caspian Sea region, highlighting lessons learned that can be applied in Azerbaijan.

1.3. Developing and financing realistic plans and appropriate measures to address climate change and disaster related risks and impacts for greater local community resilience. .

☞ Outputs include:

- **Design of training modules** that address Integrated coastal zone management (ICZM) and Marine Spatial Planning (MSP) Focused Climate Resilience Training Modules, covering topics like coastal zone management, marine ecosystem preservation, sustainable coastal development, and MSP principles.
- **ICZM and MSP Best Practices and Case Study Compendium** that would include successful examples from both Azerbaijan's Caspian Sea coast and other relevant global contexts.
- **Community Engagement Toolkit for Coastal Areas** focusing on ICZM and MSP-related issues.

As per the **Theory of Change**, Outcome 1 will be: Strengthened technical and institutional capacity of decision-makers at national and local levels for long-term planning, responding and financing climate action to address climate change adversities such as sea level fluctuations, droughts, floods, and heat waves, taking into consideration urban development (Part III, section D: Results Framework).

Component 2 focuses on implementing innovative projects at the city and community levels, specifically targeting the enhancement of urban resilience and climate change adaptation.

The primary outcome of this component is to substantially increase the adaptive capacity of both the built environment and the resilience of local ecosystems. This is achieved through the careful selection and execution of climate adaptation projects that are transformative in nature, leading to meaningful and lasting change in how communities and urban areas respond to climate-related challenges,

Planned activities of Component 2:

2.1. **Greening of an abandoned railway corridor** to reduce the heat island effect in an area of rapid transformation located in the centre of Baku, aimed at proving the replication value for such investment projects in the Great Baku Region – in line with the priorities of the recently approved Baku City General Plan 2040 and identified as a project priority for enhancing public spaces and

pedestrian connectivity within an area dominated by roads and creating a biodiverse recreation spine. This programme will benefit the three districts of Nasimi, Khatai and Narimanov traversed by the railway corridor, improving the quality of life of some 570,800 inhabitants, including 42,600 elderly, some 127,500 children and youth, and 18,266 persons with disabilities who are particularly affected by urban heat waves.[8] Tendering arrangements could be explored to benefit unemployed youth of this area (over 21,170) which would also strengthen local ownership and self-esteem.

☞ Outputs include:

- **Feasibility study** for public space and greening design options for the railway corridor (in total, some 66,000 sqm) that will draw lessons from similar initiatives that have been implemented in New York, Paris and Valencia, and explore the constraints and advantages of the local context, including remediation needs and the introduction of native and drought resistant plant options.
- **Environmental and Social Impact Assessment (ESIA)** that will include a study on the design of gender-sensitive green and public spaces
- **Gender- and age-sensitive design options** drafted in consultation with SCUPA, the local authorities, community members, including small-medium businesses (SMEs) and potential investors.
- **Clean-up and remediation of the site and greening** with native and drought-resistant plant species watered through a hybrid system that would include rainwater harvesting system, water supply from the city, and drip irrigation.
- **Rehabilitation, construction and planting** along the cleared railway corridor – including the introduction of water harvesting systems for greenery
- **Advocacy and capacity development effort** to catalyze further finance for Hybrid Corridor Draft Investment Plans in Baku and its region.

2.2. Installing modern Early Warning System (EWS) to track in real-time sea-level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala that will benefit the whole district (89,200 inhabitants, including 47,900 elderly, 8,800 children and youth and 2,854 persons with disabilities).[9]

☞ Outputs include:

- **Study** on how access to EWS can build resilience in sectors such as agriculture, tourism and aquaculture as well as access to services, especially for families left behind by migrants in Neftchala
- **Installation of EWS devices** (Weather Station, Marine Hydro-meteorological Station, Hydrology Station, Acoustic doppler Current Profiler, Agro-meteorological Station) to monitor salinization, droughts, and flooding in 2 locations in the Neftchala district, to track the discharge and salinity of the Kura River.
- **Study on Nature Based Solutions (NBS)** to reduce salinization
- **Installation of a user-friendly illustrated hazard map** at the Neftchala District Executive Authority
- **Awareness-raising campaign** in schools and public facilities, learning exchanges.
- **Training materials on NBS**, salinization and/or spatial planning and/or integrated water management to address climate change impacts in urban areas.
- **ESIA monitoring**

2.3. Delivering and demonstrating how rainwater harvesting technology and integrated water management plans can improve water security and reduce drought risk in Astara. The intervention will benefit the urban dwellers of Astara (some 8,900 inhabitants), not only because of the reduced impact of flooding, but because of the increased water availability for the watering of public parks in summer. Through this approach, the component aims to create a ripple effect of positive change, where local level interventions lead to wider-scale adoption and adaptation.

☞ Outputs include:

[8] Figures are based on national average due to the lack of localized data
[9] As above

- **Feasibility study** on rainwater harvesting
- **Public education campaign** on water scarcity and locally managed water resources.
- **Costed plan** for adaptation solutions and integrated water management
- **Construction of 2 rainwater harvesting demonstration sites** in low-lying areas located along the Caspian Sea Promenade, identified in consultation with local authorities, local businesses and resident community, and generating labour-intensive jobs for unemployed youth from the area (statistics indicate that some 8,900 persons with disabilities live in the Astara district).
- **Training materials** on water resource management and developing costed adaptation plans.
- **Costed adaptation solutions** for integrated water management.
- **Environmental Impact Assessment Report (ESIA)**

This proactive stance in addressing urban resilience and climate change adaptation is vital in building more robust and adaptable cities and communities, ready to face the evolving challenges of our changing climate.

As per the Theory of Change, Outcome 2 will be: Increased adaptive capacity of the built environment and ecosystems resilience through the implementation of climate adaptation initiatives. By engaging in these projects, the local government and communities will acquire the capacity to manage and maintain priority interventions for upscaling, aligning with broader environmental and sustainability goals (Part III, section D: Results Framework).

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Component 3 focuses on enhancing urban resilience and climate change adaptation, leveraging partnerships, institutional and legal collaborations, and research, aimed at scaling up both capacities and results.

Planned activities of Component 3:

3.1. Launching of campaigns to raise public awareness about the impacts of climate change and the importance of adaptation measures

☞ Outputs include:

- **Climate Change Awareness Toolkits** containing informational brochures, interactive materials, and educational tools, designed to raise awareness of the general public about climate change impacts and the importance of adaptation measures. They could be tailored to different target groups, for different age groups and social segments.
- **Climate Resilience Storytelling Collection** highlighting the real-world impacts of climate change on individuals and communities, as well as examples of successful adaptation measures.

3.2. Creation of a comprehensive financial strategy to support climate change adaptation measures

☞ Outputs include:

- **Climate Adaptation Finance Guide** outlining various financial mechanisms and strategies to support climate adaptation initiatives.
- **Case Studies** on Successful Climate Adaptation Projects and Financing
- **Training materials** on developing and financing plans to address climate change impacts in urban areas and focusing on key target populations
- **Materials on peer-to-peer city learning and exchange workshops** between locations within Azerbaijan.
- **Workshops, seminars and field visits materials** on innovative and successful technologies and approaches used to build capacity on climate resilient livelihoods.

The financial strategy seeks sustainable funding sources for robust adaptation efforts, while the awareness campaigns aim to inform and engage communities – particularly children and youth – about the importance of climate adaptation. These initiatives together strive for a well-supported and community-involved approach in building sustainable urban resilience against climate change. Adaptation to climate change and resilience will be ensured by these interventions at different levels

not just by reinforcing the built and natural environment, but also by building socio-economic resilience with a focus on livelihoods/jobs and development infrastructure.

Special attention will be given to gender and youth regarding challenges from climate change and opportunities for resilience. All the programme activities on the expected outcomes anticipate a gender balanced participation. To promote gender equality approach, a female quota for participation will be applied for each training/workshop and organizers will seek the most suitable timing for women attending the training sessions. While the results of community consultations regarding women challenges, vulnerabilities and opportunities will be incorporated in the training agenda.

As per the Theory of Change, Outcome 2 will be: Applied innovative climate change adaptation solutions upscaled to communities throughout Azerbaijan to reduce their vulnerabilities to climate change, through improved capacity, partnerships, institutional, legal, research cooperation and knowledge exchange (Part III, section D: Results Framework).

In a nutshell, Component 1 contributes to Improved policies and regulations that promote and enforce resilience measures; Component 2 supports the development and diffusion of innovative adaptation practices, tools and technologies; while Component 3 aims to strengthen institutional capacity to reduce risks associated with climate induced socioeconomic and environmental losses, in parallel to increasing adaptive capacity within relevant development and natural resource sectors. For more details, see Part III D: Results Framework/Theory of Change, and F: Programme Alignment with AF Results Framework.

Overall, the activities and outputs of the programme have been designed in such a way that, ultimately, they can be realistically replicated and upscaled to other locations in the country – multiplying the **resulting impact** of the programme outcomes. The three programme components align to the Fund's three Strategic Pillars: **Action, Innovation and Learning and Sharing** in an integrated way, by strengthening linkages and synergies between its different components.

B. Economic, Social and Environmental Benefits of the Programme

Climate change poses a threat to achieving most of the goals of sustainable development. Moreover, climate change impacts are likely to exacerbate underlying causes of vulnerability, especially for those already facing societal inequities because of their gender, age, class, indigeneity and/or disability. The programme here envisaged will promote economic, social and environmental resilience in conjunction with national priorities to mobilize resources for implementation by developing transformative climate change adaptation projects that have the potential to act as catalysers for climate-resilient job creation and economic activities.

The activities are planned to build the long-term sustainability and capacity with resilience measures that also bring economic, social and environmental benefits. Studies on nature-based solutions, salinization and spatial planning for maritime and coastal areas in Azerbaijan will support improved environmental rehabilitation and conservation with the changing circumstances. Also, studies on building climate resilient livelihoods will identify economic and social benefits associated with EWS, especially for agriculture, tourism and aquaculture sectors, with a particular focus on low-income rural and suburban households, including migrants and families left behind by migrants. In addition, public education and awareness campaigns about climate change risks, especially related to water supply, will build knowledge and help empower groups to make sustainable choices about water consumption, use and wastewater and pollutants' disposal.

At the local level, when completed, the **phased creation of a 66,000 sqm public green space in Baku** (Output 2.1) will have tangible social and environmental benefits for the local community of 570,800 inhabitants and day users from other neighbourhoods with improved air quality, public space for leisure activities, play and sports – all of which have strong health benefits. Consultations will engage women, girls and people with disabilities from different backgrounds to ensure that the new space design will be as inclusive as possible, meeting the needs and aspirations of a wide spectrum of the surrounding community. The project will provide step-free-access to all areas and facilities – in a context where people with disabilities and older persons often struggle to navigate the public realm. The newly created green space will be complemented by the development of a 1,300 meter long public path (including a pedestrian bridge over 28th May Street to be built by the local authorities) that will provide a welcome alternative to the surrounding roads and will reconnect the area to the new commercial development of Baku Port. The green corridor is expected to increase the quality of adjacent public and private investments and improve the "permeability" of the area since the old railway area is currently off limits to the public and the dilapidated goods yard is fenced off.

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The installation of **Early Warning Systems (EWS) in Neftchala** (Output 2.2) aims to reduce the loss of property, assets and life of 89,200 rural and urban inhabitants, particularly those living in settlements located along the river, from the impact of seasonal floods overtopping the rivers banks. Heavy rainfalls occurred in the past years have also affected access to public buildings, such as schools and hospitals. The project will fully consider the differentiated risks and vulnerabilities of women and girls in the different contexts of home, workplace or education facilities. Monitoring devices will inform the authorities and the community on loss of fertile land and livestock due to salinization in the water creeping in from the sea so that they can take appropriate measures. The EWS will allow 47,900 elderly, 8,800 children and youth and 2,854 persons with disabilities to be warned in advance of an imminent flood.

The **water management and rainwater harvesting systems in Astara** (Output 2.3) will benefit the town's 8,900 inhabitants particularly those engaged in the tourism sector since most of hotels, guesthouses and restaurants line the shore in the identified project location, but also those wanting to make the most of the open spaces along the shore in both the rainy season and in summer. The project will be combined with long term integrated water management planning to improve sustainability of water supply and use in the region which benefits tourism, agricultural productivity, and human health. The regular irrigation of the parks from harvested water will reduce their maintenance costs for the Municipality and help reduce the summer heat in the parks located along the shore.

All activities and data collected will be analyzed for gender and age considerations. A gender sensitive approach will also be included in the design of communication, outreach, and awareness activities where between 30 to 50% of participants will be women – depending on the context. Communication products and studies include comprehensive analysis of the differentiated risks and vulnerabilities of women, and adaptation options that benefit them.

All implementation activities will include the results of a screening on gender issues and consider the participation of a gender specialist where applicable. The programme includes gender specific indicators as required.

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Table 5: Economic, Social and Environmental Benefits

Type of benefit	Baseline	With/after the Programme
ECONOMIC	• Increase of extreme weather events resulting in floods, impact on private property and public infrastructure, economic losses and worsen livelihood conditions. • Decreased productivity for seasonal workers and fishing community. • Decreased agricultural productivity and loss of livestock due to salinization and limited water resources decreasing income-opportunities. Risks to tourism industry from lack of water supply and increased extreme events including flooding and dust storms.	• Reduced losses on private property, assets and public infrastructure due EWS and improved spatial planning for flooding. • Increased real-estate value of land adjacent to projects sites • Jobs created – including for women (Gender Gap score of 68,7%) • Climate resilient livelihood pathways identified. • Improved access to water for agricultural productivity and domestic chores. • Reduced losses of tourism generated income due to extreme events and low water supply affecting the tourism industry.
SOCIAL	• Extreme weather events such as floods, droughts and heatwaves are considered co-drivers of poverty and result in social problems such as sanitation, food security and health issues, aside from significant economic losses at the level of the households and community. • Urban heat waves particularly affect the elderly, children, and people with medical conditions, causing various illnesses, including heat cramps, heat exhaustion, heatstroke, and hyperthermia. • Women and children face greater vulnerability to climate change than men, because of greater sensitivity and lower adaptive capacity • Water stress has an impact on public health. • Migrants and other groups lacking information on risks. • Low education and awareness of water supply issues and how they relate to climate change.	• Reduced impact to human health due to heat stress and increased attractiveness of well-maintained and shaded public open-air space. • Reduced social impacts in low-income communities suffering from overcrowded housing. • Reduced damage to infrastructure resulting in more resilient vulnerable communities. • Reduced public health impacts from heat and water stress, particularly for low-income households and businesses (according to UN Women, girls and women aged 15+ spend 25.4% of their time on unpaid care and domestic work, compared to 8.9% spent by men) and women working outdoors. • Reduced mental health problems due to extreme weather events, flooding, displacement and heat stress impact on the population. • Increased ratio of public green spaces per person in urban settings and improved open-air spaces, leisure and sports facilities for all • Increased awareness of climate risks by women, girls, migrants and other less-connected members of the community by involving at least 50% of women in consultations workshops and decision-making • More women engaged in decision-making and able to represent other more vulnerable members of society. • Improved knowledge and understanding of water supply issues and how they relate to climate change.
ENVIRONMENTAL	• Extreme weather events such as floods and heatwaves and sea level fluctuation have a severe impact on ecosystems and biodiversity. • Urban heat is leading to changes in vegetation cycles affecting flora and dependent fauna that causes loss of biodiversity. • Lack of knowledge on appropriate nature-based solutions for salinization and sea level fluctuation. • Desertification contributing to land conversion. • Pollution and degradation of water ways.	• Increased biodiversity in rural areas and urban settlements • Improved understanding of nature-based solutions for sea level fluctuation and capacity to address environmental challenges. • Sustained and enhanced capacity of ecosystems to provide life-supporting services. • Reduced pollution of waterways from salinity, sewage and solid waste. • Improved understanding of river ecosystem health.

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C. Cost-effectiveness of Programme

The different projects were identified following an evaluation of intervention opportunities and their cost effectiveness. The selection scores for identifying target communities were based on six criteria:

1. Type of hazard, prioritized by intensity
2. Hazard level, determined by occurrence rate
3. Number of potential beneficiaries, weighed against the largest impact versus cost
4. Cost-benefit analysis of potential interventions to address vulnerabilities and strengthen community resilience
5. Necessity of the proposed intervention, evaluated through stakeholder consultations
6. Alignment with government priorities,

The cumulative scores from these criteria facilitated the identification of the most vulnerable communities for targeted interventions, each with specific weights and scoring methods that are detailed in Annex 5.

In Baku, aside from the selected abandoned railway corridor project, the team took into consideration the alternative sites of Piralahi Island, subject to heat and flooding, and Siyazan, impacted by bio-hazards. In Neftchala, aside from the selected EWS intervention, the team looked into the expressed need to dredge the river and canals, and the realization of public parks and protection of biodiversity. In Astara, aside from the selected establishment of a rainwater harvesting system for public parks, the team evaluated also a proposed protection scheme against landslides in remote rural areas and the establishment of a water recycling system in public buildings.

By focusing on solutions that can be replicated in the target communities, there is an opportunity for efficiency gains and learning that can be shared across the programme. Also at the local level, there is a focus on development investment plans and costed water management plans to find funding and cost-effective solutions for further adaptation measures. In addition, having the capacity building and knowledge generation and dissemination at the national level provides an opportunity to utilize the existing coordination and capacity at national level to share information. Considering the envisaged cooperation with the biennial Caspian Economic Forum, the fund holds great potential for innovative, specific, and sustainable climate change adaptation projects. From a strategic point of view, the cost-effectiveness of planning and managing urban and maritime development as well as adaptation to climate change strategies in advance is proven to be more cost effective rather than being responsive to natural hazards or once informal urban sprawl has occurred.

In relation to cost-effectiveness of programme management, the presence of UN-Habitat and UNEP as well as IOM at country and regional scales, supported by the Resident Coordinator's offices in addition to the existence of on-going initiatives by various development partners ensure that human and financial resources will be managed in the most cost-effective manner, building on a solid know-how and networks of professionals to develop project activities.

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D. Consistency with national or sub-national Sustainable Development Strategies

The proposed programme is supporting Azerbaijan in achieving their respective targets committed to achieving the **2030 Sustainable Development Agenda**, particularly the Sustainable Development Goals (SDGs) 6, 11, 13, 14 and 15.

- SDG 6: Ensure availability and sustainable management of water and sanitation for all
- SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable;
- SDG 13: Take urgent action to combat climate change and its impacts;
- SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development; and
- SDG 15: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Alongside the SDGs, the programme and its associated sub-components at the national level are consistent with the goals of the *New Urban Agenda*. It is in accordance with the **Strategic Plan 2020 – 2025 of the Implementing Entity**, encompassing all its designated Domains of Change (DoCs).

- DoC1: Reduced spatial inequality and poverty in communities across the urban-rural continuum;
- DoC2: Enhanced shared prosperity of cities and regions;
- DoC3: Strengthened climate action and improved urban environment; and
- DoC4: Effective urban crisis prevention and response.

The programme will support the implementation of national policies and strategies by focusing on reducing vulnerabilities to the impacts of climate change. It aims to develop adaptation measures that will decrease or minimize potential losses at the national, local, and community levels. Specifically, the programme aligns with the objectives, strategies, and priority actions outlined in national development plans related to climate change adaptation, disaster risk reduction, and the broader themes of environment and urbanization.

National sustainable development strategies

The strategic document ***Azerbaijan 2030: National Priorities for Socio-Economic Development*** delineates five national priorities that hold particular significance in meeting the obligations arising from the 2030 Sustainable Development Agenda. In tandem with the country's promising economic development, it also aims to ensure a healthy environment:

- A steadily growing, competitive economy;
- A dynamic, inclusive society based on social justice;
- Areas of modern innovations and competitive human capital;
- The great return to the territories liberated from occupation; and
- A clean environment and country of “green growth”.

Based on this document, Azerbaijan has approved the ***Strategy of Socio-Economic Development 2022–2026***, with a specific focus on measures to address global climate change. The strategy's action plan encompasses the establishment of a greenhouse gas inventory and the implementation of a measurement, reporting, and verification (MRV) system. Additionally, it involves creating an institutional framework aligned with the existing MRV system and developing a national database in line with global climate change practices. A dedicated section within the ***Azerbaijan 2020: Vision for the Future*** addressing environmental protection and challenges focuses on the expansion of forests and green areas.

Furthermore, **policies addressing climate change** have been integrated into numerous sector-specific legislative acts, including the Laws of Azerbaijan on the Efficient Use of Energy Resources and Energy Efficiency, Electric Power Industry, Electric Power Industry and Thermal Power Plants, Alternative and Renewable Energy in Azerbaijan, State Programme on Resource Utilization, State Programme for Socio-Economic Development of the Regions of Azerbaijan 2019 – 2023, State Programme for Industrial Development of Azerbaijan 2015 – 2020, and other relevant documents. Furthermore, climate change policy is addressed in sector-specific strategic roadmaps formulated for the national economy and its primary sectors. As an illustration, the strategic roadmap for the production and processing of agricultural outputs in Azerbaijan provides a comprehensive overview of several preventive and adaptation policies associated with climate change. These include the development of mechanisms to reduce negative impacts of climate change on agriculture, the creation of forest belts and improvement of environmental protection in the agricultural sector. Furthermore, there is the intention to establish mechanisms to evaluate the effects of land use change, enhance pasture management, rehabilitate irrigated lands, and prevent salinization, all aligned with the goal of promoting sustainable utilization of agricultural land and water resources.

Given their significant contributions of forests to soil protection, water regulation, biodiversity conservation, and the absorption of carbon from the air, the ***State Programme for Poverty Reduction and Sustainable Development in Azerbaijan*** places a strong emphasis on enhancing the environmental situation and promoting sustainable environmental management. The ***Great Return*** to the liberated areas has adopted a reintegration approach to the national economy. Considering the abundant natural resources in this region, the socio-economic recovery is anticipated to involve smart and green technologies, reforestation, the expansion of green zones, and the enhancement of public-private partnerships.

Azerbaijan has specified targets for adaptation contributions in its intended **Nationally Determined Contributions (INDC)**[10] and the update in 2023[11]. The commitment involves addressing adaptation measures to minimize losses at national, local, and community levels across various sectors. It also guides the urbanization process, emphasizing land-use changes to preserve agricultural land, open spaces, and enhance biodiversity, while addressing the impacts of droughts, floods, and the heat island effect. The programme is aligned with regional, national, and local policy priorities, strategies, and plans, aiming to contribute to their localization and further implementation. In addition, the Azerbaijan has initiated its **National Adaptation Planning (NAP)** process with a grant from the Green Climate Fund, implemented by UNDP, with the Ministry of Ecology and Natural Resources as National Designated Authority. The NAP process focuses on water, agriculture and coastal areas and focuses on building the capacity of stakeholders and mainstream adaptation considerations.

Moreover, the programme will consider the recommendations and strategies outlined in the various **Communications to UNFCCC**, most recently the National Communication (NC) NC4[12]. Hosting COP29 in November 2024 will offer a unique platform for Azerbaijan's government to showcase its commitment to climate action, positioning the country as a leader in the region not only in traditional energy resources but also in renewables, smart technologies and implementing climate adaptation actions.

With regards to sustainable urbanization, various legislations and regulations will be taken into consideration, these include (among others) the *Law of the Republic of Azerbaijan on Fundamentals of Urban Development* (1999); and the *Law of the Republic of Azerbaijan on Architectural Activity* (1998); *Law on Hydrometeorological Activities* (1998), *Law on Environment Protection* (1999), *Law on Environmental Safety* (1999), *Law on Protection of Atmospheric Air* (2001).

Azerbaijan is currently without a comprehensive national urban policy. However, with the assistance of UN-Habitat, efforts are underway to initiate the development of a **National Urban Policy** (NUP) for Azerbaijan which will be launched by mid-2024 supported by UN-Habitat's Country Office and its HQ-based NUP Programme. Furthermore, Government has undertaken various multi-sectoral regional and local territorial planning initiatives, such as the recently approved **Master Plan for Baku**[13], which outlines strategies for urban and environmental rejuvenation along with the development of sustainable urban infrastructure. Numerous secondary cities are currently in the process of formulating Master Plans, and certain districts are actively engaged in crafting district-level planning strategies. Additionally, the Government has introduced a nationwide initiative known as the **Smart Cities and Smart Villages program**, concentrating on implementing sustainable solutions in housing, manufacturing, social services, "smart agriculture," and alternative energy provision. In October 2024, SCUPA will be also hosting the 2nd Expert Group Meeting (EGM2) for the drafting of the ***International Guidelines on People-Centered Smart Cities***. Simultaneously, the Government's **2016 Road Map** envisions novel approaches to infrastructure development, encompassing electricity, water, waste management, and similar aspects for all communities nationwide. This also involves the establishment of new governance systems in these areas[14]. The proposed program is poised to align with and contribute to the realization of these local-level strategies and plans.

Caspian Sea region protocols and agreements

The programme objectives are in line with the *Framework Convention for Protection of Marine Environment of Caspian Sea - Tehran Convention*. Having entered into force in 2006, the Tehran Convention is the first regional legally binding instrument signed by all five Caspian littoral states. It serves as an overarching governance framework which lays down the general requirements and the institutional mechanism for environmental protection and sustainable development in the Caspian Sea region. Under its umbrella the Parties have developed additional Protocols on priority areas of common concern:

- Protocol Concerning Regional Preparedness, Response and Co-operation in Combating Oil Pollution Incidents (Aktau Protocol);
- Protocol for the Protection of the Caspian Sea against Pollution from Land-based Sources and Activities (Moscow Protocol);

[10] https://unfccc.int/sites/default/files/NDC/2022-06/INDC%20Azerbaijan.pdf
[11] https://unfccc.int/sites/default/files/NDC/2023-10/Second%20NDC_Azerbaijan_ENG_Final%20%281%29.pdf
[12] https://unfccc.int/documents/299472
[13] https://arxkom.gov.az/en/bakinin-bas-plani
[14] https://static.president.az/pdf/38542.pdf

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- Protocol for the Conservation of Biological Diversity (Ashgabat Protocol); and
- Protocol on Environmental Impact Assessment in a Transboundary Context.

In addition, other regional agreements were considered while developing the programme:

- Coordinating Committee on Hydrometeorology and Pollution Monitoring of the Caspian Sea (CASPCOM);
- Agreement on the Preservation and Rational Use of Aquatic Biological Resources of the Caspian Sea.

The **National Convention Action Plan (NCAP) of the Republic of Azerbaijan 2007–2017** aims to advocate for the protection and sustainable utilization of the Caspian Sea's natural resources, fostering conditions for Azerbaijan's enduring socio-economic development. It involves identifying the types and characteristics of impacts on the Caspian Sea ecosystem within the national territory, detailing their sources and causes (both direct and initial), and analysing potential preventive, mitigating, and recovery actions. The overarching objective of the NCAP is to enhance environmental conditions in Azerbaijan's sector of the Caspian Sea and its coastal area, minimizing adverse impacts on human health and preserving the life-supporting functions of the hydro- and biosphere. The document also emphasizes Azerbaijan's active engagement in regional and international environmental protection initiatives. Tailored to the decision-makers in the government, ministries, and institutions responsible for natural resource use, environmental monitoring, and supporting activities, the NCAP plays a crucial role in guiding environmental stewardship in Azerbaijan.

E. Compliance with relevant National Technical Standards

Table 6: Compliance with relevant Technical Standards

Expected Output/ Intervention	Relevant rules, regulations, standards and procedures (to comply with AF principle 1)	Compliance, procedures and authorizing offices
Comprehensive agricultural production management	Law on Accelerating Institutional Reforms in Agriculture (2014); Law on Establishment of "E-agricultural Information System" (2019).	Ministry of Agriculture
	State Program on Development of Wine-growing in the Republic of Azerbaijan during 2012-2020 (2012); State Program on Development of Tobacco-growing in the Republic of Azerbaijan during 2017–2021 (2017); State Program on Development of Cotton-growing in the Republic of Azerbaijan during 2017–2022 (2017); State Program on Development of Agricultural Cooperation in the Republic of Azerbaijan during 2017–2022 (2017); State Program on Development of Citrus Production in the Republic of Azerbaijan during 2018– 2025 (2018); State Program on Development of Paddy-growing in the Republic of Azerbaijan during 2018–2025 (2018); State Program on Development of Tea Production in the Republic of Azerbaijan during 2018–2027 (2018); State Program on intensive Development of Livestock and efficient Use of Pastures in the Republic of Azerbaijan in 2019-2023 (2019); State Program on the Development of Cocoons and Silkworm Breeding in the Republic of Azerbaijan for 2018-2025 (2018); State Program on Development of Wine-making in the Republic of Azerbaijan during 2018–2025 (2018).	Ministry of Agriculture, FSA
Forest area rehabilitation and conservation	Forest Code (1997); National Forest Program for the Protection and Sustainable Development of Forests in the Republic of Azerbaijan for 2020-2030 (2020); National Strategy on Protection and sustainable Use of Biodiversity in the Republic of Azerbaijan for 2017-2020 (2016)	Ministry of Environment and Natural Resources
Integrated sewage system and solid waste management	Law on Industrial and Household Wastes (1998, 2007); Law on Water Supply and Wastewater (1999); Water Code (1997); Law on Protection of Environment (1999); Law on Safety of Hydrotechnical Installations (2002); Land Code (1999); Law on Environment Impact Assessment (2018); Azerbaijan 2020: Vision to Future Development Concept (2002); State Program for socio-economic Development of the Regions in the Republic of Azerbaijan during 2019-2023 (2019); National Strategy for improving Solid Waste Management in the Republic of Azerbaijan for 2018-2022 (2018).	Ministry of Environment and Natural Resources, Ministry of Economy, Azersu OJSC, local government

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Integrated water resource management	Water Code (1997); Law on Protection of Environment (1999); Law on Water Supply and Wastewater (1999); Law on Hydrometeorological Activity (1998); Law on Safety of Hydrotechnical Installations (2002); Law on Environment Impact Assessment (2018); Azerbaijan 2020: Vision to Future Development Concept (2002); State Program for socio-economic Development of the Regions in the Republic of Azerbaijan during 2019-2023 (2019); Action Plan for 2020-2022 to ensure the efficient Use of Water Resources (2020).	Ministry of Environment and Natural Resources, AWF OJSC, Azersu OJSC,
Biodiversity protection	Law on Wildlife (1999); Law on Protection of Environment (1999); Law on Specially Protected Natural Areas and Objects (2000); Forest Code (1997); Law on Fishing (1998); Law on Hunting (2004); National Forest Program for the Protection and Sustainable Development of Forests in the Republic of Azerbaijan for 2020-2030 (2020); National Strategy on Protection and sustainable Use of Biodiversity in the Republic of Azerbaijan for 2017-2020 (2016).	The Ministry of Ecology and Natural Resources
Urban planning system	Preparation of a National Urban Policy initiated. Spatial Master Plans are being developed for urban areas and revised on a regular basis.	State Committee for Urban Planning and Architecture (SCUPA)
Clean energy	Law on Energy (1998); Law on Energy Efficiency (draft); Law on Renewables (draft), Pilot SEA applied to National Strategy on the Use of Alternative and Renewable Energy Sources 2015-20	Ministry of Economy, Azerenergy OJSC,
Climate-resilient livelihoods and circular economy	Law on Environmental Impact Assessment (EIA) (2018)	Ministry of Environment and Natural Resources; Ministry of Labour and Social Protection of Population
Knowledge exchange and training on mainstreaming climate change adaptation to urbanization	Law on Ecological Education and Awareness of the Population (2002)	Ministry of Environment and Natural Resources, State Committee for Urban Planning and Architecture

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F. Alignment of Programme with other Funding Sources

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The programme will avoid overlapping with projects that have been conducted or are ongoing and seek complementarity in the climate change adaptation and disaster risk reduction field as well as addressing environmental and urban challenges; among others, these include:

- International Climate Finance for Eastern Europe, the Caucasus, and Central Asia (EECCA 2016);
- UNDP managing droughts and floods in Azerbaijan (UNDP);
- Increasing representation of effectively managed marine ecosystems in Azerbaijan (UNDP GEF, 2012);
- Integrating Climate Change Risk Management in Azerbaijan (UNDP);
- NAP Support Project for Adaptation Planning and Implementation in Azerbaijan (UNDP, ongoing);
- EU4Climate (UNDP, ongoing);
- Enhancing Climate Information and Multi-hazard Early Warning for Resilience in Azerbaijan (UNEP/ GCF);
- Ecosystem-based Adaptation Programme (UNEP);
- Addressing Marine litter in the Caspian Sea region (UNDP/UNEP) (2024);
- Blueing the Caspian Sea region; Strengthen the capacity of the participating countries to address pollution and improve biodiversity conservation in the Caspian Sea (2025) (WB/UNEP);
- Middle Trade and Transport Corridor: Opportunities and Challenges Advisory (WB); and
- New Urban Assessment 2024 (Asian Development Bank).

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The programme will place particular emphasis on components addressing both policy and implementation dimensions related to climate change adaptation and resilience planning. This effort will build on comprehensive climate change impact assessments, focusing on biodiversity and livelihoods, especially in the solid waste, water, and sewage sectors. In collaboration with the entire United Nations Development System in the Caspian Sea region, the initiative aims to enhance knowledge and awareness of climate change adaptation, along with conducting a harmonization of climate change adaptation with sector policies. It is crucial to promote active community participation in decision-making processes and facilitate the development of climate-resilient income-generating activities. To achieve this, FAO has highlighted key sectors, including biodiversity protection, forest restoration, support for fishery communities, afforestation, and activities addressing land salination and erosion. As International Financing Institutions (IFI) have initiated engagement in climate adaptation and urbanization, the programme will ensure alignment with planned outputs.

The program has drawn valuable lessons learnt from prior and ongoing initiatives in relevant sectors, intending to complement them by addressing the persistent challenge of coastal erosion along the Caspian Sea shores. Nevertheless, the proposed components in the programme offer a more specific and unique approach to action, grounded in spatial and maritime planning, coupled with the implementation of concrete adaptation initiatives. The initiative advocates for an integrative and multi-sectoral approach to climate change adaptation and resilience, with a distinct focus on urban planning and design as a pivotal tool to confront the outlined challenges at both regional and local levels. Given that challenges in coastal areas are intrinsically tied to land use, population growth, and spatial development, this approach becomes imperative. In alignment with the relevant decrees and orders of the President of Azerbaijan, within the framework of the *National Program on Environmental Socio-Economic Development in the Republic of Azerbaijan*, the creation of landfills for the collection, transportation, and disposal of hazardous (including radioactive) wastes involved international investment. As part of the *State Program on socio-economic development of Baku and its settlements in 2014-2016*, the national water supply and sewerage project is progressing in six districts of Azerbaijan. The reconstruction of water supply and sewerage infrastructure in Astara, Dashkasan, Gadabay, Tartar, and Gazakh districts under the *National Water Supply and Sewerage Project in 6 Regions of Azerbaijan*, co-financed by "Azersu" OJSC and the Islamic Development Bank, is being implemented.

However, these plans do not integrate projections for climate change and provide details on how they will impact on people or the environment nor do they include measures to adapt to climate change.

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Table 7: Relevant Projects, Lessons Learnt and complimentary Potential – Caspian Sea Region

Relevant Projects/ Programme, Executing Entity and Budget	Lessons Learnt (relevant for proposed Interventions)	Complimentary Potential and non-Duplication
Framework Convention for the Protection of the Marine Environment of the Caspian Sea ('Tehran Convention')	The understanding of the necessity to protect and preserve the Caspian Sea's natural resources for future generations and that this goal can only be achieved through international cooperation. It serves as an overarching governance framework which lays down the general requirements and the institutional mechanism for environmental protection and sustainable development in the Caspian Sea region.	Complementarity: Azerbaijan, Iran, Kazakhstan, Russian Federation and Turkmenistan confirmed their readiness to go the path of sustainable development and to take environmental concerns into account in their development planning. Non-Duplication: Under its umbrella the Parties have developed additional Protocols on priority areas of common concern. The effective implementation of the Tehran Convention and its Protocols will support the protection of the marine environment and with it of the livelihoods, health and well-being of present and future generations around the Caspian Sea.

Table 8: Relevant Projects, Lessons Learnt and complimentary Potential

Relevant Projects/ Programme, Executing Entity and Budget	Lessons Learnt (relevant for proposed Interventions)	Complimentary Potential and non-Duplication
Regional and City Plans/ State Committee on Urban Planning and Architecture	Process of developing city plans for dozens of cities	Coordination of several agencies on producing documents; identification of priority interventions
State Program on various issues (Poverty reduction; employment; socioeconomic development)	Governance in solving problems	Employment strategy; poverty reduction strategy and Targeted Social Assistance Programs on development of underprivileged communities

G. Learning and Knowledge Management

There is a deficiency in scientific and technical capacity within national and local institutions for conducting multi-hazard, vulnerability, and risk assessments. Real-time weather and climate monitoring capability is severely limited, and timely forecasting is unavailable in most coastal areas. Attention to the development of early warning systems for climate-related hazards is lacking, and there is an absence of effective communication linkages between national-level hydrometeorological forecasting capacity and community-level stakeholders. Consequently, coastal communities in the Caspian Sea Basin lack accurate, timely, and actionable data to inform adaptation to climate change impacts and respond effectively to climate-related hazards. Additionally, there is an insufficient evidence base for the integrated, climate-smart coastal zone management planning necessary for timely and efficient adaptation to expected climate change impacts.

Currently, Caspian Sea countries predominantly adopt single/national-country approaches to climate change challenges. However, considering the interconnected nature of ecosystems, there is a need for a systems approach that transcends national boundaries. The lack of accurate information on climate change impacts on the Caspian Sea basin results in insufficient consideration of its unique climate-induced threats in country-level climate change planning and response actions. To address these challenges and associated root causes and barriers, the proposed programme aims to enrich climate information in Azerbaijan contributing to the regional database managed by the Tehran Convention. The programme emphasizes learning and knowledge management at national and local levels, focusing on awareness raising and knowledge sharing of climate change-related information and adaptation strategies, particularly concrete adaptation measures. The uptake of knowledge and tools developed during the programme will be ensured through activities under the last programme component, strengthening cooperation between various local governments in Azerbaijan and facilitating the application of lessons learned in other local, national and regional initiatives. This includes policy recommendations through platforms such as the Tehran Convention and its web-based hub, the *Caspian Environment Information Centre (CEIC)*.

Furthermore, the programme will implement a capacity development approach related to resilience and climate change adaptation. Drawing on experiences from the nearby Aral Sea region, as well as the Black and Mediterranean Sea, a "community of practice" will bring together urban development and resilience experts to provide technical support and jointly develop bankable projects for climate change adaptation, alongside policy support in Azerbaijan. The programme stakeholders will gain a common understanding of Integrated Coastal Zone Management (ICZM) and identify solutions and best practices that fit their national/ local conditions. A standardized data collection system and qualitative evaluation by local government representatives will systematically track and evaluate these local practices. The CEIC knowledge platform will enable the aggregation, analysis, and sharing of data on a local, national, or regional level. This iterative and participatory approach will allow national and local officials in different countries but within the same climate zone to learn from successful experiences elsewhere. As the programme progresses, the number of training and capacity-building sessions will be expanded and revised as necessary, with trainers customizing knowledge modules to meet national/ local circumstances. These factors will facilitate efficiencies in information exchange, knowledge creation and analysis, dissemination, and uptake of new knowledge.

Various knowledge needs influence the objectives, format, and dissemination tools of knowledge products. Different stakeholders, including national and local government officials, representatives of sectoral Working Groups, the local population, researchers, international donors, and the general public, will require different types of information and data. Knowledge products will include analytical and workshop reports, training materials, reviews, guidelines, manuals, and maps. To maximize learning and knowledge exchange, various communication tools will be creatively utilized, including a web-based platform, social media, printed documents, peer-to-peer city learning and exchange workshops, and public consultations. Social media platforms will allow for a wide reach, broadcasting information. Public awareness events are planned in line with the International Day of the Caspian Sea, celebrated annually on 12 August, based on an Action Plan developed and presented at the earliest stages of the programme. The programme's knowledge will be actively shared with policy makers, donors, private sector representatives, NGOs, and potential program developers, ensuring sustainable mainstreaming into future initiatives and programs. The suggested areas of learning and knowledge management encompass a comprehensive approach to address the identified challenges.

The suggested areas of learning and knowledge management are outlined below:

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Table 9: Outputs, Learning Objectives, Indicators and Knowledge Products

Expected concrete Output/ Intervention	Learning Objectives (LO) and Indicators (I)	Knowledge Products
OUTCOME 1: Strengthened technical and institutional capacity at national and local level for long-term planning, responding and financing climate action to address sea level fluctuation, droughts, floods, and heat waves taking into consideration sustainable urban development.		
Output 1.1: Data and knowledge on climate change risks and vulnerability for the Caspian Sea coast of Azerbaijan collected	**(LO)** National stakeholders equipped with information related to precipitation, sea level fluctuations, increased air temperature, floods, droughts and chlorophyll distribution in seawater **(I)** # of national stakeholders familiarized with the short and long-time scenarios of the precipitation, sea level fluctuations, increased air temperature, floods, droughts and chlorophyll distribution in seawater	• Analytical review on information from other regions applicable to the Caspian Sea region in the field of urban resilience and adaptation to climate change. • Climate Risk Analysis: Detailed analysis of the current and projected climate risks specific to the Caspian Sea coast. This would include data on sea level changes, extreme weather events, and other relevant climate phenomena. • Vulnerability Assessment: Identification and assessment of the regions and communities most vulnerable to climate change along the Caspian Sea coast of Azerbaijan. This part would consider socioeconomic factors, geographical features, and existing infrastructural resilience. • Impact Projections: Projections of the potential impacts of identified climate risks on various sectors such as agriculture, fisheries, urban areas, and natural ecosystems. • Geospatial Data and Maps: Integration of geospatial data and maps to visually represent the areas of risk and vulnerability along the Caspian Sea coast. • Report on the existing climatic data for the Caspian Sea region. • Comparative study on measures in which rules and regulations governing settlements in Azerbaijani coastal zone take climate change mitigation and adaptation needs into account. • Inventories of land-based sources of pollution (point sources; diffuse sources; pollution from other activities) along Annex 1 categories in line with the Moscow Protocol and development of the list(s) of hotspots (Art. 7) in line with the Moscow Protocol. • Pollutants list based on Annex 1 of the Moscow Protocol, list B (Categories of Substances) incoming through rivers and watercourses.
Output 1.2: Strategies and recommendations developed for climate change adaptation coordination, planning and management	**(LO)** Stakeholders are capacitated to integrate the recommendations developed for climate change adaptation coordination, planning and management into the national coastal and marine management plans **(I)** # number of stakeholders up taking the information from the knowledge materials	• Azerbaijan Caspian Sea Coast Adaptation Guidelines with ICZM and MSP Integration. • Policy Recommendation Document for Azerbaijan's Coastal Management: A document offering policy recommendations tailored to the coastal management of Azerbaijan's section of the Caspian Sea. • Sector-Specific Strategies for Coastal and Marine Areas in Azerbaijan: Create strategies that focus specifically on sectors relevant to Azerbaijan's part of the Caspian Sea, such as fisheries, tourism, and oil and gas exploitation. • Case Studies Compilation with Focus on the Caspian Sea: A collection of case studies that showcase successful climate adaptation and coastal management practices specifically in the Caspian Sea region, highlighting lessons learned that can be applied in Azerbaijan.
Output 1.3: National-and local level capacities in Azerbaijan strengthened to develop and finance plans and measures to address climate change and disaster related risks and impacts for greater local community resilience especially to	**(LO)** National and local level stakeholders are trained to develop ICZM and MSP plans to address climate change impacts **(I)** # of people trained, disaggregated by gender	• ICZM and MSP Focused Climate Resilience Training Modules: These training modules would be specifically designed to include elements of ICZM and MSP. They would cover topics like coastal zone management, marine ecosystem preservation, sustainable coastal development, and MSP principles alongside climate risk assessment and adaptation planning (including link to Azerbaijan National Urban Policy) • ICZM and MSP Best Practices and Case Study Compendium: A collection focused on case studies and best practices in ICZM and MSP, particularly as they relate to climate change adaptation and disaster risk management. This would include successful examples

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sea-level fluctuation, droughts, heat waves, and floods.		from both Azerbaijan's Caspian Sea coast and other relevant global contexts. • Community Engagement Toolkit for Coastal Areas: This toolkit would be tailored to engage communities in coastal zones, focusing on ICZM and MSP-related issues. It would include resources for conducting community consultations, workshops, and participatory planning in coastal and marine areas.
OUTCOME 2: Increased adaptive capacity of the built environment and ecosystems resilience through the implementation of climate adaptation initiatives. Local government and communities have acquired the capacity to manage and maintain priority interventions for upscaling.		
Output 2.1: Reduced heat risk through a demonstration greening corridor and development of investment planning for further projects in Greater Baku Region	**(LO)** National and local officials and communities will have enhanced knowledge on heat risks and development of investment plans in Baku **(I)** # of officials trained, disaggregated by gender **(I)** # and types of infrastructure constructed and protective natural/social assets built/rehabilitated	• Study on nature-based solutions, salinization, and/or spatial planning to address sea level fluctuation in urban areas along the Caspian Sea coast • Feasibility study for public space and greening design options. including optimal plant species to combat urban heat. • Community consultation reports about design and options. • Training materials on adaptation investment planning and adaptation finance options. • Draft investment plan for remaining hybrid green corridor.
Output 2.2: Enhanced Early Warning System for sea level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala	**(LO)** Local and national stakeholders are capacitated to use enhanced Early Warning System for sea level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala (Republic of Azerbaijan) **(I)** # of officials trained, disaggregated by gender **(I)** Early Warning System is in use	• A study on building climate resilient livelihoods building on how access to Early Warning Systems can build resilience in sectors such as agriculture, tourism and aquaculture as well as access to services, especially for families left behind by migrants in Neftchala • Early warning dashboard system at the Ex Com Office (local government). • Communications measures, products and protocols. • Training on EWS and data synthesis. • Study on NBS to reduce salinization. • Training materials on nature-based solutions, salinization and/or spatial planning and/or integrated water management to address climate change impacts in urban areas and focusing on key target populations.
Output 2.3: Improved water security and management to reduce drought risk through demonstrated rainwater harvesting technology and advancing costed integrated water management plans in Astara	**(LO)** National and local officials and communities will have enhanced knowledge on drought risks and rainwater harvesting technology and advancing costed integrated water management plans in Astara (Republic of Azerbaijan) **(I)** # of officials trained, disaggregated by gender. **(I)** # and types of infrastructure constructed, and	• A study on building climate resilient livelihoods building on how access to NBS and rainwater harvesting can build resilience in sectors such as agriculture, tourism and aquaculture as well as access to services, especially for families left behind by migrants in Astara • Rainwater harvesting demonstration sites for education and awareness accessible to local officials, school children and community members. • Public education campaign on water resource management locally. • Training materials on water resource management and developing costed adaptation plans. • Costed adaptation solutions for integrated water. • resource management based on future projections for water demand (based on urbanization and tourism) and water supply (based on climate change).

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	protective natural/social assets built/rehabilitated	
OUTCOME 3: Applied innovative climate change adaptation solutions upscaled to communities throughout Azerbaijan to reduce their vulnerability to climate change (capacity, partnerships, institutional, legal, research cooperation and knowledge exchange)		
Output 3.1: Public Awareness and Engagement Campaigns; Launch of campaigns to raise public awareness about the impacts of climate change and the importance of adaptation measures	**(LO)** National and local stakeholders as well as the general public is aware of climate change impacts **(I)** # number of people reached, disaggregated by gender	• Climate Change Awareness Toolkits: Comprehensive packages containing informational brochures, interactive materials, and educational tools. These would be designed to raise awareness of the general public about climate change impacts and the importance of adaptation measures. They could be tailored to different target groups, for different age groups and social segments. • Climate Resilience Storytelling Collection: A compilation of stories and case studies highlighting the real-world impacts of climate change on individuals and communities, as well as examples of successful adaptation measures. Storytelling can be a powerful tool to connect emotionally with audiences and drive home the importance of resilience efforts.
Output 3.2: Financial Strategy for Climate Adaptation: Creation of a comprehensive financial strategy to support climate change adaptation measures	**(LO)** National and local stakeholders are enabled to access finance to support climate change adaptation measures **(I)** # of people trained, disaggregated by gender	• Climate Adaptation Finance Guide: A detailed guidebook outlining various financial mechanisms and strategies to support climate adaptation projects. This guide would cover topics such as accessing public and private funding, leveraging international climate finance, and innovative financing models like green bonds and climate funds. • Case Studies on Successful Climate Adaptation Financing: A compilation of case studies showcasing successful examples of financed climate adaptation projects. These would provide practical insights into various funding models, challenges faced, and lessons learned in financing climate adaptation. • Training materials on developing and financing plans to address climate change impacts in urban areas and focusing on key target populations in Azerbaijani language. • Materials on peer-to-peer city learning and exchange workshops between locations within Azerbaijan. • Workshops, seminars and field visits materials on innovative and successful technologies and approaches used to build capacity on climate resilient livelihoods, on how access to Early Warning Systems, Water Harvesting and Nature Based Solutions can build resilience in sectors such as agriculture, tourism and aquaculture as well as access to services, and public space provision.

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H. Consultative Process

Establishing a proper consultative process is central to developing a more context-specific and appropriate response to the development needs of all key stakeholders, with special attention to communities and local population. In order to define the scope of the programme, various consultations have already taken place with key in Azerbaijan as well as with the Tehran Convention Interim Secretariat and scientific entities (November 2018 – December 2023).

A listing of all consultations at regional, national and local level is available in *Annex 4: Overview of Consultations, including Objectives, Outcomes and Conclusions*. The approach will be expanded during the implementation of the programme, including with national and local governments, the *Caspian Economic Forum*, the *Commission on Aquatic Bioresources (CAB), CASPCOM*, communities and civil society entities, regional think tanks, universities and academia, private sector and other relevant stakeholders, including development partners and United Nations Country Team, in order to refine the selection of target areas and respective interventions. Efforts will be made on consulting communities settled along the coastal belt and feeding rivers as well as their delta areas.

Gender parity has been encouraged for every consultation or working group. National and local consultation process revealed a high level of interest and willingness among vulnerable groups, including women to become involved in the programme's activities. Several consultations demonstrated many women participating when the proportion of female participants was equal to or higher than male. In addition, given the interrupted nature of the consultative process during the Covid-19 pandemic, the needs of vulnerable groups, including women, will be considered, and addressed in a refined way during the implementation stage.

Throughout the consultation process, the following approaches to gender-responsive consultations have been applied by the programme development team, regional and national consultants, effectively informing the design and targeting the implementation of the programme, ensuring that the unique needs and contributions of all genders are considered and integrated into the program's initiatives:

- Identification and engagement of women's groups, men, youth, community leaders, local authorities, and relevant government agencies.
- Ensuring representation from different socio-economic backgrounds, ethnicities, and geographic regions to capture a variety of perspectives.
- Awareness and capacity-building to educate participants about the importance of gender equality in climate adaptation. This helps participants understand how climate change impacts genders differently and encourages them to consider gender perspectives.
- Organization of focus group discussions, workshops, and public meetings in both urban and rural settings. Creation of a safe and inclusive environment where participants feel comfortable sharing their experiences and concerns related to climate adaptation.
- Adaptation of tools that facilitate gender-responsive discussions, encouraging participants to explore the different ways climate change affects men, women, and marginalized groups, as well as their roles in adaptation strategies.
- Gathering of sex-disaggregated data and qualitative information on climate impacts, vulnerabilities, and adaptive capacities, and analysis of data to understand gender-specific patterns and priorities for urban climate adaptation.
- Through continuous consultations, identify specific needs, challenges, and opportunities that different genders face in the context of climate adaptation. This can include access to resources, decision-making, livelihoods, and infrastructure.
- Work collaboratively with participants to prioritize adaptation solutions that address gender-specific vulnerabilities. Ensure that proposed solutions are practical, sustainable, and consider the unique needs of women, men, and other marginalized groups.
- Incorporate gender-responsive findings and recommendations into urban climate adaptation policies, strategies, and action plans. Advocate for the inclusion of gender considerations in all levels of decision-making.
- Establish mechanisms to monitor the effectiveness of gender-responsive strategies over time. Regularly assess whether adaptation measures are benefiting all genders equitably and make adjustments as needed.
- Share the outcomes of gender-responsive consultations widely with relevant stakeholders, policymakers, and the public to raise awareness about the importance of gender-inclusive approaches in climate adaptation.

The programme has been envisioned as a continuous engagement with stakeholders, starting from the initial stages of project formulation. This approach is intended to be consistently applied throughout the execution, including the monitoring and evaluation of diverse project initiatives. As a result, the ongoing consultations are expected to enhance the programme's methodology, thereby fostering a positive impact on the intended adaptation interventions.

- *Scope of Consultations:* The consultations aim to engage a wide range of stakeholders, including community members, local leaders, experts, government agencies, NGOs, and marginalized groups. These consultations will gather insights, perspectives, and local knowledge to comprehensively assess the vulnerabilities, needs, and capacities related to climate adaptation in urban area as well as potential impact of interventions.
- *Duration of Consultations:* The duration of consultations varies based on the complexity of the specific urban context, the number of target areas, and the depth of analysis required. The process will span over the entire period of the programme implementation, monitoring, and evaluation phase (4 years).

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Table 10: Summary of Consultations Proposal Development Stage

Regional, national and local dimension	Date	Stakeholder	Consultation Objective
Caspian Sea Region	Q.1 2020	UNEP Mediterranean Action Plan Priority Actions Programme Regional Activity Centre (PAP/RAC), Split, Croatia	PAP/RAC offers support to Caspian Sea littoral states on their path towards sustainable coastal development - Outlining of training programme for sector Ministries in Caspian Sea littoral states
	Q.1 2020	Regional Steering Committee	Familiarization of the Committee members with the programme and preliminary discussions
	Q.3 2020	Regional Steering Committee	Response to the previously received written comments - Agreement to share the more advanced draft Concept Note containing the information on the national interventions
	Q.2 2021	Regional Centre of Excellence in Split, Croatia – Mediterranean Sea on Integrated Coastal Zone Management Planning	Good Practices for Integrated Coastal Zone Management in the Mediterranean Region and adaptation to Caspian Sea Region Outlining of training programme for sector Ministries in Caspian Sea littoral states
	Q.3 2021	Regional Steering Committee	Refinement of programme implementation modalities Engagement of sector ministries in Caspian Sea littoral States
	Q.4 2021	Regional Steering Committee	Agreement on incorporation of comments of the stakeholders into the work plan
	Q.4 2021	Regional Steering Committee	Review of (draft) Project Proposal
	Q.4 2021	UNEP Mediterranean Action Plan Priority Actions Programme Regional Activity Centre (PAP/RAC), Split, Croatia	Good Practices for Integrated Coastal Zone Management in the Mediterranean Region and adaptation to Caspian Sea Region
	Q.1 2022	Regional Steering Committee	Agreement on list of impacts of the main identified climate change related hazards.
	Q.1 2022	Regional Steering Committee	Review of (final) Project Proposal and approval for submission
Azerbaijan	Q.3 2018 – Q.4 2020	Relevant Sector Ministries	Confirmation of the most vulnerable communities - Consultations on priority climate change adaptation interventions at community level
	Q.1 2019 – Q.4 2020	Relevant national government entities	Building awareness about project ideas and exploring areas of synergy Discussions on vulnerability criteria and site selections; discussion on potential interventions
	Q.1 – Q.3 2020	Private sector entities	Discussion about possible involvement; alignment with ongoing projects
	Q.3 – Q.4 2020	Research / Academia	Discussion about possible involvement; alignment with ongoing projects Outlining skills development programme for green and climate resilient jobs, in close collaboration with private sector and relevant ministries
	Q.3 2018 – Q.4 2021	United Nations Resident Coordinator Office and United Nations Country Team (including specific entities)	Alignment of Project Proposal with previous, ongoing and planned activities Lessons Learnt from similar programmes and projects Refinement of project implementation modalities
	Q.3 2020	National Steering Committee	Overview of the project for the stakeholders Refinement of project implementation modalities
	Q.4 2020	National Steering Committee	Discussion about problems of garbage collection in Baku and surrounding areas
	Q.1 2022	United Nations Resident	Alignment of Project Proposal with previous, ongoing and planned activities

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		Coordinator Office and United Nations Country Team (including specific entities)	Refinement of project implementation modalities
	Q.1 2022	United Nations Food and Agriculture Organization	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project
	Q.1 2022	United Nations Development Programme	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project
	Q.1 2022	Ministry of Ecology and Natural Resources of Azerbaijan	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project
	Q.1 2022	Neftchala ExCom, Neftchala	Discussion on the existing challenges in rayon from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities for the project
	Q.1 2022	Astara ExCom, Astara	Discussion on the existing challenges in rayon from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities for the project
	Q.1 2022	Ministry of Ecology and Natural Resources of Azerbaijan	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project
	Q.1 2022	Relevant Sector Ministries	Discussion on the existing challenges in the country
	Q.1 - Q.2 2022	Consultations with municipalities and local communities	Discussion on the existing challenges in rayon
	Q.2 2022	Neftchala District Executive Authority	Presentation and discussion of potential interventions at local level in Neftchala, as well as conduct a field assessment
	Q.2 2022	Baku City Executive Authority	Presentation and discussion of potential interventions at local level in Baku, as well as conduct a field assessment
	Q.2 2022	Astara District Executive Authority	Presentation and discussion of potential interventions at local level in Astara, as well as conduct a field assessment
	Q.3 2022	Relevant Sector Ministries	Presentation and discussion of potential interventions at local level in Neftchala, Baku and Astara and get feedback on intervention ideas, as well as to inform about next steps
	Q.3 2022	Ministry of Ecology and Natural Resources of Azerbaijan	To present and get feedback on intervention ideas, as well as to inform about next steps
	Q.3 2022	Municipalities and local communities	Discussion of potential interventions at local level
	Q.2/3 2023	Municipalities and local communities	Confirmation of proposed interventions at local level

I. Justification for Funding Requested

The programme components, outcomes and outputs fully align with 1) national and local government/ institutional priorities and gaps identified, with 2) identified community and vulnerable groups needs and 3) with the Adaptation Fund outcomes. This alignment has resulted in the design of a **comprehensive approach** in which the different components strengthen each other and in which outputs and activities are expected to fill identified regional and national gaps and target cities' current climate change response and corresponding institutional capacities. In fact, the selected interventions/ activities are directly confirmed and/ or proposed by the national, sub-regional and local governments and inhabitants of target communities through consultations, as reported in Part II.I above and Annex 4.

As detailed in Sections 1.2.3 and 1.2.4, sea level fluctuations, increased temperature, floods and droughts are adding pressure on the Caspian environment. Also, land use conversion and ecosystem

degradation combined with the pollution of land, water and air further compound the fragility of Caspian ecosystem. Funds requested from the Adaptation Fund will be used to address the climate change impacts by strengthen the capacity of decision makers in Azerbaijan to define enhanced climate change adaptation strategies at national level as well as implementation of transformative and catalytic projects at city and community levels in the selected target areas.

Without the implementation of actions promoted by the programme, it is expected that vulnerable communities will continue to suffer from the negative impacts of identified climate change hazards such as sea level fluctuations, increased temperature, floods and droughts. It is expected that the programme will serve as a catalyst to leverage other climate change adaptation actions and additional resources to scale up some of the proposed programme activities. **Component 1** improves the adaptive capacity at national level by collecting and sharing data and knowledge on climate change risks and vulnerability for the Caspian Sea and improving climate change adaptation coordination, planning and management and strategies in Azerbaijan. Currently the data and knowledge on climate change risks and vulnerability is limited and fragmented. Similarly, the region will benefit from coordinated adaptation planning and management. **Components 2** are fully aligned with national and local government/ institutional priorities and gaps identified with a clear and direct response to sea level fluctuation, droughts, heat waves, and floods as main climate hazards. The outcomes and outputs also align with needs of identified community and vulnerable groups (see Annex 2) and with the Adaptation Fund outcomes (see Part III. F). **Component 2** provides the enabling capacity and information needed for national decision makers to plan for, respond and finance climate change adaptation measures to address sea level fluctuation, droughts, heat waves, and floods, considering urban development in Azerbaijan. Apart from providing promising business opportunities and economic growth, investments under **Component 3** can substantially contribute to the current Azerbaijan context to reduce the need for continued development assistance and reconstruction and rehabilitation efforts after climate impacts.

Component 3 strengthens urban resilience, climate change adaptation – partnerships, institutional, legal, research cooperation and knowledge: The expected outcome is that coordination and knowledge sharing of data, information and capacity through national and local exchange for cross-fertilization and scaling up direct, local climate action in Azerbaijan is facilitated. Scaling up, and issues related to gender and to vulnerable groups will be deeply considered.

The programme is designed to enable and ensure strengthening of various workstreams under each component to fill identified gaps in Azerbaijan's current climate change response. The programme aims at maximizing the funding amount for the concrete adaptation component directly benefiting local communities. Funding allocation to the other (softer) components is required to support the effective execution and sustainability of those components and to share knowledge and lessons learned.

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J. Sustainability of the Programme Outcomes

Sustainability is paramount for the long-term impacts and benefits of the programme, beyond its implementation time frame. Hence, this programme will work on increasing institutional and communities' capacities and ownership, facilitating economic opportunities and financial mechanisms, and strengthening technical expertise.

Institutional sustainability:

The programme will pave the way for national and local government, but also vulnerable communities, in Azerbaijan, to replicate, up-scale and sustain 'tested' concrete interventions and develop strategic spatial and land use plans, by using the 'portfolio' of effective low-cost interventions, the 'urban lab' approach and by adjusting the institutional and legal framework, where necessary, to sustain an integrated coastal management approach. It is to be noted that investment sheets have been developed in close consultation with relevant government entities. For example, the development of a portion of the green corridor in Baku is part of the Hybrid Green Corridor Project of the 2020-2040 Master Plan for Baku. The interventions were jointly developed with the Ministry of Ecology and Natural Resources, and the Baku City Executive Authority. The completed Green Corridor Project will be maintained by the local authorities who are responsible for the upkeep of all public parks and gardens within the city. The same applies to the water conservation and recycling interventions in Astara.

Social sustainability:

By fully engaging communities, women, youth, and other vulnerable population groups in local level project activities, including, assessments (during the programme implementation phase), the development of plans/ strategies, and monitoring, the programme to achieve long-lasting awareness

and capacities of these communities. Besides that, target communities and households will be trained to construct and self-maintain the proposed interventions and to enhance their livelihood options in a sustainable and resilient way. Moreover, lessons and approaches will be shared and replicated among communities, also beyond the target areas and in other countries of the region.

It will be essential to support and increase women's participatory and leadership role in the implementation of adaptation measures in their communities. Women consultants can be engaged to maximize women's active participation if considered necessary. The programme will pursue and support gender equity and women's involvement in all activities through its adherence to direct stakeholder involvement in adaptation. The abundance of women-headed households also testifies in favor of a social request for the development of female leadership. The programme proposes the engagement of women and vulnerable groups as follows: Involvement of women and vulnerable population groups in community consultations on adaptation and community solutions – including migrants and seasonal workers residing in the areas;

- Engagement of women and vulnerable population groups directly through awareness-raising campaigns (such as water resources and climate effects, and etc.) and their inclusion in monitoring activities;
- Advocacy on the inclusion of women and youth with disabilities and other vulnerable population groups in target regions and for the activities related to adaptation; and
- Involvement of young girls and vulnerable population groups in target regions in technical training (on use of equipment and other instruments to be used by the programme).

Economic sustainability:

Investing in increasing adaptation in coastal areas, vulnerable assets and ecosystems is a sustainable economic approach. It will not only avoid future costs related to climate change and environmental hazard impacts, but it will also enhance and widen livelihood options. Besides that, spatial and land use plans that will embrace adaptation strategies will also help to avoid future costs related unsustainable urbanization trends (in particular, urban sprawl and leap frogging) and to climate change hazards by identifying the high-risk areas and sustain or open-up investment options in the 'suitable' areas.

Environmental Sustainability:

The protection and or enhancement of ecosystems will be sustained through spatial and land use (as well as environmental protection) plans and other institutional and legal adjustments where needed. At the community level, awareness raising campaigns and training related to ecosystem protection and revenue-generating activities will support the sustainability of ecosystem-related interventions.

Financial sustainability:

This programme is designed to identify and replicate low-cost solutions with nature coastal protection and livelihood enhancement interventions. Through the spatial and land use plans (with identified high and low-risk areas) governments and the private sector will be able to develop business cases for focused protection and development of priority areas. Besides that, the institutional and legal framework will allow and promote interventions where they are more needed. Identified investments aim to either develop a portion of a wider plan (e.g., Baku), enhance existing infrastructure (e.g., Neftchala), or improve the rational use of water (e.g., Astara). The investment sheet for Baku also plans to develop an investment plan based on blended finance in consultation with the public and private sectors as well as develop capacities on green financing.

Technical sustainability:

The 'portfolio' of interventions will be attractive for national and local governments and communities because solutions will be low-cost and nature-based dimensions for coastal protection. Besides that, interventions will consider building back better principles. This will enhance durability and sustainability significantly. Besides that, the proposed interventions will be maintained in partnership with local governments, public utilities, and communities. For example, the investment in rainwater harvesting in Astara, including the specifications of the equipment, has been jointly developed with the Ministry of Ecology and Natural Resources and the Astara Executive Authority. This will ensure that after the programme is completed, interventions are properly maintained and remain in operation.

Replicability and going to scale:

The realization of these types of initiatives aims to influence current planning approaches and to be replicated by local authorities and/or the private sector in other locations of need. Furthermore, UN-Habitat and its partners intend to leverage the results and lessons learned from this programme to

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explore opportunities to go to scale in other cities – including in the new settlements that are being planned in the liberated areas, hence contributing to their sustainable recovery and enhancing urban-rural linkages across the country.

K. Environmental and Social Impacts and Risks

The proposed programme with its components seeks to fully align with the *Adaptation Fund's Environmental and Social Policy (ESP)* as well as its *Gender Policy (GP)*. For the programme development, programme components and activities have been screened to identify potential environmental and social risks and impacts using the **15 Adaptation Fund Principles** as well as **UN-Habitat's 9 Environmental and Social Principles**, and two cross-cutting themes, which make up the **UN-Habitat Environmental and Social Safeguards Systems**. The overall programme risk category is assessed as Category C. More details on the risk categories per the components are provided below. For the potential risks and impacts identified, mitigation measures have been proposed. This full assessment is provided in Annex 6. Compliance will be ensured throughout the implementation of the project and monitoring of safeguards, especially for the concrete interventions under **Component 2** will be undertaken. **Components 1 and 3** are categorized as Category C given that the focus is on data, knowledge, capacity and coordination and does not require physical interventions in the communities. However, the environmental and social principles which the safeguards promote – especially for gender equality and women's empowerment, protection of natural habitats, biodiversity conservation, access and equity, marginalized and vulnerable groups, and climate change – will be considered in any guidelines, recommendations, studies, planning or capacity building efforts to ensure these principles are consistently espoused and applied.

All physical works activities in the project will be undertaken under **Component 2**. These activities carry the risk of causing environmental and social impacts. As the activities implemented under the project will be local and small scale, it is deemed that they are not 'Category A' risks. All activities implemented under Component 2 are, therefore, Category B. The table below shows which outputs have risks aligned with the **Adaptation Fund's Environmental and Social Principles** as well as the summary of the assessment and screening for the impact should the intervention violate the environmental and social principles and the likelihood of this happening. Based on this screening on a scale of 1-5, with 5 being the highest, the combined score is then used to assess the significance with 8-10 assessed as high, 5-7 as medium and 2-4 as low. Annex 6 has a full assessment of safeguards risks for both Adaptation Fund and UN-Habitat.

Table 11: Programme Screening and Categorization of the Adaptation Fund's Environmental and Social Principles

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	No further assessment required	
Access and Equity		Given that benefits from the programme will not be distributed to the entire city but rather only demonstration sites in Baku and Astara, hence unequal distribution of benefits is possible. Further assessment and management required for compliance
Marginalized and Vulnerable Groups	No further assessment required	
Human Rights		The proposed interventions should not violate any human rights however it would be difficult for the interventions to actively promote human rights. Further assessment and management required for compliance.
Gender Equality and Women's Empowerment		It is not foreseen that the interventions would have a negative impact however the second question is on any form of discrimination against girls and women and given the low gender parity rankings in the country, there is certainly this risk. Further assessment and management required for compliance.

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Core Labour Rights	No further assessment required	
Indigenous Peoples	No further assessment required	
Involuntary Resettlement	No further assessment required	
Protection of Natural Habitats	No further assessment required	
Conservation of Biological Diversity	No further assessment required	
Climate Change	No further assessment required	
Pollution Prevention and Resource Efficiency		Output 2.1 will need to involve remediation of soil where former rail lines were in place and have been in disuse; Output 2.1 may use fertilizers and will involve planting of new flora. Further assessment and management required for compliance.
Public Health	No further assessment required	
Physical and Cultural Heritage	No further assessment required	
Lands and Soil Conservation	No further assessment required	

The requirement for an *Environmental Impact Assessment (EIA)* for Component 3 of the programme proposed for Azerbaijan - particularly for the development of green corridors, public space, and improved water management practices – aligned to the specific regulations and policies in Azerbaijan. In Azerbaijan, EIAs are typically required for projects that are likely to have significant environmental impacts. The *Law of the Republic of Azerbaijan on Environmental Impact Assessment (2007)* establishes the legal framework for conducting EIAs. The law covers a range of projects, including those related to land use changes, construction, infrastructure development, and natural resource management. For green corridor, public space, and water management initiatives, an EIA may be required if the proposed projects meet the criteria specified in the national regulations. Factors such as the scale, location, potential impacts on ecosystems, and alterations to water bodies will influence whether an EIA is necessary. It is important to note that there might be additional regulations, guidelines, and procedures that further clarify the circumstances under which an EIA is required. To determine whether an EIA is necessary for your specific urban climate adaptation initiatives, the programme will:

- Seek advice from legal experts who are knowledgeable about environmental regulations in Azerbaijan, hereby assisting with guidance on the relevant laws and regulations.
- Closely collaborate with environmental agencies or relevant government departments in both countries to inquire about EIA requirements for the proposed initiatives.
- Evaluate scope, scale, and potential environmental impacts of the initiatives to determine whether the projects are likely to trigger EIA requirements.
- Engage with local communities and stakeholders to gather input and assess potential concerns related to the projects.
- Even if not legally required, the programme aims to conduct a voluntary EIA to ensure that the programme aligns with best environmental practices and receives public input. This is considered to establish a good practice in conducting urban climate adaptation programming.

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PART III: IMPLEMENTATION ARRANGEMENTS

A. Arrangements for Programme Implementation

This section elaborates on the implementation arrangements of national and local components of the programme as well as the upscaling. In the spirit of One UN, the three organizations, UN-Habitat, UNEP, and IOM, lead the execution of the programme which includes designated responsibility for the assigned components, ensuring programme impacts, delivery of products, and take accountability for the programme expenditures.

Accountability to the donor will be ensured by UN-Habitat as the accredited Multilateral Implementing Entity and signatory of the contract. UN-Habitat is the Implementing Entity of the programme.

The Executing Entity for Component 1 is UNEP. In Azerbaijan, UN-Habitat and IOM are the Executing Entities for Component 2. Component 3 is implemented jointly by UN-Habitat, UNEP and IOM.

The oversight of UN-Habitat, UNEP and IOM will work closely to ensure that all gathered programme impacts, products and data are transited to the AF on a regular basis. The programme will closely collaborate with the United Nations Resident Coordinator Office (RCO). Moreover, the programme will closely coordinate with the Azerbaijan United Nations Country Team (UNCT) and collaborate with specific relevant UN agencies, such as the United Nations Development Programme (UNDP) and the Food and Agriculture Organization of the United Nations (FAO).

Table 12: Executing Entities and Legal Agreements

Executing Entity	Component 1: National level	Component 2: Local Level	Component 3: Upscaling
Azerbaijan	UN-Habitat, and IOM (UN-to-UN Transfer Agreement*)	IOM (UN-to-UN Transfer Agreement*)	UN-Habitat, UNEP and IOM (UN-to-UN Transfer Agreement*)

reference: https://unsdg.un.org/resources/un-un-transfer-agreement

For the management of the programme and the respective components, the following office arrangements will be established:

- *Overall programme management:* UN-Habitat Country Office, Baku, Azerbaijan;
- *Component 1 – national level:* UN-Habitat Country Office, Baku, Azerbaijan and UNEP in Baku, Azerbaijan and Geneva, Switzerland;
- *Component 2 – local level:* UN-Habitat and IOM offices in Baku, Azerbaijan; and
- *Component 3 - upscaling:* UN-Habitat Baku, Azerbaijan; UNEP in Baku, Azerbaijan and Geneva, Switzerland; IOM office in Baku, Azerbaijan.

The programme office for this initiative will be based at the UN-Habitat project office in Baku, Azerbaijan, which was established in May 2023, and closely coordinate with UNEP and IOM as Executing Entities. The programme will leverage the existing networks and resources available in Azerbaijan and the resources of the team by hiring further technical staff that would oversee the implementation and monitoring of the national and local components of the programme.

Programme Governance Structure

As a mechanism for guiding the programme implementation and for monitoring of progress, one overall **Programme Advisory Committee** (PAC) and one **Technical Advisory Committee** (TAC) for internal coordination and implementation purposes will be established.

- *Programme and Technical Advisory Committees:*

The programme will be guided by a Programme Advisory Committee (PAC) comprising of a representative from the Ministry of Ecology and National Resources, the State Committee for Urban Planning and Architecture (SCUPA), UN-Habitat, UNEP, IOM, and other relevant stakeholders (research community, academia, civil society, private sector). Efforts will be made to ensure that the committees offer equal or near to equal men and women representation. While the Azerbaijan

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designated authority to the Adaptation Fund acts as the chair of the PAC, a senior official from SCUPA will act as a co-chair. The Programme Manager will represent the secretariat function. The chair and co-chair of the PAC will be able to recommend additional participants, based on the suggestions by the PAC. The PAC will provide adaptive management guidance based upon programme progress assessments and recommendations from the Programme Management Unit (PMU). The PAC will review and approve annual programme reviews and workplans as well as technical documents. Moreover, the PAC will provide general strategic and implementation guidance to the PMU. At minimum, it will meet annually, make consensus-based recommendations. The PAC roles are as follows:

- Review of project proposals;
- Provide technical and operational input to the implementation of the programme;
- Discuss and propose draft strategies developed within the framework of the programme;
- Endorse final reports (deliverables) from experts and consultants;
- Approve (Annual) Programme Workplan and any changes thereto, in accordance with UN-Habitat, UNEP, IOM and AF guidelines;
- Review programme activities to assess progress, and review Progress Reports;
- Ensures compliance with the Adaptation Fund Gender Policy, and acts as a gender focal point;
- Review deviations and suggest amendments to workplans and contractual arrangements; and
- Any other issues brought before the PAC by one of its members.

The Programme Manager will closely coordinate the programme with the PAC, in terms of overall programme and programme coordination, endorsing of national and local level programme components, implementation of activities and monitoring of those as well as highlighting lessons learnt from programme activities. The PAC members will closely coordinate with national ministries and revert to policy makers for upscaling of lessons learnt from the programme components in Azerbaijan. It will identify the relevant national partners for programme activities, capacity building measures and peer-to-peer exchanges. Moreover, the PAC will foster potential partnerships of the programme with regional institutions and other key stakeholders. Detailed Terms of Reference will be drafted at the commencement of the regional programme.

- *Programme Management Unit (PMU):*

UN-Habitat, UNEP and IOM will establish a joint Programme Management Unit (PMU), comprising of all relevant managerial, technical and administrative personnel, supported by consultants (international, regional and local). The composition of the PMU is presented in Figure 18. The PMU will support the three agencies equally and be accountable to them. The PMU will manage and coordinate the day-today operations of the programme activities, including issuing necessary institutional agreements and contracts, arranging necessary travels, organizing meetings and communicating with national and local stakeholders. Furthermore, the PMU will prepare all necessary progress, review and financial reports to be submitted to PAC and Technical Advisory Committee (TAC), AF as well as national and local governments in Azerbaijan. Further, the PMU will prepare the necessary documents to be submitted to and considered by the PAC such as draft annual workplans and budget expenditure. The PMU will also be responsible for managing non-expendable equipment and expendable resources for the programme.

The PMU comprises of all managerial, technical, administrative and financial staff relevant to the implementation of the national and local project components implemented in Azerbaijan.

- *Overall Programme Management:*

The overall programme management comprises of a Programme Manager (P4), a Programme Assistant (national), technically supported by a Monitoring & Evaluation and Communication Officer. Moreover, the project will be supported in the overall programme management by an 'UN-Habitat headquarters'-based Programme Management Officer (P3), supported by a Baku-based Administrative Assistant (G5). The PMU is supported by Programme Management/ Logistic Assistants as well as Community/ Filed Officers.

The overall management will be conducted by a full-time Programme Manager with a strong technical background in the environment, climate change and urbanization fields and knowledge of country level United Nations operations, supported by a national Programme Assistant knowledgeable about the national environment and climate change as well as urbanization dimensions. A Technical and Management Team will provide essential result-based management support. It comprises of national personnel such as a Programme Assistant, a Monitoring & Evaluation and Communication Officer as

well as a Programme Management/ Logistic Assistant. The programme will be implemented in close collaboration with the UN Resident Coordinator and the UN Country Team in Azerbaijan.

The Programme Manager will closely coordinate the programme with the TAC. The main engagement of the TAC will be on programme coordination, endorsing national level programme components, implementation of local initiatives and monitoring of those as well as highlighting lessons learnt from project activities for upscaling at regional level. The TAC will closely coordinate with the PAC, particularly regarding environment, climate change and urbanization fields as well as with respective national ministries among the various countries and revert to policy makers. It will identify the relevant national partners for regional project activities, capacity building measures and peer-to-peer exchanges. Moreover, the TAC will foster potential partnerships of the programme with national institutions and other key stakeholders. Detailed Terms of Reference shall be drafted respectively.

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National and local programme activities will be supervised and coordinated by UN-Habitat, IOM and UNEP, in close collaboration with the RCO and UNCT in Azerbaijan. All entities will engage their substantive colleagues at headquarters, regional and country level. UN-to-UN Transfer Agreements will be signed at the onset of the programme implementation stage.

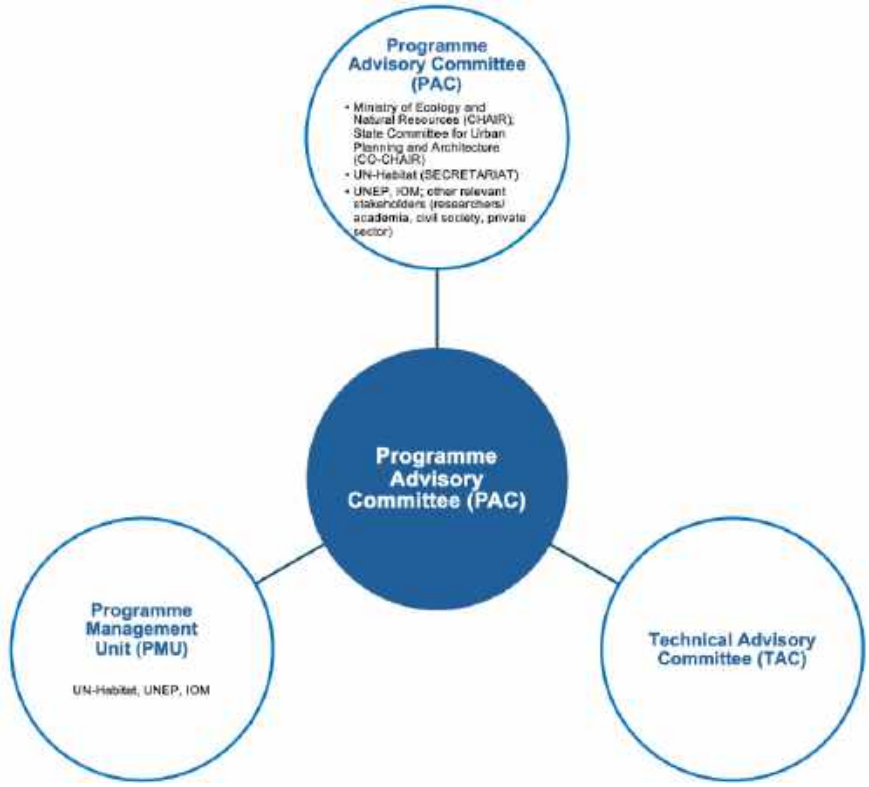

Figure 18. Overview of Implementation Modalities

Considerations for gender-responsive Programme Committees

In Azerbaijan, assembling a gender-responsive PAC and TAC is crucial. This involves carefully considering the socio-cultural context to achieve equal representation and meaningful participation of all genders. A continuous analysis of socio-cultural norms and barriers to gender equality is needed to adapt programming approaches and address specific challenges effectively. The programme will promote Gender Equality Policies by advocating for and implementing gender equality policies and initiatives at the organizational and governmental levels. Ensure that relevant laws and regulations support the inclusion of diverse genders in decision-making bodies like PAC and TAC. In addition, the following approach ensures the promotion of gender equality and inclusive decision-making:

- Conduct awareness campaigns and training sessions to sensitize stakeholders about the importance of gender-responsive committees. This will help challenge stereotypes and biases and encourage more inclusive participation.
- Actively seek to include a diverse group of members in PAC and TAC. Make efforts to include women, men, and individuals from diverse ethnicities, and backgrounds to ensure multiple perspectives and experiences are considered.
- Implement a transparent and fair nomination and selection process that encourages the participation of qualified individuals from all genders. Avoid biases in the selection process and ensure that potential committee members are evaluated based on their expertise and qualifications.
- Provide capacity-building programs to potential committee members, especially women and other underrepresented genders, to enhance their skills and confidence in contributing effectively to the committees.
- Recognize that some gender-related responsibilities and societal expectations may impact women's ability to participate in committee meetings. Offer flexible meeting schedules and virtual participation options to accommodate diverse needs.
- Encourage inclusive decision-making within the committees, ensuring that all members have an equal voice and opportunities to contribute.
- Collaborate with civil society organizations and NGOs working on gender equality and women's empowerment to support the formation and functioning of gender-responsive committees.
- Regularly monitor and evaluate the performance of the committees in terms of gender responsiveness. Use the feedback to make necessary adjustments and improvements.

B. Measures for Financial and Programme Risk Management

Under guidance of the Programme Manager, supported by the Monitoring and Evaluation Officers will monitor the status of financial and programme management risks, including those measures required to avoid, minimize or mitigate these risks, throughout the programme. The table below indicates potential risks, likelihood and impact.

Table 13: Overview of Financial and Management Risks and Mitigation Measures

Potential Issues	Likelihood (1-5)	Impact (1-5)	Mitigation Measures	Indicator to verify
Institutional				
1. Delay of programme start-up because critical staff is not in place and/ or lengthy contracting process, incl. negotiations with execution entities	3 – medium	3 – medium	Staffing table and recruitment strategy outlined with concrete timelines to avoid delays in commencing the programme	Existence of recruitment strategy (y/n)
2. Loss of Government support for programme and activities due to elections and related functions due to lack of prioritization of AF project activities or different pace of execution of activities	1 – Low	3 – medium	Technical staff at execution level in sector ministries and local governments to be engaged in all aspects of programme development and implementation; utilize role of UNRCO and UNCT in ensuring consistency of programme implementation.	Core programme implementation functions and role of PAC outlined (y/n) National Technical Experts engaged in programme team (y/n)
3. Lack of coordination between and within national	2 – Low	3 – medium	TAC to address coordination of sector ministries towards	Terms of Reference for TAC outline coordination

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government ministries and departments and local governments			enhanced collaboration to achieve expected accomplishments.	mechanisms and indicate mitigation measures (y/n)
4. Capacity constraints of executing entities, local institutions, communities and the private sector may limit the effective implementation of interventions	1 – Low	3 - medium	UN agencies identified as executing entities based on capacity assessment with technical experience in executing similar sized thematic projects	Capacity assessment addresses constraints of executing entities(y/n)
5. Communities may not adopt activities during or after the AF programme, including infrastructure maintenance	2 – Low	4 – High	Identify potential threats to adoption challenge in sustainability strategy for climate change adaptation measures to address livelihood dimension and maintenance components.	Sustainability strategy outlines sustainability of livelihood generation and maintenance components for climate change adaptation interventions at community level (y/n)
Financial management and Requisite Institutional Capacity				
6. Complexity of financial management and procurement. Administrative processes could delay the programme execution or could lack integrity or needed capacity.	2 – Low	2 – Low	Challenges to delay of programme execution to be assessed at the onset of programme implementation and measures adopted in financial management and procurement strategy.	Financial management and procurement strategy outlines mitigation measures for potential implementation challenges (y/n)
7. Inflation and instability of the national currency leading to budget issues and increased prices for infrastructure delivery.	3 – Medium	1 – Low	Monitoring of potential threats to stability of national currency as part of the UN Development System, systemic response to this challenge recommended.	Financial management and procurement strategy
Environmental				
8. Habitat Destruction	3 – Medium	1- Low	Use native plants for landscaping to support local biodiversity.	Terms of Reference of the planned interventions.
9. Waste Generation	3 – Medium	1- Low	Properly segregate and dispose of construction waste. Use materials efficiently to minimize waste	Terms of Reference of the planned interventions.
10. Greenhouse gas emissions from construction activities and energy use	2- Low	1- Low	Incorporate renewable energy sources and use low-carbon materials	Terms of Reference of the planned interventions.

C. Measures for Environmental and Social Risk Management

The proposed programme seeks to fully align with the *Adaptation Fund's Environmental and Social Policy (ESP)*. For that purpose, environmental and social risks and impacts of the programme and related activities need to be identified and addressed (so that the programme does not unnecessarily harm the environment, public health or vulnerable communities).

To ensure that remaining risks are well managed the programme management and governance (Part III. Section A), Monitoring and Evaluation (Part III. Section D) fully considers the management of environmental and social risks. The *Environmental and Social Management Plan (ESMP)* in Annex 6 has been developed to ensure full compliance with the *Adaptation Fund's Environmental and Social and Gender Policies.*

The ESMP for this programme, detailed in Annex 6, identifies measures and actions that reduce potentially adverse environmental and social impacts to acceptable levels. The plan includes compensatory measures, if applicable. Specifically, the ESMP.

- Identifies and summarizes all anticipated adverse environmental and social impacts in line with the Adaptation Fund's ESP principles;
- Describes mitigation measures, both from the perspective of mitigating risks at each activity and from the perspective of upholding all ESP principles;
- Describes a process which supports the screening and assessment of all programme activities and the conditions under which screening and mitigation action is required;

- Clearly assigns responsibilities for screening, assessment, mitigation actions and, approval and monitoring;
- Takes into account, and is consistent with, other technical standards required for the programme in particular those that relate to national law.

It should also be noted that each investment that forms a part of **Component 2** has been designed to provide environmental and social benefits, based on the *Environmental and Social Policy of the Adaptation Fund*.

For the activities under the three components of the programme, the ESP will be upheld by ensuring that:

- All UN-to-UN Transfer Agreements, MoUs and Agreements of Cooperation with the Executing Entity will include detailed reference to the ESMP and the 15 ESP Principles.
- The PAC and TAC ToR, programme personnel and focal points will include detailed reference to the ESMP and in particular the 15 ESP Principles.
- The Executing Entity and other relevant government agencies will receive training / capacity development to understand the 15 Principles, the ESMP and their responsibilities.
- A Monitoring and Evaluation Framework will be developed by the PMU and presented for approval to the PAC.
- All programme monitoring will have the 15 environmental and social principles, and the ESMP Strategy mainstreamed into it. In addition to upholding the ESP of the Adaptation Fund and to familiarize all programme stakeholders with the 15 ESP principles, this will also ensure that all stakeholders fully take ownership of the environmental and social safeguards procedures of the programme and that any activity that may have been altered or not yet assessed in detail are captured.
- A grievance mechanism is also part of the plan. This will allow any affected stakeholder to raise concerns, anonymously if they wish, to the community leaders on the local coordinating committee, and the programme team. The primary alternative means for affected beneficiaries and/or community members to raise grievances confidential via telephone number. In addition to the grievance mechanism, local staff will be trained to have an 'open-door' policy with communities, so that communities can discuss any aspect of the programme at any time. This less formal mechanism will also enable programme staff to listen to communities' concerns or ideas and promote them in the implementation of the programme. More formal consultations and workshops held at local and national levels throughout the programme implementation will also serve as a means for stakeholders to raise concerns or make suggestions with regards to the programme implementation.

Monitoring and Evaluation Arrangements

The Monitoring and Evaluation (M&E) arrangements for this programme will be in compliance with the *Adaptation Fund M&E Guidelines* as well as the *Environmental and Social Policy (ESP)* and *Gender Policy (GP)*. Moreover, it will follow the principles for M&E as outlined in *UN-Habitat's Evaluation Policy (2013)* and *Evaluation Manual (2018)*. They adhere to the UN system standards and norms for evaluation, which are in line with the OECD/DAC (Organization for Economic Co-operation and Development/Development Assistance Committee) criteria for evaluation.

Based on the *Adaptation Fund Results Framework* and *Theory of Change*, the programme will establish a **M&E Framework and Plan**, with M&E programme components, including the following key considerations:

- Baseline data and targets;
- Programme and milestones;
- Financial data;
- Procurement data;
- Risk assessment;
- ESP compliance;
- GP compliance;
- Programme and project indicators; and

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- Lessons Learnt.

The M&E of progress in achieving programme results will be based on targets and indicators. The M&E Framework takes into account the early stages of implementation of the programme and respective national and local components. There are three levels of evaluation recommended:

- *Annual Programme and Project Performance Reports (PPRs)* will include a section on the status of implementation of any *Environmental and Social Management Plan*, including those measures required to avoid, minimize or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary.
- *Mid-term Evaluation:* As the programme is envisaged to be implemented over the period of 4 years, a Mid-term Evaluation will be conducted after the completion of the second year. It will be conducted by an independent team of consultants (composed of international and national experts) who will critically assess the initial outputs and results of the programme and respective components. This will enable an assessment of the quality of programme implementation and fine-tuning of on-going and remaining activities if needed. Any major changes to the objectives and expected outcomes of the programme or required budget revisions will be communicated to the AF Secretariat.
- *Final Evaluation:* The programme will conduct a Final Evaluation after the end of its implementation. The evaluations will be undertaken independent of programme management. It will assess at a minimum, the following: (1) achievements of programme outcomes; (2) evaluation of risks to sustainability; and (3) processes influencing achievement of results, including financial management. Moreover, the Final Evaluation will include an evaluation of the programme's performance with respect to environmental and social risks. The cost of Mid-term and Final Evaluations will be covered by the programs M&E Framework. UN-Habitat will ensure timely and high-quality M&E by keeping oversight of the process and providing guidance to the programme Execution Entities and national government partners through full briefings of M&E requirements. Where possible, the M&E process will be participatory, involving key stakeholders at national, local and community levels – including women at all levels, including in leadership positions. M&E missions will interview women from the affected communities and other stakeholder groups to ensure that their opinions and feedback are heard and incorporated in the reporting. Where necessary, women will be given a separate space where to express themselves more freely. Programme activities will be monitored and endorsed by the PMU and comply with the AF ESP and GP. Audits of the programme financial management will follow AF regulations and rules and applicable audit policies. The M&E Plan will be implemented as proposed in the table below.

Table 14: Monitoring and Evaluation Plan

Type of M&E activities	Responsible Parties	Time Frame	Budget
Inception Meeting and PAC/ TAC Meetings	Programme Manager, Programme Team, UN-Habitat	Inception meeting within first 3 months, annual PAC and biannual TACs	Inception meetings: national – in person (2.990 USD); PAC/ TAC – online/ in person (9.600 USD)
			Sub-Total: 12.590 USD
Direct Programme Monitoring and Quality Assurance, including progress and financial reporting, and risk management	Programme Manager, Programme Team, UN-Habitat	Quarterly, half-yearly and annually as needed	In addition to Monitoring and Reporting Officer renumeration (including translation, layout and publishing); quarterly report (7.000USD); annual report (2.600 USD)
			Sub-Total: 9.600 USD
Compliance with ESP and GP	Programme Manager, Programme Team, UN-Habitat	Annually	In addition to Monitoring and Reporting Officer renumeration (Including translation, layout and publishing); annual report (14.400 USD)
			Sub-Total: 14.400 USD
Audits	Programme Manager, Programme Team, UN-Habitat	Annually at year end	Conducted by AF, supported by UN-Habitat HQ
			Sub-Total: not applicable
Mid-term and Final evaluations	Programme Manager, Programme Team, UN-Habitat, External consultants	At midpoint and then no later than 3 months upon	Mid-term evaluation: (15.000 USD); final evaluation (30.000 USD)
			Sub-Total: 45.000 USD

		termination of the programme	
Community consultations/ workshops/ trainings	Programme Manager, Programme Team, UNEP/ IOM/ UN-Habitat	Quarterly, half-yearly and annually as needed	As part of ongoing pilot initiatives **Sub-Total: not applicable**
Visit to field sides	Programme Manager, Programme Team, UNEP/ IOM/ UN-Habitat	Quarterly, half-yearly and annually as needed	As part of ongoing pilot initiatives **Sub-Total: not applicable**
			Total: 81.590 USD

For the M&E budget and a breakdown of how implementing entity fees will be utilized in the supervision of the M&E function, please see the detailed Budget (Part III). For related data, targets and indicators, please see the programme proposal Results Framework (Part III).

Participatory monitoring mechanisms (involving different levels of government and communes) will be put in place for the collection and recording of data to support the M&E of indicators. The programme formulation has gathered demographic data (some of which is in this public domain) and generated maps through Google Maps and Google Earth, which will be handed over to the PAC for use in the programme, including in monitoring.

The communities will be involved in further data collection and in community consultations in data analysis. This will allow beneficiary communities to work directly with the programme 's M&E mechanism, to highlight issues in programme delivery and to strengthen adaptation benefits, including in replication and sustaining the programme 's gains. Data collected will include marginalized groups (e.g., women) aggregated (if possible). Programme site visits will be jointly conducted based on an agreed schedule to assess programme progress firsthand.

The Programme Manager will develop an **M&E Plan** during the programme's inception phase, which will be distributed and presented to all stakeholders during the initial workshop. The emphasis of the M&E plan will be on (participatory) outcome/result monitoring, programme risks (financial & programme management risks and environmental social safeguard risks) and learning and sustainability of the programme. Periodic monitoring will be conducted through visits to the intervention sites. UN-Habitat will ensure that all executing partners are fully briefed on the M&E requirements to ensure that baseline and progress data is fully collected and that a connection between the knowledge management component and M&E is established. The Agreement of Cooperation will also reflect these.

An **Annual Programme Performance Review (PPR)** will be prepared to monitor progress made since the programme's start and for the previous reporting period. The PPR includes, but is not limited to, reporting on the following: progress on the programme's objective and outcomes – each with indicators, baseline data and end of programme targets (cumulative); programme outputs delivered per programme outcome (annual); lessons learned/ good practice; Annual Work Plan and expenditure; annual management; environmental and social risks (i.e. status of implementation of ESMP, including those measures required to avoid, minimize, or mitigate environmental and social risks. The reports shall also include, if necessary, a description of any corrective actions that are deemed necessary; and programme financial and management risks (same as per above). The **reports** that will be prepared specifically in the context of the M&E plan are: (i) M&E plan; (ii) programme inception report; (iii) the annual-, and terminal programme performance reports, and (iv) the technical reports. For the **M&E budget and a breakdown** of how implementing entity fees will be utilized in the supervision of the M&E function, please see the detailed budget (Part III. Section G). For related **data, targets and indicators**, please see the programme proposal Results Framework (Part III, Section E).

To **monitor the status of financial and programme management risks**, it is important to have a systematic and ongoing process in place. The following steps are suggested:

- Identification of financial and programme management risks, including the potential financial and programme management risks associated with a programme (i.e. budget and/ or cost overruns, delays, and unanticipated expenses).
- Development of risk management plan, including assessment of likelihood and impact of each identified risk, as well as strategies for mitigating or managing each risk.
- Establishment of monitoring and escalation procedures, including regular reporting and monitoring processes to track status of each risk, and defining escalation procedures for when a risk exceeds predetermined threshold.

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- Monitoring of risks on a monthly and/ or quarterly basis, reviewing status of each risk and recommend necessary adjustments to risk management if required.
- Escalation of risks when a risk exceeds predetermined threshold, escalation procedure to be triggered, and appropriate parties notified. This may involve updating key stakeholders, modifying programme plan, or seeking additional resources to address risks.
- Documentation of risk management activities, including monitoring and escalation procedures to ensure accountability and transparency.

The programme's dedicated **Monitoring and Evaluation Officers** will be based both within the implementing entity overseeing the overall programme implementation at country and local level. Not only will they monitor the progress of programme implementation and financial expenditure, but they will also monitor the status of financial and programme management risks (with relevant colleagues from field operations, regional and headquarter levels). The latter is conducted in close coordination with the overall Programme Manager and respective component leads.

- M&E Officers work closely with the PMU and relevant stakeholders to identify and assess financial and programme management risks. This involves conducting risk assessments, analyzing historical data, and using risk management tools to understand the potential impact of various risks.
- The frequency of risk monitoring varies based on the nature and complexity of the programme implementation. However, regular reviews are conducted and updates to keep track of risk status. maintained. Quarterly reviews are prepared for reference and monitoring purposes (more frequent or less frequent intervals may be appropriate depending on the particular risk profile).
- M&E Officers use risk registers or risk tracking systems to log and monitor identified risks. A risk register captures details about each risk, including its description, potential impact, likelihood of occurrence, mitigation measures, and responsible parties. In close coordination with the Programme Manager and programme component leads, M&E Officers establish escalation channels to report significant risks or issues that require immediate attention. The escalation process involves reporting to higher levels of management. The escalation channels are well-defined and communicated to all relevant stakeholders to ensure a prompt response to critical risks. M&E Officers work closely with the Programme Manager throughout the programme lifecycle. They collaborate to integrate risk monitoring and evaluation into the overall programme management process. This ensures that risks are continuously assessed, addressed, and that necessary adjustments are made as the programme progresses.
- Since financial risks are a critical aspect of overall programme risks, M&E Officers work closely with the finance and accounting departments. They share information about financial risks, budget status, and financial performance to gain a comprehensive understanding of the programme's financial health. M&E Officers prepare regular reports for programme stakeholders, management, and donors. These reports include updates on the status of identified risks, any changes to risk assessments, and actions taken to mitigate or address risks.

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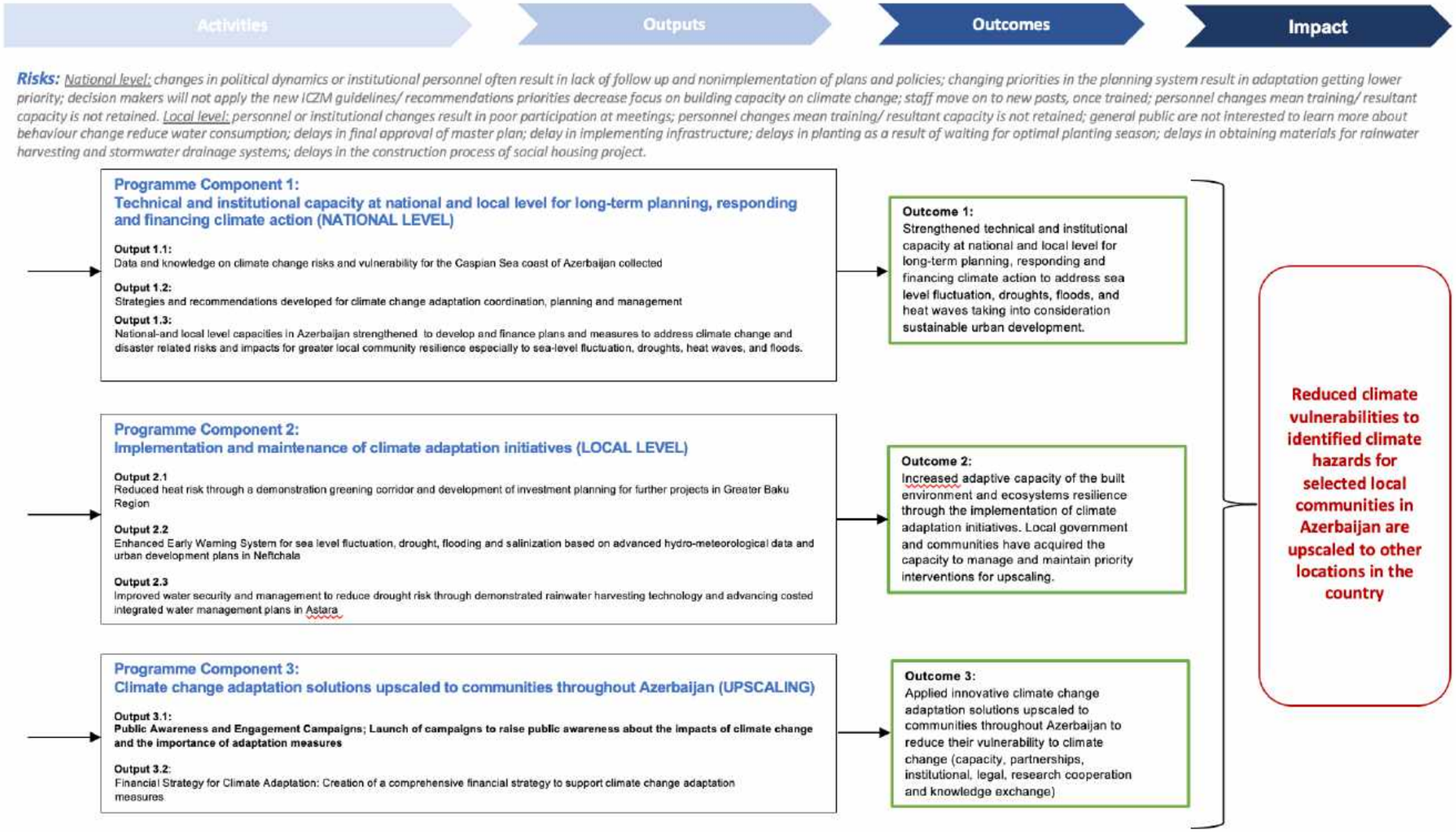
D. Results Framework

Theory of Change



Assumptions: *Commitment of implementing partners, decision makers and key stakeholders; capacity, skills and networks of implementing and executing partners; decision makers' knowledge on ICZM is increased and they apply them on regional and national level. National level: support of the national and city government for implementation of demonstration sites; continued political support and cooperation; sustained engagement and interest by key ministries on climate change; potential attention to the value chain and life cycle of proposed climate adaptation solutions; interest by general public to learn more about climate change risks to water security and apply behavioural changes; staff remain in place to be able to implement trainings. Local level: sustained interest by local authorities in the project; support of the national and city government for implementation of demonstration site; continued willingness exists to plan for and implement climate change adaptation; capacity at local level to convert hydrometeorological data into early warning communications; focus on affordable and locally adapted solutions; Agreement of Cooperation will stipulate timeframe for implementing infrastructure.*

Results Framework

Table 15: Detailed Results Frameworks of the programme

Expected Results	Indicators	Baseline data	Targets	Means of Verification (when and how)	Risks & Assumptions	Frequency	Responsibility
Programme Component 1: Technical and institutional capacity at national and local level for long-term planning, responding and financing climate action. (national level)							
OUTCOME 1: Strengthened technical and institutional capacity at national and local level for long-term planning, responding and financing climate action to address sea level fluctuation, droughts, floods, and heat waves taking into consideration sustainable urban development.	Decision makers in Azerbaijan are able to plan climate action (y/n) Innovative climate finance mechanisms for local action are applied in Azerbaijan (y/n)	Azerbaijan does not have a wide experience in climate action and financing.	At least 3 local programmes are implemented applying innovative climate action At least 3 Innovative climate action financing mechanisms are applied in Azerbaijan	meetings, informal discussions, existing reports	R. Changes in political dynamics or institutional personnel often result in lack of follow up and non-implementation of plans and policies A. Continued political support and cooperation	Baseline, midterm, and end	UN-Habitat, UNEP, IOM
Output 1.1: Data and knowledge on climate change risks and vulnerability for the Caspian Sea coast of Azerbaijan collected	No of digital tools and models developed to support assessments of climate change risks and vulnerabilities for the Azerbaijan coast of the Caspian Sea	Azerbaijan does not have an established mechanism nor digital tools enhanced vulnerability assessments, neither a unified database. Existing climate adaptation and urbanization policies require adjustment	At least 5 new digital maps (or other tools) of the current trends short- and long-term perspectives on major elements of climate change including changes in temperature, precipitation and climate events and hazards characteristics and timing and their implications for coastal settlements developments	meetings, informal discussions, existing reports	R. Changes in political dynamics or institutional personnel often result in lack of follow up and non-implementation of plans and policies A. Continued political support and cooperation	Baseline, midterm, and end	UNEP, UN-Habitat
Output 1.2: Strategies and recommendations developed for climate change adaptation coordination, planning and management	At least 4 guidelines and recommendations for climate change adaptation coordination, planning and management developed (including national and local levels)	There are currently no cohesive guidelines for climate change adaptation coordination, planning and management and strategies	Development and application of ICZM and MSP guidelines/ recommendation	Strategies, guidelines, reports with recommendations	R. Decision makers will not apply the new ICZM and MSP guidelines/ recommendations A. Decision makers' knowledge on ICZM and MSP is increased, and they apply them on national level	Baseline and end	UNEP, UN-Habitat
Output 1.3: National-and local level capacities in Azerbaijan strengthened to develop and finance plans and measures to address climate change and disaster related risks and impacts for greater local community resilience especially to sea-level fluctuation, droughts, heat waves, and floods.	Capacity of national and local decision makers to respond to climate change adaptation measures in urban areas increased	National decision makers have some awareness of climate risks but limited knowledge on preferred, cost-effective strategies, for addressing climate change, especially in urban areas and at the local level	National decision makers in Azerbaijan are aware of climate change impacts, potential adaptation measures to build urban resilience and financing options for such measures	Awareness and common understanding scorecards to be developed in Year 1. Knowledge, Attitude and Practice (KAP) surveys to be carried out with staff in national ministries in year 1, immediately prior to mid-term review and immediately prior to final review	R. Changing national priorities decrease focus on building capacity on climate change A. Sustained engagement and interest by key ministries on climate change	Baseline and end	UNEP, UN-Habitat
Programme Component 2: Implementation and maintenance of climate adaptation initiatives. (local level)							
OUTCOME 2: Increased adaptive capacity of the built environment and ecosystems resilience through the implementation of climate adaptation initiatives. Local government and communities have acquired the capacity to manage and maintain priority interventions for upscaling.	No of innovative adaptation practices benefiting women and men, eco-systems and infrastructure assets in target communities Number of beneficiaries including estimations for direct and indirect beneficiaries	There have been minimal adaptation measures implemented in the target communities	Three innovative adaptation practices (one for each target community) implemented that increase resilience of women and men, ecosystems and infrastructure assets	Field site inspections photo documentation and local level monitoring reports	R. Delay in implementing infrastructure A. Agreement of Cooperation will stipulate timeframe for implementing infrastructure	Baseline, mid-term and end	IOM, UN-Habitat
Output 2.1: Reduced heat risk through a demonstration greening corridor and development of investment planning for further projects in Greater Baku Region	No of hectares of land rehabilitated with native and climate appropriate plant species in line with the urban development plan of Baku **AF Core Outcome Indicator:** *Natural assets protected or rehabilitated*, including biological assets (produced or wild), land, and water areas with their ecosystems, subsoil assets, and air.	General Master Plan for Baku identified a green corridor without capacity to implement	25 of hectares of former rail-line rehabilitated as green space for use by residents with native and climate appropriate plant species	Field site inspections photo documentation and local level monitoring reports	(R) Delays in final approval of master plan (A) Support of the national and city government for implementation of demonstration site	Annually	UN-Habitat, IOM

Output 2.2: Enhanced Early Warning System for sea level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala	No. of people who receive information on drought and salinization and early warning on flooding **AF Core Outcome Indicator:** *Early Warning Systems*, including (1) risk knowledge, (2) monitoring and warning service, (3) dissemination and communication, and (4) response capability.	Information on drought and salinization is currently not accessible to people in a timely matter	Over 20,000 women and men receive information about drought, salinization and flooding in a timely manner from an EWS	Field site inspections photo documentation and local level monitoring reports	R. Difficulties in coordinating data dissemination between national and local level A. Capacity at local level to convert hydrometeorological data into early warning communications	Annually	IOM
Output 2.3: Improved water security and management to reduce drought risk through demonstrated rainwater harvesting technology and advancing costed integrated water management plans in Astara	No of rainwater harvesting demonstration sites established	In Astara no rainwater harvesting technology has been applied, neither for public buildings nor public spaces	Three rainwater harvesting systems established to demonstrate renewable and sustainable water resource options	Field site inspections photo documentation and local level monitoring reports	R. Delays in obtaining materials for rainwater harvesting systems A. Sustained interest by local authorities in the programme	Annually	IOM
Programme Component 3: Climate change adaptation solutions upscaled to communities throughout Azerbaijan. (upscaling)							
OUTCOME 2: Increased adaptive capacity of the built environment and ecosystems resilience through the implementation of climate adaptation initiatives. Local government and communities have acquired the capacity to manage and maintain priority interventions for upscaling.	Capacity of national decision makers to respond to and finance climate change adaptation measures in urban areas increased	National decision makers have some awareness of climate risks but limited knowledge on preferred, cost-effective strategies, for addressing climate change, especially in urban areas and at the local level	National decision makers in at least five ministries (in each country) are aware of climate change impacts, potential adaptation measures to build urban resilience and financing options for such measures	Awareness and common understanding scorecards to be developed in year 1. Knowledge, Attitude and Practice (KAP) surveys to be carried out with staff in national ministries in year 1, immediately prior to mid-term review and immediately prior to final review	R. Changing national priorities decrease focus on building capacity on climate change A. Sustained engagement and interest by key ministries on climate change	Baseline, mid-term and end	UN-Habitat, UNEP, IOM
Output 3.1: Public Awareness and Engagement Campaigns; Launch of campaigns to raise public awareness about the impacts of climate change and the importance of adaptation measures.	# of communication products about climate risks and solutions based on programme implementation and estimated number of people reached # of public awareness activities No. of trainings/workshops # of knowledge products produced and estimated number of people reached	The general population lacks awareness about the impacts of climate change, particularly regarding water security. Additionally, there is limited knowledge on how to mitigate the effects of sea level fluctuation. Furthermore, there is a lack of capacity to effectively implement local climate action initiatives.	At least one communication product in Azerbaijani language aimed at the general public produced, focusing on educating about water security risks stemming from climate change. The dissemination of these materials will prioritize reaching women, migrants, and other specified target groups in both urban and rural areas. Additionally, each country will conduct at least one study on nature-based solutions, salinization, and/or spatial planning to tackle sea level fluctuations in urban regions along the Caspian Sea coast.	Communication documents, reports, dissemination estimates for number of people reached, especially from target groups	R. Lack of public interest in learning about behavior change to reduce water consumption. Personnel turnover may lead to loss of trained staff and subsequent capacity. A. Interest by general public to learn more about climate change risks to water security and apply behavioral changes. Staff will remain in place to be able to implement the training	Annually, Baseline, midterm, and end; public awareness events, awareness materials produced, trainings	UNEP, UN-Habitat, IOM
Output 3.2: Financial Strategy for Climate Adaptation: Creation of a comprehensive financial strategy to support climate change adaptation measures.	# of staff trained to develop and finance plans to address climate change impacts in urban areas (gender disaggregated) # of stakeholders enabled to access financing for the climate change adaptation measures	Azerbaijan currently lacks a financial strategy for climate change adaptation. National and local government officials, as well as staff in various institutions, have undergone training on climate change adaptation at the national level.	By programme completion, a minimum of 100 national and local staff, with at least 30% representation of women, will be trained in developing and financing plans to tackle climate change effects in urban settings, with a focus on key target populations. Additionally, another 100 national and local staff, with similar gender representation, will receive training on nature-based solutions and/or integrated water management to address climate change impacts in urban areas, also focusing on key target populations. This initiative aims to foster women's active participation, including leadership roles, in combating climate change. leadership.	Records of meetings and trainings including participant surveys	R. Changing priorities in the planning system result in adaptation getting lower priority A. Continued willingness exists to plan for and implement climate change adaptation	Annually, Baseline, midterm, and end; Regional meetings, presentation at major events	UNEP, UN-Habitat, IOM

E. Programme Alignment with AF Results Framework

Table 16: Programme Alignment Framework

Programme Outcome(s)[15]	Programme Outcome Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount
OUTCOME 1: Strengthened technical and institutional capacity at national and local level for long-term planning, responding and financing climate action to address sea level fluctuation, droughts, floods, and heat waves taking into consideration sustainable urban development.	The guidelines for existing policies have been revised and database for information exchange has been developed for decision makers	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy	**1.470.500 USD**
OUTCOME 2: Increased adaptive capacity of the built environment and ecosystems resilience through the implementation of climate adaptation initiatives. Local government and communities have acquired the capacity to manage and maintain priority interventions for upscaling.	# of innovative adaptation practices benefiting women and men, ecosystems and infrastructure assets in target communities	Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level.	**6.043.650 USD**
OUTCOME 3: Applied innovative climate change adaptation solutions upscaled to communities throughout Azerbaijan to reduce their vulnerability to climate change (capacity, partnerships, institutional, legal, research cooperation and knowledge exchange).	Knowledge of decision makers improved through workshops reports and trainings at the regional level through capacity building and new mechanism for collection, disseminating and exchange of information Capacity of national decision makers to respond to and finance climate change adaptation measures in urban areas increased	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate induced socioeconomic and environmental losses Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased 4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	**977.500 USD**

Table 17: Programme Outputs, Indicators and Breakdown of Grant Costs by Components

Programme Outputs for Component 1	Programme Output Indicator(s)	Fund Output	Fund Output Indicator	Grant Amount
Output 1.1: Data and knowledge on climate change risks and vulnerability for the Caspian Sea coast of Azerbaijan collected	# of digital tools and models developed on climate change risks and vulnerability for the Caspian Sea	Output 3.2: Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	**862.250 USD**
Output 1.2: Strategies and recommendations developed for climate change adaptation coordination, planning and management	# of trainings and workshops for national and local government staff to address land-based pollution and urbanization	Output 2.1: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender)	**315.750 USD**
Output 1.3: National-and local level capacities in Azerbaijan strengthened to develop and finance plans and measures to	# of guidelines and recommendations developed	Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	**292.500 USD**

[15] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology, but the overall principle should still apply.

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address climate change and disaster related risks and impacts for greater local community resilience especially to sea-level fluctuation, droughts, heat waves, and floods.				
Programme Outputs for Component 2	**Programme Output Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount**
Output 2.1 Reduced heat risk through a demonstration greening corridor and development of investment planning for further projects in Greater Baku Region	# of hectares of land rehabilitated with native and climate appropriate plant species	Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	3.238.992 **USD**
Output 2.2 Enhanced Early Warning System for sea level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala	# of people who have improved access to hydrometeorological data on drought and salinization and early warning on flooding	Output 1.1: Risk and vulnerability assessments conducted and updated	1.2 No. of early warning systems (by scale) and no. of beneficiaries covered	1.230.992 **USD**
Output 2.3 Improved water security and management to reduce drought risk through demonstrated rainwater harvesting technology and advancing costed integrated water management plans in Astara	# of rainwater harvesting demonstration sites established	Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)	1.573.666 **USD**
Programme Outputs for Component 3	**Programme Output Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount**
Output 3.1: Public Awareness and Engagement Campaigns; Launch of campaigns to raise public awareness about the impacts of climate change and the importance of adaptation measures	# of communication products about climate risks and solutions based on programme implementation and estimated number of people reached #. of public awareness activities # of trainings/workshops	Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level Output 8: Viable innovations are rolled out, scaled up, encouraged and/or accelerated	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses 8.1. # of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	**410.000 USD**
Output 3.2: Financial Strategy for Climate Adaptation: Creation of a comprehensive financial strategy to support climate change adaptation measures	# of staff trained to develop and finance plans to address climate change impacts (gender disaggregated)	Outcome 2: Strengthened institutional capacity to reduce risks associated with climate induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	**567.500 USD**

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F. Detailed Budget

Table 18: Budget Notes – Component 1 (National Level)

Expected Concrete Outputs	Activities	Notes/ Staff	TOTAL (USD)	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
Output 1.1: Data and knowledge on climate change risks and vulnerability for the Caspian Sea coast of Azerbaijan collected	Activity 1.1.1 - Activity 1.1.14	Consultant (national) - Conduct analytical review of information from other regions applicable to the Caspian Sea region in the field of urban resilience and adaptation to climate change	12.500 USD	12.500 USD	0 USD	0 USD	0 USD
		Consultant (national) - Conduct comparative study on measures in which rules and regulations governing human settlements in coastal zone take climate change mitigation and adaptation needs into account	30.000 USD	15.000 USD	15.000 USD	0 USD	0 USD
		Consultant (national) - Provide inventories of land-based sources of pollution; assess pollutants list based on Annex 1, list B	15.000 USD	7.500 USD	7.500 USD	0 USD	0 USD
		Contractual Services (national) - Collect and analyse data and information on sea level fluctuations, increased temperature and floods, and droughts. Establish scenarios and short- and long-term perspectives on major elements of climate change	50.000 USD	15.000 USD	15.000 USD	10.000 USD	10.000 USD
		Contractual Service (national) - Conduct Climate Risk Analysis of the current and programme climate risks specific to the Caspian Sea coast in Azerbaijan (national level)	42.500 USD	15.000 USD	10.000 USD	10.000 USD	7.500 USD
		Contractual Service (national) - Implement Vulnerability Assessment: identify and assess regions and communities most vulnerable to climate change along the Caspian Sea coast in Azerbaijan (local level)	30.000 USD	15.000 USD	7.500 USD	0 USD	7.500 USD
		Consultant (national) - Provide projections on the potential impacts of identified climate risks on various sectors such as agriculture, fisheries, urban development, and natural ecosystems	40.000 USD	10.000 USD	10.000 USD	10.000 USD	10.000 USD
		Contractual Services (international/ national) - Apply spatial planning tools such as the Urban Vulnerability Mapping tool to understand areas of critical stress for urban development, biodiversity and climate risk for inclusion into the National Urban Policy	185.000 USD	50.000 USD	50.000 USD	50.000 USD	35.000 USD
		Contractual Service (national) - Produce digital tools and maps	175.000 USD	50.000 USD	50.000 USD	50.000 USD	25.000 USD
		Workshops and Seminars	56.250 USD	25.000 USD	12.500 USD	12.500 USD	6.250 USD
		International Travel (missions)	10.000 USD	2.500 USD	2.500 USD	2.500 USD	2.500 USD
		Domestic travel	216.000 USD	68.500 USD	70.000 USD	71.500 USD	6.000 USD
		Sub-Total Output 1.1	**862.250 USD**	**286.000 USD**	**862.250 USD**	**286.000 USD**	**250.000 USD**
Output 1.2: Strategies and recommendations developed for climate change adaptation coordination, planning and management	Activity 1.2.1 - Activity 1.2.11	Consultant (international/ national) - Develop ICZM for Azerbaijan	105.500 USD	27.500 USD	28.500 USD	29.500 USD	20.000 USD
		Consultant (international/ national) - Develop MSP for Azerbaijan	27.500 USD	3.000 USD	3.000 USD	1.500 USD	20.000 USD
		Consultant (international) - Compile case studies that showcase successful climate adaptation and coastal management practices specifically in the Caspian Sea region	15.000 USD	7.500 USD	7.500 USD	0 USD	0 USD
		Contractual Service (national): Prepare Sector-Specific Strategies for Coastal and Marine Areas in Azerbaijan: Create strategies that focus specifically on sectors relevant to Azerbaijan's part of the Caspian Sea, such as urbanization, fisheries, tourism, and oil and gas exploitation	45.000 USD	7.500 USD	15.000 USD	15.000 USD	7.500 USD
		Contractual Services (national) - Prepare recommendations for linking ICZM and MSP to the National Urban Policy preparation	23.000 USD	6.000 USD	6.000 USD	6.000 USD	5.000 USD
		Workshops and Seminars	24.250 USD	6.000 USD	6.000 USD	6.000 USD	6.250 USD
		International Travel (missions)	52.500 USD	15.000 USD	15.000 USD	15.000 USD	7.500 USD
		Domestic travel	23.000 USD	6.000 USD	6.000 USD	6.000 USD	5.000 USD
		Sub-Total Output 1.2	**315.750 USD**	**78.500 USD**	**315.750 USD**	**78.500 USD**	**87.000 USD**
Output 1.3: National-and local level capacities in Azerbaijan strengthened to develop and finance plans and measures to address climate change and disaster related risks and impacts for greater local community resilience especially to sea-level fluctuation, droughts, heat waves, and floods	Activity 1.3.1 - Activity 1.3.8	Contractual Service (national): Prepare ICZM and MSP Focused Climate and Urban Resilience Training Modules	45.000 USD	15.000 USD	15.000 USD	15.000 USD	0 USD
		Consultant (international): Prepare ICZM and MSP Best Practices and Case Study Compendium	22.500 USD	10.000 USD	7.500 USD	5.000 USD	0 USD
		Contractual Services (national): Prepare Community Engagement Toolkit for Coastal Areas	22.500 USD	10.000 USD	7.500 USD	5.000 USD	0 USD
		Consultant (national): Implement capacity building workshops for ICZM within the context of the preparation of a National Urban Policy for Azerbaijan	35.000 USD	10.000 USD	10.000 USD	7.500 USD	7.500 USD
		Consultant (national): Implement capacity building workshops for MSP within the context of the preparation of a National Urban Policy for Azerbaijan	35.000 USD	10.000 USD	10.000 USD	7.500 USD	7.500 USD
		Workshops and Seminars	40.000 USD	15.000 USD	10.000 USD	15.000 USD	0 USD
		International Travel (missions)	72.500 USD	35.000 USD	30.000 USD	5.000 USD	2.500 USD
		Domestic travel	20.000 USD	5.000 USD	5.000 USD	5.000 USD	5.000 USD
		Sub-Total Output 1.3	**292.500 USD**	**110.000 USD**	**292.500 USD**	**110.000 USD**	**95.000 USD**
		Sub-Total Component 1	**1.470.500 USD**	**474.500 USD**	**1.470.500 USD**	**474.500 USD**	**432.000 USD**

Table 19: Budget Notes – Component 2 (Local Level)

what	Activities	Notes/ Staff	TOTAL (USD)	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
Output 2.1: Reduced heat risk through a demonstration greening corridor and development of investment planning for further projects in Greater Baku Region	Activity 2.1.1 - Activity 2.1.10	Rehabilitation, construction and planting of initial green and public space site in the Hybrid Corridor	1.750.000 USD	500.000 USD	500.000 USD	500.000 USD	250.000 USD
		Rainwater Harvesting System and equipment for four locations (including catchments, coarse mesh, gutters, conduits, filters, storage, etc.)	500.000 USD	100.000 USD	150.000 USD	150.000 USD	100.000 USD
		Rainwater recycling system for plants and greenspace	295.000 USD	75.000 USD	85.000 USD	85.000 USD	50.000 USD
		Feasibility study with concrete design plans, remediation needs, and native and drought resistant plant options (including climate adaptation expertise on urban adaptation measures and blended finance)	60.000 USD	30.000 USD	30.000 USD	0 USD	0 USD
		Capacity development on urban climate adaptation and finance	50.000 USD	10.000 USD	15.000 USD	15.000 USD	10.000 USD
		Environmental Impact Assessment Report (ESIA) and gender expertise and monitoring	30.000 USD	10.000 USD	10.000 USD	5.000 USD	5.000 USD
		Community consultations	40.000 USD	15.000 USD	10.000 USD	10.000 USD	5.000 USD
		Draft investment plan to develop the remainder of the hybrid, green corridor	65.000 USD	0 USD	25.000 USD	25.000 USD	15.000 USD
		Recommendations for the design of gender sensitive green and public space based on a study	50.000 USD	10.000 USD	30.000 USD	10.000 USD	0 USD
		Private sector engagement on adaptation finance and commercial development along the green corridor	60.000 USD	15.000 USD	15.000 USD	15.000 USD	15.000 USD
		Executing entity - personnel and office costs	338.992 USD	84.748 USD	84.748 USD	84.748 USD	84.748 USD
		Sub-Total Output 2.1	**3.208.992 USD**	**849.748 USD**	**3.238.992 USD**	**849.748 USD**	**954.748 USD**
Output 2.2: Enhanced Early Warning System for sea level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala	Activity 2.2.1 - Activity 2.2.9	Early Warning System equipment (i.e. 2 water level sensors, 2 wind sensors, information dashboard, etc.)	500.000 USD	100.000 USD	200.000 USD	100.000 USD	100.000 USD
		Early Warning System - communication	150.000 USD	50.000 USD	50.000 USD	35.000 USD	15.000 USD
		Capacity development on Early Warning System	60.000 USD	20.000 USD	20.000 USD	10.000 USD	10.000 USD
		Environmental Impact Assessment Report (ESIA) and gender expertise and monitoring	32.000 USD	8.000 USD	8.000 USD	8.000 USD	8.000 USD
		Community consultations	20.000 USD	5.000 USD	5.000 USD	5.000 USD	5.000 USD
		Scoping study on the role of nature-based solutions in managing salinization	50.000 USD	25.000 USD	25.000 USD	0 USD	0 USD
		Awareness raising campaign	30.000 USD	7.500 USD	7.500 USD	7.500 USD	7.500 USD
		Climate adaptation expertise on urban adaptation measures and Early Warning System	50.000 USD	15.000 USD	15.000 USD	10.000 USD	10.000 USD
		Executing entity - personnel and office costs	338.992 USD	84.748 USD	84.748 USD	84.748 USD	84.748 USD
		Sub-Total Output 2.2	**1.230.992 USD**	**315.248 USD**	**1.230.992 USD**	**315.248 USD**	**415.248 USD**
Output 2.3: Improved water security and management to reduce drought risk through demonstrated rainwater harvesting technology and advancing costed integrated water management plans in Astara	Activity 2.3.1 - Activity 2.3.9	Rainwater Harvesting System and equipment for four locations (including catchments, coarse mesh, gutters, conduits, filters, storage, etc.)	944.674 USD	250.000 USD	250.000 USD	200.000 USD	244.674 USD
		Feasibility study on rainwater harvesting covering each of the four sites	50.000 USD	12.500 USD	12.500 USD	12.500 USD	12.500 USD
		Public education on water use and conservation	40.000 USD	10.000 USD	10.000 USD	10.000 USD	10.000 USD
		Capacity development urban climate adaptation and water	40.000 USD	10.000 USD	10.000 USD	10.000 USD	10.000 USD
		Development of costed plan for adaptation solutions and integrated water management including gender-disaggregated water use	80.000 USD	40.000 USD	15.000 USD	15.000 USD	10.000 USD
		Environmental Impact Assessment Report (ESIA) and gender expertise and monitoring	30.000 USD	7.500 USD	7.500 USD	7.500 USD	7.500 USD
		Climate Adaptation expertise on urban adaptation measures and integrated water management	10.000 USD	5.000 USD	5.000 USD	-	-
		Community Consultations	40.000 USD	15.000 USD	10.000 USD	10.000 USD	5.000 USD
		Executing entity - personnel and office costs	338.992 USD	84.748 USD	84.748 USD	84.748 USD	84.748 USD
		Sub-Total Output 2.3	**1.573.666 USD**	**434.748 USD**	**404.748 USD**	**349.748 USD**	**384.422 USD**
		Sub-Total Component 2	**6.043.650 USD**	**1.599.744 USD**	**1.774.744 USD**	**1.509.744 USD**	**1.159.418 USD**

Table 20: Budget Notes – Component 3 (Upscaling)

Expected Concrete Outputs	Activities	Notes/ Staff	TOTAL (USD)	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
Output 3.1: Public Awareness and Engagement Campaigns; Launch of campaigns to raise public awareness about the impacts of climate change and the importance of adaptation measures	Activity 3.1.1 - Activity 3.1.7	Development of communication products in Azerbaijani language to increase awareness with general public on water security risks due to climate change	65.000 USD	25.000 USD	15.000 USD	15.000 USD	10.000 USD
		Contractual Services (national) - Develop Climate Change Adaptation Awareness Toolkits	60.000 USD	10.000 USD	20.000 USD	20.000 USD	10.000 USD
		Contractual Services (national) - Establish Climate Resilience Storytelling Collection	45.000 USD	7.500 USD	15.000 USD	15.000 USD	7.500 USD
		Multi-media dissemination/ campaign in Azerbaijani language of key messages to key ministries and target groups, including women, migrants and other target groups	50.000 USD	20.000 USD	10.000 USD	10.000 USD	10.000 USD
		Consultant (international/ national) - Conduct a study on financing for nature-based solutions, salinization, and/or spatial planning to address sea level fluctuation in urban areas along the Azerbaijan Caspian Sea coast	85.000 USD	30.000 USD	30.000 USD	17.500 USD	7.500 USD
		Consultant (international/ national) - Conduct a study on establishing climate resilient livelihoods building on how access to Early Warning Systems can build resilience in sectors such as agriculture, tourism and aquaculture as well as access to services, especially for families left behind by migrants in Astara and Neftchala	85.000 USD	35.000 USD	20.000 USD	20.000 USD	10.000 USD
		Travel (international/ domestic)	20.000 USD	5.000 USD	5.000 USD	5.000 USD	5.000 USD
		Sub-Total Output 3.1	**410.000 USD**	**132.500 USD**	**115.000 USD**	**102.500 USD**	**60.000 USD**
Output 3.2: Financial Strategy for Climate Adaptation: Creation of a comprehensive financial strategy to support climate change adaptation measures	Activity 3.2.1 - Activity 3.2.8	Consultant (international) - Prepare Case Studies on successful climate adaptation financing	25.000 USD	7.500 USD	7.500 USD	7.500 USD	2.500 USD
		Consultant (international/national) - Develop Climate Adaptation Finance Guide for City Leaders in Azerbaijan	40.000 USD	15.000 USD	10.000 USD	10.000 USD	5.000 USD
		Consultant (international/nationall) - Training package on developing and financing plans to address climate change impacts in urban areas and focusing on key target populations	60.000 USD	20.000 USD	15.000 USD	15.000 USD	10.000 USD
		Training on developing and financing plans to address climate change impacts in urban areas and focusing on key target populations	55.000 USD	15.000 USD	30.000 USD	10.000 USD	0 USD
		Side Event at Azerbaijan National Urban Forum on climate finance, alongside capacity building workshops aimed at enabling access for finance for climate adaptation	27.500 USD	0 USD	7.500 USD	10.000 USD	10.000 USD
		Consultant (international/ national) - Training package on nature-based solutions and/or integrated water management to address climate change impacts in urban areas and focusing on key target populations	90.000 USD	35.000 USD	15.000 USD	25.000 USD	15.000 USD
		Training on nature-based solutions and/or integrated water management to address climate change impacts in urban areas and focusing on key target populations	70.000 USD	10.000 USD	35.000 USD	25.000 USD	0 USD
		Workshops, seminars and field visits on innovative and successful technologies and approaches used to address floods, erosion, planned city extensions and urban densification as well as on innovative and successful technologies and approaches used to address floods, erosion, biodiversity and ecosystem protection, drainage networks, basic urban service and public space provision.	200.000 USD	50.000 USD	50.000 USD	50.000 USD	50.000 USD
		Sub-Total Output 3.2	**567.500 USD**	**152.500 USD**	**170.000 USD**	**152.500 USD**	**92.500 USD**
		Sub-Total Component 3	**977.500 USD**	**285.000 USD**	**285.000 USD**	**255.000 USD**	**152.500 USD**

Table 21: Overview Budget Notes for Components 1 – 3

Notes/ Staff			TOTAL (USD)	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
Programme Activities Cost (A)	Output 1.1	Component 1 - national	862.250 USD	286.000 USD	250.000 USD	216.500 USD	109.750 USD
	Output 1.2		315.750 USD	78.500 USD	87.000 USD	79.000 USD	71.250 USD
	Output 1.3		292.500 USD	110.000 USD	95.000 USD	65.000 USD	22.500 USD
	Sub-Total (A1)		**1.470.500 USD**	**474.500 USD**	**432.000 USD**	**360.500 USD**	**203.500 USD**
	Output 2.1	Component 2 - local	3.238.992 USD	849.748 USD	954.748 USD	899.748 USD	534.748 USD
	Output 2.2		1.230.992 USD	315.248 USD	415.248 USD	260.248 USD	240.248 USD
	Output 2.3		1.573.666 USD	434.748 USD	404.748 USD	349.748 USD	384.422 USD
	Sub-Total (A2)		**6.043.650 USD**	**1.599.744 USD**	**1.774.744 USD**	**1.509.744 USD**	**1.159.418 USD**
	Output 3.1	Component 3 - upscaling	410.000 USD	132.500 USD	115.000 USD	102.500 USD	60.000 USD
	Output 3.2		567.500 USD	152.500 USD	170.000 USD	152.500 USD	92.500 USD
	Sub-Total (A3)		**977.500 USD**	**285.000 USD**	**285.000 USD**	216.500 USD	**152.500 USD**
		TOTAL Programme Activities Cost (A)	**8.491.650 USD**	**2.359.244 USD**	**2.491.744 USD**	**2.125.244 USD**	**1.515.418 USD**

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Table 22: Budget Notes – Execution Cost

Programme Execution Cost			TOTAL (USD)	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
Programme Execution Cost (B) *Programme management, including consultant services, travel, office facilities, directive administration cost; staffing cost, M+E, progress reports, financial reports, consultation with stakeholders; communication, travel*	**Programme Implementation (B1)**	Programme Manager (Baku, P4 - 50%), also supports execution of component 2 in Azerbaijan	275.500 USD	67.750 USD	68.250 USD	69.250 USD	70.250 USD
		Programme Assistant (national, NOA - 100%)	170.520 USD	39.650 USD	41.650 USD	43.620 USD	45.600 USD
		Monitoring & Evaluation, Communication Officer (national, G5 - 100%); (including safeguarding and gender (AF) compliance)	111.450 USD	26.310 USD	27.350 USD	28.380 USD	29.410 USD
		Sub-Total Programme Execution Costs - Programme Implementation (B1)	**557.487 USD**	**133.714 USD**	**137.254 USD**	**141.254 USD**	**145.265 USD**
	Travel (B2)	Travel (programme supervision missions and Steering Committee Meetings)	9.000 USD	1.500 USD	3.000 USD	3.000 USD	1.500 USD
		Sub-Total Programme Execution Costs - Travel (B2)	**9.000 USD**	**1.500 USD**	**3.000 USD**	**3.000 USD**	**1.500 USD**
	Operations (B3)	Office Rental	0 USD	0 USD	0 USD	0 USD	0 USD
		Office Security Cost Share	0 USD	0 USD	0 USD	0 USD	0 USD
		Common Services Cost Share	12.000 USD	3.000 USD	3.000 USD	3.000 USD	3.000 USD
		Communication Cost (Information and communication technology (ICT) licences, internet, mobile devices, etc)	24.000 USD	6.000 USD	6.000 USD	6.000 USD	6.000 USD
		Vehicle Operations and Maintenance/ Car Rental	60.000 USD	15.000 USD	15.000 USD	15.000 USD	15.000 USD
		Office Operating Cost (utilities, maintenance, stationery, petty cash)	12.000 USD	3.000 USD	3.000 USD	3.000 USD	3.000 USD
		ICT equipment (laptops/ desktops, printer)	42.500 USD	21.250 USD	10.000 USD	7.500 USD	3.750 USD
		Sub-Total Programme Execution Costs - Operations (B3)	**150.500 USD**	**48.250 USD**	**37.000 USD**	**34.500 USD**	**30.750 USD**
	Monitoring and Evaluation (B4)	Inception Meeting - UN-Habitat (national through programme office)	2.990 USD	1.500 USD	1.490 USD	0 USD	0 USD
	Measurements of Means of Verification (Baseline Assessment and M&E Plans) as Part of Inception	Programme/ Technical Advisory Committee Meetings - UN-Habitat (regional with UNEP; national through project office)	9.600 USD	2.400 USD	2.400 USD	2.400 USD	2.400 USD
		Report preparation and Employment Equity (EE) compliance to AF ESP and GP - UN-Habitat (Programme Management)	9.600 USD	2.400 USD	2.400 USD	2.400 USD	2.400 USD
	Direct Programme Monitoring and Quality Assurance, including Annual Progress and Financial Reporting, Programme Revisions, Technical Assistance and ESP and GP Compliance (from Execution Fee M&E and Safeguards)	Direct Programme Monitoring and Quality Assurance, including progress and financial reporting, and risk management -UN-Habitat (Programme Management)	9.600 USD	2.400 USD	2.400 USD	2.400 USD	2.400 USD
		Compliance with ESP and GP - UN-Habitat (Programme Management)	4.800 USD	1.200 USD	1.200 USD	1.200 USD	1.200 USD
	Audits (in line with requirements)	External	0 USD	0 USD	0 USD	0 USD	0 USD
	Mid-Term Evaluation (in line with requirements)	Independent	15.000 USD	0 USD	15.000 USD	0 USD	0 USD
	Final Evaluation (in line with requirements)	Independent	30.000 USD	0 USD	0 USD	0 USD	30.000 USD
		Sub-Total Programme Execution Costs - M&E (B4)	**81.590 USD**	**9.900 USD**	**24.890 USD**	**8.400 USD**	**38.400 USD**
		TOTAL Programme Execution Costs (B) (max. 9.5%)	**798.577 USD**	**193.364 USD**	**202.144 USD**	**187.154 USD**	**215.915 USD**

Table 23: Budget Notes – MIE Fees

Implementing Entity Fee (C) = Programme Cycle Management Fee			TOTAL (USD)	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
Implementing Entity Fee (C) *Programme cycle management services including programme supervision (engagement with donor, policy support, portfolio management, reporting, outreach and knowledge sharing, programme preparation and management oversight, financial management and quality assurance, implementation reports, supervision, programme completion and evaluation oversight)*	1,25%	Programme Management Officer - Administration (P3)	116.128 USD	31.908 USD	33.674 USD	28.905 USD	21.642 USD
	0,25%	UN-Habitat Monitoring and Evaluation (ESP and GP), including travel	23.226 USD	6.382 USD	6.735 USD	5.781 USD	4.328 USD
	5,83% + 1% pass through	UN-Habitat HQ PSC (5,83%) - overall project supervision, including compliance to UN-Habitat and AF policies (gender, human rights, climate change, etc.) Part of this fee will be passed through to UNEP and IOM utilizing the UN to UN agreement modality (1%).	570.420 USD	156.730 USD	165.405 USD	141.981 USD	106.304 USD
		TOTAL Programme Cycle Management Fee Costs (C) (8.5%)	**709.773 USD**	**195.019 USD**	**205.813 USD**	**176.667 USD**	**132.274 USD**

Table 24: Programme Budget Overview and Calculation of Total Funding Request

Programme Budget Overview and Calculation of Total Funding Request			TOTAL (USD)	Year 1 2025	Year 2 2026	Year 3 2027	Year 4 2028
A (PAC)	Programme Activities Cost (PAC)		8.491.650 USD	2.359.244 USD	2.491.744 USD	2.125.244 USD	1515.418 USD
B (PEC) = 9,50% * PAC	Programme execution cost/ Programme Management Cost (PEC) - max. 9,50%	Programme management, including consultant services, travel and office facilities, covering the direct cost for administration. Specific costs: staffing costs, programme related activities expenditure (monitoring and evaluation costs, progress reports and financial reports; consultation with programme stakeholders (meetings, workshops); communication, travel)	798.577 USD	193.364 USD	202.144 USD	187.154 USD	215.915 USD
A+B (PAC + PEC)	Total programme cost	Cost of all programme activities/ components and the programme execution cost	9.290.227 USD	2.552.608 USD	2.693.888 USD	2.312.398 USD	1.731.333 USD
C (PMC) = 8,50% * (PAC+PEC)	Implementing Entity Fee/ Programme Cycle Management Cost (PMC) - 8,50%	Programme cycle management services including programme supervision. Corporate activities, relation to donor (policy support, portfolio management, reporting, outreach and knowledge sharing) and programme cycle management fees (programme preparation and management oversight including financial management and quality insurance, implementation reports supervision, programme completion and evaluation oversight)	709.773 USD	195.019 USD	205.813 USD	176.667 USD	132.274 USD
	D = A+B+C	**TOTAL Amount of Funding requested/ Grant Amount**	**10.000.000 USD**	**2.747.627 USD**	**2.899.701 USD**	**2.489.065 USD**	**1.863.607 USD**

Table 25: Calculation of Execution Fee for Components and Total

Component	Execution Entity	A: Programme Activities (Total)	B: Programme Execution (max. 8.5%)						Fees						
			Fee for IE acting as part of EE		Fee for Non-IE acting as part of EE		Pass through IE to EE		UN-Habitat EE - 1,5% (Total)	UNEP EE - 9,5% (Total)			UNEP EE - 9,5% (Total)		
									UN-Habitat - 1,5%	UNEP – 1,5% UN-Habitat PMC contribution	UNEP - 7% (PSC)	UNEP EE - 9,5% (Total)	IOM - 1,5% UN-Habitat PMC contribution	IOM - 7% (PSC)	IOM EE - 9,5% (Total)
Component 1 - national level	UN-Habitat	255.000 USD	1,5%	3.825 USD	-	0 USD	-	-	3.825 USD	-	-	-	-	-	-
	UNEP	1.215.500 USD	-	0 USD	7%	85.085 USD	1%	12.155 USD	-	18.233 USD	85.085 USD	103.318 USD	-	-	-
	IOM	0 USD	-	0 USD	7%	0 USD	1%	0 USD	-	-	-	-	-	-	-
Component 2 - local level	UN-Habitat	2.738.992 USD	1,5%	41.085 USD	-	0 USD	-	-	41.085 USD	-	-	-	-	-	-
	UNEP	0 USD	-	0 USD	7%	0 USD	1%	0 USD	-	0 USD	0 USD	0 USD	-	-	-
	IOM	3.304.658 USD	-	0 USD	7%	231.326 USD	1%	33.047 USD	-	-	-	-	49.570 USD	231.326 USD	280.896 USD
Component 3 - upscaling	UN-Habitat	427.500 USD	1,5%	6.413 USD	-	0 USD	-	-	6.413 USD	-	-	-	-	-	-
	UNEP	297.500 USD	-	0 USD	7%	20.825 USD	1%	2.975 USD	-	4.463 USD	20.825 USD	25.288 USD	-	-	-
	IOM	252.500 USD	-	0 USD	7%	17.675 USD	1%	2.525 USD	-	-	-	-	3.788 USD	17.675 USD	21.463 USD
Total % from Programme Activities		**8.491.650 USD**	-	**51.322 USD**	-	**354.911 USD**	-	**50.702 USD**	**51.322 USD**	**22.695 USD**	**105.910 USD**	**128.605 USD**	**53.357 USD**	**249.001 USD**	**302.358 USD**
		5.83%		**51.322 USD**				**405.613 USD**							

G. Disbursement Schedule with Timebound Milestones

Table 26: Disbursement Schedule

		Upon Signature Q1.2025	One Year after Programme Inception Q1.2026	Two Years after Programme Inception Q1.2027	Three Years after Programme Inception Q1.2028	
Schedule Date	**Total Disbursement**	1st Disbursement	2nd Disbursement – one year after programme inception	3rd Disbursement – two years after programme inception	4th Disbursement – three years after programme inception	
Milestone		Upon agreement signature between UN-Habitat and Adaptation Fund	Upon financial report indicating disbursement of at least 50% of funds of 1st year and/ or upon First Annual Report	Upon financial report indicating disbursement of at least 50% of funds of 2nd year and/ or upon Second Annual Report	Upon financial report indicating disbursement of at least 50% of funds of 3rd year and/ or upon Third Annual Report	
A. Programme Activities Cost (USD)	8.491.650 USD	2.359.244 USD	2.491.744 USD	2.125.244 USD	1.515.418 USD	
B. Programme Execution Cost (USD)	798.577 USD	193.364 USD	202.144 USD	187.154 USD	215.915 USD	
C. Implementing Entity Fee (USD)	709.773 USD	195.019 USD	205.813 USD	176.667 USD	132.274 USD	
TOTAL Grant Amount (USD) A+B+C	**10.000.000 USD**	**2.747.627 USD**	**2.906.719 USD**	**2.489.065 USD**		**1.863.607 USD**

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

A. Records of Endorsement on Behalf of the Government

Mr. Emin Garabaghli, Head - Division for International Cooperation, Ministry of Ecology and Natural Resources (Designated Authority, Republic of Azerbaijan)	Date: 14 March 2024

AZƏRBAYCAN RESPUBLİKASI
EKOLOGİYA VƏ TƏBİİ
SƏRVƏTLƏR NAZİRLİYİ

MINISTRY OF ECOLOGY
AND NATURAL RESOURCES
REPUBLIC OF AZERBAIJAN

Az1073 Azərbaycan, Bakı, K. Kazımzadə küç. 100A
Tel: +99412 492-59-07, Faks: +99412 492-59-07
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100A, K. Kazimzade str. Az1073 Baku, Azerbaijan
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E-mail: info@eco.gov.az

№ 3-14/2-988-D-08/2024 «14» 03 2024-ü

To: Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: afbsec@adaptation-fund.org
Fax: 202 522 3240/5

Subject: Endorsement of single country project proposal on *Building Climate Resilient Cities and Communities in Azerbaijan*

In my capacity as designated authority for the Adaptation Fund in the Republic of Azerbaijan, I confirm that the single country project proposal on *Building Climate Resilient Cities and Communities in Azerbaijan* is in accordance with our national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the Republic of Azerbaijan as one of the Caspian Sea littoral states. In the Republic of Azerbaijan, the project components have identified three concrete adaptation measures to be implemented in the following locations:

1. Reduced heat risk through a demonstration greening corridor and investment planning for future projects in Baku;
2. Enhanced Early Warning System for sea level fluctuation, drought, flooding and salinisation based on advanced hydro-meterological data and urban development plans in Neftchala; and
3. Improved water security and management to reduce drought risk through demonstrated rainwater harvesting technology and advancing costed integrated water management plans in Astara.

Accordingly, I am pleased to endorse above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat). The component on Integrated Coastal Zone Management (ICZM) Planning will be executed by the United Nations Environment Programme (UNEP). The national component as well as the local implementation of the green corridor in Baku will be implemented by UN-Habitat. The

International Organisation on Migration (IOM) will execute the local implementation of interventions in Neftchala and Astara.

The oversight of the project will be conducted by the Ministry of Ecology and Natural Resources, and technically supported and coordinated by the State Committee on Urban Planning and Architecture of the Republic of Azerbaijan.

Sincerely,

Emin Garabaghli
Head
Division of International Cooperation

Mr. Dovletkhan Dovletkhanov, Deputy Chairman of the State Committee on Urban Planning and Architecture (SCUPA) of the Republic of Azerbaijan	Date: 19 March 2024

THE STATE COMMİTTEE ON URBAN PLANNİNG AND ARCHİTECTURE OF THE REPUBLİC OF AZERBAİJAN

AZ 1014, Baku city, Fuzuli street, 65 Phone: (+994 12) 493 34 67 Fax: (+994 12) 493 34 67
Web: www.arxkom.gov.az E-mail: office@arxkom.gov.az

March 19 , 2024 **3-35/2-2072/2024**

To: Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: afbsec@adaptation-fund.org
Fax: 202 522 3240/5

Subject: Endorsement for proposal on Building Climate-Resilient Cities and Communities in the Republic of Azerbaijan

As the central public authority responsible for urban planning and architecture, we are pleased to confirm our endorsement of the project proposal aimed at Building Climate-Resilient Cities and Communities in the Republic of Azerbaijan. Each of the three concrete adaptation measures proposed in the project holds equal significance for the country.

Considering the approval of the Baku Master Plan 2040 by the Cabinet of Ministers of the Republic of Azerbaijan on December 30, 2023, we endorse and fully support the implementation of *"Reduced heat risk through a demonstration greening corridor and investment planning for future*

projects in Baku" as one of the strategic projects of the implementation of the Master Plan Baku 2040.

In case of approval, the project will be implemented by the United Nations Human Settlements Programme (UN-Habitat) in collaboration with the State Committee on Urban Planning and Architecture of the Republic of Azerbaijan serving as the local counterpart of UN-Habitat.

The oversight of the project will be conducted by the Ministry of Ecology and Natural Resources the Republic of Azerbaijan, with technical support and coordination provided by the State Committee on Urban Planning and Architecture of the Republic of Azerbaijan.

We are confident that this initiative will play a pivotal role in enhancing the resilience of our cities and communities to climate-related challenges and contribute significantly to sustainable urban development in our region.

Sincerely,

Deputy Chairman **Dovletkhan Dovletkhanov**

Azərbaycan Respublikasının
Dövlət Şəhərsalma və Arxitektura Komitəsi
ELEKTRON SƏNƏDİN SURƏTİ

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (particularly "Azerbaijan 2030: National Priorities for Socio-Economic Development", "Strategy for Socio-Economic Development in 2022 – 2026", "Azerbaijan 2020: Look into the Future" and National Determined Contributions of the Republic of Azerbaijan) and subject to the approval by the Adaptation Fund Board, commit to implementing the programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this programme.

Implementing Entity Coordinator **Rafael Tuts,** Director, Global Solutions Division | Officer-in-Charge, Office of the Deputy Executive Director | United Nations Human Settlements Programme; Tel +254 20 7623726 | Cell +254 713 601 278 | Email raf.tuts@un.org	Date: 14 March 2024
Project Contact Person **Katja Schäfer**, Inter-Regional Advisor I United Nations Human Settlements Programme (UN-Habitat) I Global Solutions Division I Programme Development Branch; Tel +254 20 7624738 I Cell +254 757 628 691 I Email katja.schaefer@un.org	

ANNEXES

ANNEX 1: Target Area Selection

Greater Baku Region - A.1

Figure 19: Target area A1. Greater Baku Area (not to scale)

The city of Baku, capital of the Republic of Azerbaijan, is the largest coastal metropolitan area of the Caspian Sea with its extensive built environment. It lies on the western shore of the Caspian Sea, and the southern side of the semi-arid Abşheron Peninsula, around the wide curving sweep of the Bay of Baku. The bay, sheltered by the islands of the Baku Archipelago, provides the best harbour of the Caspian Sea, while the Absheron Peninsula gives protection from violent northerly winds.

The annual precipitation ranges between 150mm in the south-west to 300mm in the northern and eastern part of the peninsula. The natural biotype is dry steppe and semi-desert. There are no permanent watercourses on the peninsula and agriculture is supported via irrigation. More significant reduction in precipitation is predicted for the inland mountainous region of Azerbaijan (up to 20% reduction) which currently supply majority of potable and irrigation water to Absheron thus further exacerbating risk of future water scarcity (Zoï Environment Network, 2011).

The city is known for its accelerated pace of development and urbanization levels in the post-Soviet period, but also for large-scale environmental and social problems accompanying its growth. Baku is today home to approximately a quarter of the country's population. The rapid and largely uncoordinated construction has had a detrimental effect not only on its infrastructure, but it has also led to a rapid reduction in green areas in favour of tall housing and commercial blocks, which has made this centre of political, cultural and economic activities heavily vulnerable to increasing temperatures, due to the urban heat island effect. In their joint 2021 Climate Risk Country Profile, ADB and the World Bank reported a rise in the number of summer days with maxima exceeding 35°C.

The high temperatures led to an increase in first-aid calls particularly from elderly citizens, and increases of 20%–34% in the number of complaints of blood, respiratory and neural diseases. The enhancement of the green and open space supply within the city is among the priority targets of **Baku City General Plan 2040**[16] that was approved in December 2023. In accordance with the "State Urban Planning Norms and Regulations (AzDTN 2.6-1)", the Baku City General Plan will take measures to increase the amount of urban green space to 8 sqm per capita.

Considering the current share of green space within the administrative boundaries of the City of Baku, it is evident that it will be necessary for the authorities to embark on massive urban green space intervention efforts to match the prevailing national standards. The quality, quantity and accessibility of urban green space will need to be modified, either by establishing new urban green spaces or by changing the characteristics and functions of existing ones. To reach national standards, a share of 10% natural and open green areas will have to be achieved within the boundaries of the Baku City Plan 2040. Currently, the natural and open green areas including park (Playgrounds, Sports, Leisure), woodland and afforestation, cemeteries, tourism areas (beaches, resorts) and natural protection areas totals roughly 11,588 hectares, which equates 5.43 % of the total area. Hence, Baku will need an additional 9,762 hectares of green spaces.

The Baku City General Plan was adopted in December 2023 and outlines 4 priority areas:

1. *Sustainable development of the city:* decentralization and the creation of new compact sub-centres; formation of sub-centres as multifunctional cores; ensuring equal opportunities and inclusiveness; prioritizing public transport; and synchronous development of infrastructure provision.

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[16] Reference: https://arxkom.gov.az/en/bakinin-bas-plani?plan=baki-seherinin-bas-plani-2040

2. *Regeneration of the city and its surrounding environment:* creation of a developed system of public spaces; implementation of the "Clean City" approach; continuous attention to ecology; and ensuring a comprehensive approach to land use.
3. *Care for the architectural appearance of the city and its historical heritage:* neighbourhood planning – providing appropriate architectural solutions; preservation of historical heritage; and ensuring the development of a cultural life.
4. *New content:* creation of suitable industrial areas and new sectors; transforming Baku into the best tourism destination in the region; promotion of cultural and mass events; supportive for creative and neo-traditional industrial sectors; digitalization of services; and ensuring the harmonious development of the city and the country.

Figure 20: Illustration of Baku City General Plan 2040 (not to scale)
(Source: https://arxkom.gov.az/en/bakinin-bas-plani/plans/baki-seherinin-bas-plani-2040)

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The enhancement of the green and open space supply within the city is among the priority targets of the Baku General Plan. Multifunctional green spaces offer innovative approaches to increase the quality of urban settings, enhance local resilience and promote sustainable lifestyles. Hence, it is necessary to plan for public green spaces to be easily accessible for all population groups and distributed equally throughout the city. Multifunctional green spaces offer innovative approaches to increase the quality of urban, local and regional settings and promote sustainable lifestyles. The focus is now on the provision of more leisure and active recreation zones to promote a healthy lifestyle for all residents.

The "Hybrid Green Corridors" are among the main conceptual pillars of the Baku General Plan 2040. They combine various functions such as:

- increasing tree coverage and providing additional green recreational spaces,
- improving air quality and microclimate by enhancing ventilation through the city,
- connecting parts of the city by improving pedestrian street environment, and encourage walking and cycling,
- being preferred routes for the envisaged system of dedicated bus lanes and
- providing main routes for the upgrade and connection of new utility lines and facilities such as water retention basins.
- triggering new urban developments.

Figure 21: A.1-1: Housing under construction in Baku city centre

Figure 22: A.1-2: Rail yard in Baku city

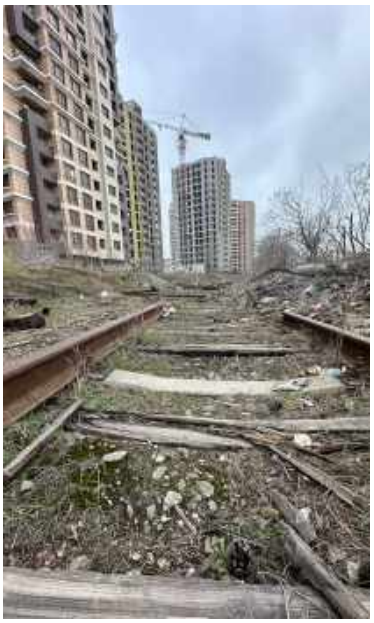

Figure 23: A.1-3: Baku Master Plan - former railway line selected for greening

Figure 24: A.1-4: Cement coverage along the former railway line

Figure 25: A.1-5: Road cutting across the former railway corridor, limiting accessibility to “green corridor”

The Baku General Plan 2040 indicates that the Hybrid Green Corridors will also be used as so-called “rain parks”, to prevent flooding in the city. In case of a large rain event the park and the additional strips of green space are used to temporarily store and infiltrate stormwater – espousing the “sponge city” concept. They also increase the aesthetic appeal of the road design and have positive climatic effects on the public realm, especially during hot summer events. In parallel, new utility corridors are incorporated into the Hybrid Green corridors, especially in areas where major redevelopment and new development occurs. These utility corridors will be used by gas, power, water, telecoms and district heating as necessary, ensuring a sustainable supply of the city.

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Nefchala - A.2

Figure 26: Target area A.2 – Neftchala Region (not to scale)

The Neftchala district has been identified as a priority development region for the Government of the Republic of Azerbaijan. The district comprises of a city (Neftchala), 48 villages and 3 settlements. The territory is mainly a lowland, with several underwater plains, alluvial meadows and some swamps. Aside from one automobile factory, Neftchala district's economy is dominated by farming (mainly cereals, cotton, vegetables and fruits), cattle breeding, fishing, oil and gas.

Located along the coastal area at the mouth of the river Kura, the impact of climate change is very visible. The area is exposed to flooding during heavy rains and higher water tables of the Caspian Sea while facing salination when drought occurs as well as declining water levels of the Caspian Sea. The absence of fresh water and salinization of Kura River during the 2020 summer made the site the zone of an emergency. The local authorities have built a shallow rock dam at the mouth of the river in an attempt to limit the seepage of salty water from the Caspian Sea that occurs when the Kura River is particularly shallow. Currently, the government is also constructing a large-scale infrastructure project in order to pipe the necessary drinking water to the location and address the limited accessibility to fresh drinking water and for agricultural purposes. The Neftchala district is considered a priority area of the government's development efforts due to its strategic location, proximity to national parks, as well as livelihoods depending on access to both the river Kura and the Caspian Sea. This fragile ecosystem is threatened as well as community vulnerabilities exposed.

Figure 27: A.2-1: Typical multi-story building in Neftchala without access to water during drought (source: Anar Valiyev)

Figure 28: A.2-2: Irrigation canal washing salinity from agricultural fields into the Kura River catchment area (source: Anar Valiyev)

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Figure 29: A.2-3: Informal Solid Waste dumping site next to a riverbed in Neftchala region (source: Anar Valiyev)

Figure 30: A.2-4: Images of Kura River during summer period drought. (https://www.turan.az/ext/news/2020/7/free/Interview/en/125715.htm)

Astara - A.3

Figure 31: Target area A.3 – Lenkaran/ Astara Region (not to scale)

The city is located in proximity to the border with Iran separated by the Astarachay River. Although its density is not yet comparable to the central parts of the Caspian Sea coast in Republic of Azerbaijan, the region has seen a pronounced population growth in recent years due to opportunities created by the border economy (22.4% increase in population from 2000 to 2015).

The expansion of the urban fabric is currently pressuring the Hyrcanian forest system, and surrounding agricultural landscapes, which are still the main economic sector. With a large proportion of the region's households living in rural areas being engaged in subsistence agriculture, there is an increasing demand for water which is clearly not being met. Hydrological processes have had an enormous impact on available water resources, agricultural productivity, and community vulnerability. Nation-wide average daily water supply of the population has gone from 153.5 litres to 66.9 litres in the last 20 years, and water shortages in the region are expected to be exacerbated by time. As temperature increases, and precipitation decreases, coupled with changes in snow cover extent, there's a need to improve water security and management, to reduce drought risk and diversify water sourcing capacity, especially considering that the existing reservoirs and irrigation systems are mostly used for agriculture and reporting heavy losses during transportation, and that 70% of total river flow comes from compromised cross-border river flow.

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Figure 32: A.3-1: Informal Solid Waste dumping site in Astara region (source: Anar Valiyev)

Figure 33: A.3-2: People in region depend on the trans-border trade for their own consumption or business (source: Anar Valiyev)

Figure 34: A.3-3: Azerbaijan-Iranian border. Iran is a destination for food and medical services (Source: https://iwpr.net/global-voices/azerbaijanis-flock-iran-food-medicines)

ANNEX 2: Vulnerability Assessment Summary with Focus on localized Climate Change Impacts/ Hazards and Effects, underlying Vulnerabilities, Barriers to adapt and Resilience Building Needs

Table 27: Summary of Vulnerability Assessment focusing on localized Climate Change Impacts/ Hazards and Effects, underlying Vulnerabilities, Barriers to adapt and Resilience Building Needs in Azerbaijan

District and Communities	Population	Main Climate Change Impact/ Hazards	Effects on Communities and Ecosystems	Underlying Vulnerabilities	Barriers to adapt	Identified Climate Resilience Building Needs
A.1 Greater Baku Region	Total Population: 2,300,500 Rural Population: 0 Urban Population: 2,300,500 Above 65: 151,800 women & 88,400 men Below 15: 220,100 girls & 248,100 boys Men: 1,144,300 Women: 1,156,200	Heat	Socio-economic: Urban heat waves particularly affect the **elderly, children, and people with medical conditions**, causing various illnesses, including heat cramps, heat exhaustion, heatstroke, and hyperthermia, particularly among those who cannot afford air conditioning at home and who live far from green areas where they can seek for respite from the heat. As highlighted by the World Bank and ADB in their 2021 *Climate Risk Country Profile of Azerbaijan*, climate-related hazards are likely to slow progress in improving the wellbeing of poorer groups, eradicating poverty and malnutrition. Additionally, heavy manual labour jobs are commonly among the lowest paid whilst also being most at risk of productivity losses due to heat stress and poorer businesses are least able to afford cooling devices. High temperatures are also a **deterrent to active lifestyles** and cycling/walking as a transportation modality. Continued high temperature affects porosity and durability of **infrastructure assets** leading to higher maintenance cost and increased road and building safety issues. Environmental: **Urban heat** is leading to changes in vegetation cycles affecting flora and dependent fauna that causes loss of green cover and biodiversity and rise in dust and pollution.	The following underlying vulnerabilities are present in all four regions: - Low quality drainage systems - Poor sanitation - Poor water infrastructure and a lack of access to year-round potable water - Lack of water retention facilities or adoption of nature-based solutions to limit water runoff during flash floods and store water for dry season - Low density of population making adaptation measures on scale difficult to reach all communities (except in Baku) - Poor agricultural practices (N/A in Baku) - Pressure on ecosystems from urbanization and transportation infrastructure development (highways, rail, ports) - Tenure insecurity and land conflict / disputes - Pollution/ waste management issues - Limited livelihood opportunities and unemployment because of poor economic diversity - Increasing discrepancy between poor and wealthy communities, particularly in cities - Poor infrastructure design or maintenance (road, bridge, transport, housing etc.) that is susceptible to heat and flooding - Declining safety and increasing crime levels - Vulnerabilities to external shocks (fluctuation of oil prices) - Low adaptive capacity in terms of awareness	**Heat:** Replacement of natural land cover with dense concentrations of asphalt, concrete pavement, walls and roofs of buildings, and other surfaces that absorb and retain heat and drive higher local/surface temperatures. Hot exhaust air from air-conditioning units, particularly from office and residential blocks, hospitality buildings. Lack of green space to provide shading and cooling, particularly in areas where the old low-rise building stock is being demolished in favor of high-rise residential blocks without undergoing land-readjustment. Insulation in buildings and housing not adapted to heat affecting women, youth and the senior population disproportionately – but also, curtain walls in contemporary residential and office buildings that reflect sunrays on the surrounding context.	Green public space and connected green corridors to catalyze multiple co-benefits to the community including recreational space, enhanced biodiversity, places for walking, and opportunities for small-scale commercial development and attractive leisure activities.
A.2 Neftchala	Total Population: 89,200 Rural Population: 47900 Urban Population: 41300 Above 65: 5,600 women & 3,200 men Below 15: 9,200 girls & 10,100 boys Men: 44,200 Women: 45,000	Flooding Droughts Fluctuating sea level	Socio-economic: **Low water table** of the Kura River, low precipitation in the source region of the Kura River and unsustainable river water withdrawal upstream of the Kura River leads to drying out of the Kura River mouth during the dry season. This affects agricultural productivity as farmers rely on water from the Kura River for irrigation. Inflow of seawater into the Kura River during strong coastal winds leads to **salinization** of the river water up to 55km in land. Saltwater ingress has led to significant reduction in fish stocks for local fishermen and women affecting food diversity and income. Surrounding fertile land, groundwater wells, and aquifers show an increased level of salinity leading to reduced agricultural production and cash-based income opportunities which in turn increases poverty. In **drought** season, and where salinization levels of groundwater are high, access to water in wells is scarce which necessitates that communities need to buy potable water that is delivered by trucks from the Salyan Region. Scarcity of water impacts savings and hygiene measures that were critical during COVID-19 pandemic. Especially for elderly people and people with disabilities, the commute to buy water from water points during times of water scarcity is a burden. **Floods** also lead to loss of property, damage to critical infrastructure assets, agricultural lands, loss of agricultural production and reduced cash-based income for people working in the agricultural sector. Stagnant water resulting from floods causes an increased risk of an outbreak of water-borne disease such as dysentery and cholera. **Fluctuation of sea levels leads** to a receding water level, exposing new fragile areas of land to development. The fluctuation of sea level also contributes to salinization of the Kura River. Sea level fluctuation also altered the location of fishing breeding grounds requiring fishers to sail out further from the shoreline to find adequate amounts of fish. Rising petrol costs and longer distance reduces the cash-income of fishermen and women. Environmental: Prolonged **droughts** and **water scarcity** lead to loss of vegetation which in turn leads to loss of breeding grounds for birds and small mammals and loss of pollinating activities from insects, and thus loss of biodiversity. **Salinity** of Kura River affects production of crops, pastures and trees by interfering with nitrogen uptake, reducing growth and stopping plant reproduction. Illegal housing built on new fragile land areas along the receding shore due to **sea level fluctuation** illegally discharge of wastewater into the Caspian Sea causing increased algae production adjacent to the shore. The overgrowth of algae consumes oxygen and blocks sunlight from underwater plants. Lack of oxygen threatens aquatic life and biodiversity of flora and fauna. **Flooding:** Floodwater is contaminated with pollutants such as agricultural pesticides, industrial chemicals, debris, and sewage. Contaminated floodwater enters ecosystem on land and in the ocean affecting soil and water quality, disrupting delicate ecosystems such as the Kura River delta and coral reefs. Contaminated water adversely impacts breeding grounds, fertility of soil for vegetation, increase algae production which in turn threatens aquatic life and biodiversity of flora and fauna.		**For all main climate hazards** Lack of communication protocol for early warning to trigger preparedness and mitigate the effects on communities. Lack of local authority capacity and technology to monitor and communicate heightened climate risks early. Lack of government funding to establish adequate monitoring and warning system. **Hazard specific:** **Floods** Lack of permeable infrastructure and surfaces Poor drainage system Inadequate solid waste management and litter causing clogging of canals and drainage systems. **Droughts** Lack of water retention facilities Lack of water management systems Lack of drought resistant vegetation Reliance on groundwater which can be affected by salinization **Sea level fluctuation** A unique phenomenon in the Caspian Sea means that there is lack of research, scientific knowledge and feasible adaptation options.	Tracking of water discharge, velocity, water table levels, and salinity of the Kura River as well as wind speed from the Caspian Sea. Real-time monitoring system for climate hazard data and better dissemination of information among population. Wide-spread communication protocol in times of heightened climate risks for better community preparedness and action, to ensure that early warning systems reach persons with disabilities and older persons at the time of disaster, while taking into account the gender differentiated vulnerabilities. Involvement of local communities and youth volunteer groups in the implementation of nature-based solutions

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District and Communities	Population	Main Climate Change Impact/ Hazards	Effects on Communities and Ecosystems	Underlying Vulnerabilities	Barriers to adapt	Identified Climate Resilience Building Needs
A.3 Astara	Total Population: 110,500 Above 65: 5,700 women and 3,200 men Below 15: 12,900 girls & 14,600 boys Women: 54,900 Men: 55,600	Drought and water scarcity	Socio-economic: **Water shortages arising from reduced precipitation, and higher temperatures** leading to water scarcity and limited access to water for agricultural and household purposes. Consequently, this leads to reduced agricultural productivity. Water scarcity occurs seasonally and necessitates that communities buy potable water, and arrange the delivery of trucked water for their daily needs, including sanitation. Environmental: **Water scarcity** leads to loss of vegetation which in turn leads to loss of breeding grounds for birds and small mammals and loss of pollinating activities from insects, and thus loss of biodiversity.	of and knowledge to address climate change of local authorities and population - Lack of geo-referenced Risk Maps	**Water scarcity** Lack of water treatment and ability to recycle water for household and agricultural use Lack of technology and funding for technology to harvest rainwater Lack of community awareness for sustainable water consumption	Access to year-around water for irrigation and household purposes through rainwater harvesting and widening rainwater catchment areas. Integrated water management planning and recycling of stormwater and greywater. Public education of sustainable water practice to avoid overconsumption, outdated irrigation methods. Monitoring of water withdrawal to measure sustainable consumption. Stormwater recycling solutions for irrigation purposes to be replicated by individual households, private sector and local authorities.

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ANNEX 3: National Priorities Analysis

Table 28: National Climate Change Priorities Analysis in Azerbaijan

Climate Change Strategic Focus Areas	Relevant Programme Areas	Relevant Policy Actions
Agriculture and Food Security	Review and development of macro-level policies for mainstreaming climate change adaptation into the agricultural sector. Governance approach to problem solving, empowerment (technical, economic, social and cultural) of key stakeholders to take climate change adaptation action.	Development of policy refinement and decision-making process. Development of program for managing agricultural inputs and products based on greater compatibility and productivity. Building and implementing of intergovernmental mechanism for decision making; enhanced economic, social and cultural capacities. Review and development of technical programs, education and research with the aim of developing the ability to adapt to climate change in the agricultural sector.
Disaster Preparedness and Response	Disaster preparedness at the local level. Increase the safety and resilience of society, prevent and reduce the risks of accidents.	Identification of vulnerable villages through collaboration with relevant agencies and local participation, aiming to mitigate the impact of natural disasters. Empowerment of local governments to formulate and enforce disaster prevention and management plans at the grassroots level. Promotion of social capital by encouraging active involvement of individuals and local institutions in decision-making processes affecting their communities. Strengthening disaster preparedness and response mechanisms nationwide to effectively tackle emergencies. Raising public awareness, particularly through education, to minimize risks and enhance societal resilience against disasters. Provision of sustainable resources in disaster risk management to support long-term resilience-building efforts.
Natural Resource Management	Vision and strategy is needed for managing non-oil natural resources; scheme of dividing local resources with municipalities; proper taxation	Plan and strategy for non-oil sector natural resource management.
	Regional and rural climate-oriented development	Development of alternative and adaptive livelihood promotion programs in local and rural communities. Review of regional development policies in terms of climate change adaptation principles. Climate change adaptation sensitive nature tourism.
	Establishment of a management system compatible with climate change	Complete studies, evaluate and review policies and regulations. Improve and develop biological resource conservation measures to adapt to climate change. Completion of the country's environmental monitoring system. Establishment of a sustainable development system in the exploitation of natural resources. Integrated management of compatible ecosystems. Provide a program for the management of natural resources and biodiversity of the country.
	Establish a system of compensatory and supportive measures	Develop macroeconomic and social development plans, building on an Integrated Coastal Zone Management Plan.
	Development of research, extension, cultural, public education and training of human resources	Upgrading the level of expertise of the country. Public awareness. Targeted development and alignment in research projects.
Equitable Social Development	National programs on development of regions; social development; employment etc	Alignment and harmonization of national programs with international practice
	Benefit of society from women's human capital in the process of sustainable and balanced development	Strengthening the organizational position of women's affairs.
	Economic growth and development based on justice	Exploring innovative pathways for generating employment. Skills development and professional knowledge promotion. Support for small and home-based businesses. Supporting knowledge-based jobs.
	Regional balance, rural development, and empowerment of vulnerable groups	Allocation of export revenue from crude oil and net gas condensate exports of natural gas, respectively, third to oil-rich and gas-rich provinces and two-thirds to less developed regions and cities.
Energy, Industrial and Infrastructure Development	Alternative energy; green development and economy	Alignment and emphasis on sustainable energy and infrastructure development. Management of energy consumption, water, raw materials, equipment and paper, reduction of waste materials and their recycling in buildings and vehicles, in all executive bodies and public non-governmental organizations and institutions within the framework of relevant laws.
	Upgrading the level of technology in the country's industries and achieving advanced and strategic technologies	Expand research and development. Support the generation of innovation potential in the country through supportive systems. Strengthen the cooperation of scientific, educational, research and industrial centres of the country. Constructive interaction with advanced scientific and industrial centres of the world. Assess existing comparative advantages and discover and create new comparative and competitive advantages.
Water Security and Management	Adaptation and integrated water management	Developing a comprehensive water cycle management system based on the concepts of sustainable development throughout the country's watersheds. Improving water depletion, supply, and consumption while considering their economic, security, and political worth. Increasing water extraction and decreasing natural and man-made water waste in the country to the greatest extent possible. Compilation of a comprehensive program for the implementation of dam, watershed, aquifer, and irrigation networks, as well as equipping and leveling land, maintaining water quality, dealing with drought, flood prevention, and recycling and using non-conventional water, as well as promoting knowledge and techniques and bolstering the role of people in extraction and exploitation. Containment of water that leaves the country and the importance of utilizing shared water resources.

Table 29: Regional Climate Change Priorities Analysis in the Caspian Sea Region

Climate Change Strategic Focus Areas	Relevant Programme Areas	Relevant Policy Actions
Water Sea Level Fluctuations	Scientific research on the implications of the sea level fluctuations of the Caspian Sea	Science Policy platform on climate change adaptation. Clearing House Mechanism on Climate Change related information. Climate Change Integrated Coastal Zone Management Guidelines.
	Measures and procedures to alleviate implications of the sea level fluctuations of the Caspian Sea.	
Biodiversity Protection	Natural ecosystems restoration of the coastal zones	Ecosystem based coastal planning.
Combatting Land-based source of Marine pollution	Prevention, control, reduction and elimination of land-based source of pollution	Improved management of solid waste. Improved management of the sewage system.
Climate Change related data and information	Regional programme to improve the climate change related knowledge in the Caspian Sea region	Science Policy platform on climate change adaptation. Clearing House Mechanism on Climate Change related information.

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ANNEX 4: Overview of Consultations, including Objectives, Outcomes and Conclusions

Table 30: Stakeholder Consultations in Azerbaijan

Date	Stakeholder	Consultation Objective	Outcome	Conclusion
October 2018 – December 2020	Ministry of Ecology and Natural Resources (national government)	Focal point role to AF and lead of National Steering Committee; raising awareness about project idea and explore areas of synergy; provide input and feedback on Pre-Concept Note and Concept Note; discussions on vulnerability criteria and site selections	Instrumental part of the project at all levels, both at Caspian Sea regional scale as well as national and local components	Recommendation for signature of Memorandum of Understanding to institutionalise the relations at executive level of both the Ministry and UN-Habitat
January 2019 – December 2020	State Committee for Urban Planning and Architecture (national government)	Building awareness about project idea and explore areas of synergy; provide input and feedback on Pre-Concept Note and Concept Note; discussions on vulnerability criteria and site selections; discussion on potential interventions	Instrumental part of the project at all levels, both at national and local scale; implementation of Baku Master Plan support	Recommendation for signature of Memorandum of Understanding to institutionalise the relations at executive level of both the Ministry and UN-Habitat
October 2018 – December 2020	United Nations Resident Coordinator	Discussion about possible involvement; political/ diplomatic dimension of engagement; UN coordination and collaboration – alignment with UN system-wide strategy on sustainable urbanisation	Cooperation and support ensured	More active involvement especially using their connections with sector ministries and government
August 2019 – December 2020	United Nations Food and Agriculture Organization	Discussion about possible involvement; alignment with ongoing projects	Cooperation and support ensured	More active involvement especially using their connections with sector ministries
August 2019 – December 2020	United Nations Development Programme	Discussion about possible involvement; alignment with ongoing projects	Cooperation and support ensured	More active involvement especially using their connections with sector ministries
August 2019 – December 2020	International Organization for Migration	Discussion about possible involvement; implementing partner for nature-based solutions and livelihoods/ skills development component	Cooperation and support ensured; initial ideas for local interventions and approach discussed	More active involvement especially using their connections with sector ministries
December 2019 – April 2020	World Bank	Discussion about possible involvement; alignment with ongoing projects	Cooperation and support ensured	More active involvement especially using their connections with sector ministries
October 2018 – December 2020	ADA University (research/ academia)	Discussion about possible involvement; alignment with ongoing projects	Cooperation and support ensured; clear picture on the project; interest to be part of the project; involvement of faculty of policy analysis and economics to the project	More active involvement especially using their connections with academia; support to the project; willingness to be hub for the project; recommendation for signature of Memorandum of Understanding to institutionalise the relation
January – April 2020	Albert Speer and Partner (private sector)	Discussion about possible involvement; alignment with ongoing projects	Cooperation and support ensured	More active involvement especially using their connections with sector ministries and Greater Baku region
January – February/ August 2020	Port Baku (private sector)	Discussion about possible involvement; alignment with ongoing projects; feedback on involvement of the Port	Cooperation and support ensured; involvement to the project; readiness to assist	More active involvement especially using their connections with government and private sector entities; willingness to be part of the project.
2 October 2020	Ministry of Agriculture	Building awareness about project idea and explore areas of synergy; provide input and feedback on Pre-Concept Note and Concept Note; discussions on vulnerability criteria and site selections; discussion on potential interventions	Instrumental part of the project at all levels, both at national and local scale; implementation of rural-urban components and land management	More active involvement especially using their connections with national and local level decision makers
July - August 2020	Representatives of 4 regions where project is intended to be carried out	To explain them about he projects and get their feedback	Ready to help; interested in such project; would be ready to support to have at least some employment opportunities for their respective communities; interested in the innovative nature of the project in terms of local development	More explanations at local/ municipality level about the benefits of the project needed in order to confirm local interventions and climate change adaptation measures
2 August 2020	Academy of Science (research/ academia)	Description of the project; presentations on major outcomes of the project; getting feedback on ion the vulnerability criteria and target area selection	Involving various institutions of the Academy; getting advice on site selections; formulating better picture of the project	Support and encouragement for the project; support for future initiatives. recommendation for signature of Memorandum of Understanding to institutionalise the relation
16 November 2020	Temiz Sheher, Garbage Processing Plant in Baku	Discussion about problems of garbage collection in Baku and surrounding areas	Supportive of any garbage collection initiatives	Involve them more at higher level; they have good experience
7 March 2022	United Nations Food and Agriculture Organization	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project	Cooperation and support ensured	More active involvement especially using their connections with sector ministries
7 March 2022	United Nations Development Programme	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project	Cooperation and support ensured	More active involvement especially using their connections with sector ministries
9 March 2022	Ministry of Ecology and Natural Resources of Azerbaijan	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project	Cooperation and support ensured	More active involvement especially using their connections with national and local level decision makers
9 March 2022	Ministry of Ecology and Natural Resources of Azerbaijan	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project	Cooperation and support ensured	More active involvement especially using their connections with national and local level decision makers
9 March 2022	Ministry of Ecology and Natural Resources of Azerbaijan	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project	Cooperation and support ensured	More active involvement especially using their connections with national and local level decision makers
10 March 2022	Neftchala ExCom, Neftchala	Discussion on the existing challenges in rayon from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities for the project	Cooperation and support ensured	More active involvement especially using their connections with local level decision makers
10 March 2022	Astara ExCom, Astara	Discussion on the existing challenges in rayon from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities for the project	Cooperation and support ensured	More active involvement especially using their connections with local level decision makers
11 March 2022	Ministry of Ecology and Natural Resources of Azerbaijan	Discussion on the existing challenges in the country from the perspectives of the climate change adaptation, on-going projects dealing with them and potential pilot activities and sites for the project	Cooperation and support ensured	More active involvement especially using their connections with national and local level decision makers
28 June 2022	Neftchala District Executive Authority	Presentation and discussion of potential interventions at local level in Neftchala, as well as conduct a field assessment	Support by authorities for establishing an early warning system for salinization, droughts and flooding in Neftchala in the framework of the project	Support and encouragement for the project, more active involvement especially using their connections with local level decision makers

29 June 2022	Baku City Executive Authority	Presentation and discussion of potential interventions at local level in Baku, as well as conduct a field assessment	Support by authorities for reducing heat risk and greening via establishing a demonstration site of the Green Corridor in Baku in the framework of the project	Support and encouragement for the project, more active involvement especially using their connections with local level decision makers
30 June 2022	Astara District Executive Authority	Presentation and discussion of potential interventions at local level in Astara, as well as conduct a field assessment	Support by authorities for improving water security and management through rainwater harvesting and integrated water management planning in Astara in the framework of the project	Support and encouragement for the project, more active involvement especially using their connections with local level decision makers
1 July 2022	Ministry of Ecology and Natural Resources of Azerbaijan	Presentation and discussion of potential interventions at local level in Neftchala, Baku and Astara	Support to intervention ideas in selected locations in the framework of the project	Support and encouragement for the project, more active involvement especially using their connections with national and local level decision makers
1 July 2022	Ministry of Ecology and Natural Resources of Azerbaijan	To present and get feedback on intervention ideas, as well as to inform about next steps	Support to intervention ideas in the framework of the project	Support and encouragement for the project, more active involvement especially using their connections with national and local level decision makers
1 July 2022	Azerbaijan Hydrometeorological Service	Discussion of establishing an early warning system (Hydrometeorological Station) for salinization, droughts and flooding in Neftchala	Support for the mentioned intervention idea	Support and encouragement for the project, and establishing an early warning system
15 May 2023	Neftchala District Executive Authority	Update on the proposal and confirmation of the need for the installation of an EWS in Neftchala; visit to their (under-resourced) monitoring station	Support for the mentioned intervention idea and the development of a geo-referenced Hazard Map	Support and continued encouragement for the project
15 May 2023	Astara District Executive Authority	Update on the proposal and confirmation of the need for support in addressing their flooding problem in spring and drought in summer.	Support for the mentioned intervention idea	Support and continued encouragement for the project
15 February 2024	Ministry of Ecology and Natural Resources of Azerbaijan	Update on the opportunity to re-submit the proposal for Azerbaijan as a single-country	Support to the re-submission and required endorsement letter	Support and continued encouragement for the project
16 February 2024	State Committee for Urban Planning and Architecture (SCUPA)	Update on the opportunity to re-submit the proposal for Azerbaijan as a single-country and discussed the possibility to launch the Green Corridor project during COP29	Support to the re-submission and required endorsement letter	Support and continued encouragement for the project

Table 31: Stakeholder Analysis

Stakeholder Category	Stakeholder Description	Role in Project	Stakeholder Requirements	Importance	Involved Stage
National government	Ministry of Ecology and Natural Resources	Leading Executive Entity	Lead of National Steering Committee	High	All stages
	Ministry of Foreign Affairs	Supporting Executive entity	Institutional support	High	Implementation
	State Committee for Urban Planning and Architecture (SCUPA)	Supporting Executive Agency	Technical support and member of the National Steering Committee; Beneficiary of project capacity development	High	All Stages
	Ministry of Internal Affairs	Collaborator/Executive	Technical support and coordination with local governments	Medium	All Stages
	Ministry of Finance	Financing, Supporting Decision Making	Technical support	Medium	Implementation
	Ministry of Labour and Social Protection	Awareness, Supporting Decision Making	Technical support and member of the National Steering Committee; Beneficiary of project capacity development	High	All stages
	Ministry of Social Affairs	Awareness, Supporting Decision Making	Technical support and member of the National Steering Committee; Beneficiary of project capacity development	High	All stages
	Ministry of Energy	Collaborator/ Executive	National Steering Committee; Beneficiary of project capacity development	High	Proposal, Implementation
	Ministry of Agriculture	Collaborator/ Executive	National Steering Committee; Beneficiary of project capacity development	High	Proposal, Implementation
	Ministry of Culture	Supporting Decision Making	Technical support	Medium	Proposal
	Ministry of Economy	Financing, Supporting Decision Making	Technical support	Low	Proposal
	Azerbaijan Hydrometerological Service	Capacity Building, Data Transfer, Supporting Decision Making	Technical support and member of National Steering Committee	Medium	Concept Note, Proposal
	Ministry of Emergency Situations	Supporting Decision Making, Awareness	Technical support	Medium	Concept Note, Proposal
	Ministry of Youth and Sports	Supporting Decision Making, Awareness	Technical support	Low	Proposal, Implementation
	Ministry of Defence	Supporting Decision Making,	Technical support	Low	Proposal
	Ministry of Education	Awareness, Capacity Building, Knowledge Transferring	Technical support	Medium	Proposal, Implementation
	State Statistical Committee	Supporting Decision Making, Knowledge Transferring	Technical support	Medium	All Stages
Academia and Research	ADA University	Capacity Building, Supporting Decision Making, knowledge Transferring	Technical support	Medium	Proposal, Implementation

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	Academy of Science	Capacity Building, Supporting Decision Making, knowledge Transferring	Technical support	Medium	Proposal, Implementation
Private Sector	Albert Speer and Partner	Financing, Partnership, Development	Technical support, implementation partner	Medium	All Stages
	Port Baku	Financing, Partnership, Development	Technical support, implementation partner	Medium	Implementation
	British Petroleum	Financing, Partnership, Development	Technical support, implementation partner	Low	Implementation
Non-governmental organizations	International Dialogue for Environmental Action	Awareness, Supporting Decision Making	Technical support, implementation partner	Medium	All stages
Local government	Municipality of Greater Baku Region	Capacity Building, Supporting Decision Making, Knowledge Transferring	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
	Local Executive Authorities	Capacity Building, Supporting Decision Making, Knowledge Transferring	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
Local communities	Vulnerable Groups (Elders, Disables, low-income people, unemployed, etc.)	Affected Groups, need to be strengthen, supported, advocated	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
	Women (Household head, disable, etc.)	Awareness, Supporting Decision Making	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
	Agriculture workers, Fishermen, Seasonal Workers, Tourism sector workers	Awareness, Supporting Decision Making	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
	Tourists	Awareness, Supporting Decision Making	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
	Migrants, Refugees	Awareness, Supporting Decision Making	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
Service providers	Azersu for water supply and waste management, Azerishiq and Azerenerji for electricity, Azerigaz for natural gas, Azeristiliktechizat for district heating	Collaborator/ Executive	Technical support, implementation partner; Beneficiary of project capacity development	High	All Stages
United Nations	Resident Coordinator	Coordinator	Institutional support	High	All Stages
	United Nations Development Programme (UNDP)	Collaborator	Coordination, technical support and alignment of programming; implementing partner	High	All Stages
	United Nations Food and Agriculture Organization (FAO)	Supporting Decision Making	Coordination, technical support and alignment of programming; implementing partner	High	All Stages
	International Organization for Migration (IOM)	Collaborator	Coordination, technical support and alignment of programming; implementing partner	High	All Stages
International Financing Institutions	World Bank	Financing, technical support	Upscaling and financing of interventions	High/ medium	All Stages
	European Bank for Reconstruction and Development (EBRD	Financing, technical support	Upscaling and financing of interventions	Medium	Implementation
	Kreditanstalt für Wiederaufbau (KfW)	Financing, technical support	Upscaling and financing of interventions	Medium	Implementation

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Table 32: Community Survey in Azerbaijan

Location	Date	Name	Sex	Occupation	Comment
A.1: Siyazan Region	June – December 2020	Mr. Kanan Karimli,	Male	Head of 3rd Regional Department of Ministry of Environment	Due to the prevailing travel and contact limitations to and within the respective communities and municipal areas in Azerbaijan, only informal conversations could be held. For the upcoming planned elaboration of the Project Proposal further consultations will have to be held to refine the findings.
	June – December 2020	Mr. Senen Mustafayev	Male	Local resident	
	2 November 2020	Ms. Gulnar	Female	Housewife	
	2 November 2020	Ms. Nazaket	Female	Housewife	
A.2: Greater Baku Region, Pirallahi	June – December 2020	Mr. Rufat Makhmud	Male	Advisor, State Committee on Urban Planning and Architecture	
	June – December 2020	Mr. Elkhan Aliyev	Male	Deputy Head of Pirallahi Municipality	
	3 December 2020	Mr. Latif	Male	Taxi driver	
	3 December 2020	Mr. Mehman	Male	Former fisher, unemployed	
A.3: Neftchala Region	June – December 2020	Mr. Kanan Karimli	Male	Head of 3rd Regional Department of Ministry of Environment	
	June – December 2020	Mr. Hikmat Aliyev	Male	Local resident	
	17 October 2020	Ms. Sabina	Female	Teacher	
	17 October 2020	Mr. Mukhtar	Male	Pensioner	
	17 October 2020	Mr.Vagif	Male	Municipality employee	
A.4: Lankaran/ Astara Region	June – December 2020	Mr. Kanan Karimli	Male	Head of 3rd Regional Department of Ministry of Environment	
	June – December 2020	Mr. Tapdig	Male	Unemployed	
	24 October 2020	Mr. Elchin	Male	Farmer	
	24 October 2020	Mr. Yaver	Male	Trader	

Table 33: Stakeholder Consultations in the Caspian Sea Region

Date	Stakeholder	Consultation Objective	Outcome	Conclusion
6 February 2020	Ms. Zeljka Skaricic, Priority Actions Programme/ Regional Activity Centre (PAP/RAC), Croatia	Explore lessons learnt from Integrated Coastal Zone Management relevant to the Mediterranean region. Discuss adaptability of lessons learnt to Caspian Sea region, and the Republic of Azwerbaijan in particular.	The principal activity of PAP/RAC is Integrated Coastal Zone Management. This approach to managing coastal zones is recognized as the way forward for the sustainable development since the 1992 Rio Conference for its ability to provide solutions to the complex environmental, social, economic and institutional problems of the coastal zones. PAP/RAC's experience in the Mediterranean region has been applied to the Red Sea and the Black Sea regions Training centre in Split, Croatia offers training courses for peers on Integrated Coastal Zone Management processes from national and local governments; the training centre would be very interested in working out an applied training programme for the Caspian Sea stakeholders to support countries on their path towards sustainable coastal development. Caspian Sea can draw experiences from Mediterranean Strategy for Sustainable Development (MSSD).	PAP/RAC offers support to Caspian Sea littoral states on their path towards sustainable coastal development. Support could be realized through activities: (1) on-the-ground activities (Coastal Area Management Programmes - CAMPs, coastal or ICZM plans, national ICZM strategies, etc.); (2) capacity building (different trainings, workshops, consultations, conferences, on-the-job trainings related to particular projects, as well as through MedOpen – PAP/RAC's on-line training on ICZM); (3) awareness raising (different awareness-raising activities in the framework of the on-the-ground projects); and (4) development of methodologies, providing support to development of regional and national policies and preparation of legal documents.
25 February 2020	Regional Steering Committee – Tehran Convention Secretariat (National Liaison Officers and focal points of sector ministries from the Caspian Sea littoral States)	Familiarize the National Convention Liaison Officers with the pre-concept note" Urbanization and Climate Change in the Caspian Sea region" and receive their feedback.	The meeting participants received information on major elements of the project including: 1. Scope of the project concept, including information related to three geographical scopes of the project. 2. Objectives of the project concept to tackle the impacts of the main identified climate change related hazards. 3. Proposed climate change adaptation measures for highlighted hazards will be considered in relation to urbanization processes and through the Integrated Coastal Zone Management. 4. Mains streams of work under the regional components in the framework of the Tehran Convention (Aide Memoire annexed is to Concept Note).	The meeting participants were familiarized with the project concept note. Some of the initial questions were raised regarding the project objective and its implementation. The meeting participants were also requested to liaise with the relevant officials in their respective countries to seek additional feedback on the Concept Note.
28 July 2020	Regional Steering Committee – Tehran Convention Secretariat (National Liaison Officers and focal points of sector ministries from the Caspian Sea littoral States)	The objective of this consultation was to seek additional feedback from the National (Teheran) Liaison Officers and other relevant officials regarding the regional components under the Tehran Convention which are contained in the Concept Note.	The meeting participants were well familiar with the objective of the Concept Note. The regional part of the Concept Note was found accurate and the previously received written comments were integrated in the new version of the Concept Note (Aide Memoire annexed is to Concept Note).	In general, the participants found the presented regional part of the Concept Note well drafted and acceptable. It was also agreed to share the more advanced draft Concept Note containing the information on the national interventions planned in Azerbaijan with the meeting participants.
25 May 2021	Regional Center of Excellence in Split, Croatia – Mediterranean Sea on Integrated Coastal Zone Management Planning	Explore lessons learnt from Integrated Coastal Zone Management relevant to the Mediterranean region Discuss adaptability of lessons learnt to Caspian Sea region	Good Practices for Integrated Coastal Zone Management in the Mediterranean Region and adaptation to Caspian Sea Region. Outlining of training programme for sector Ministries in Caspian Sea littoral states.	Caspian Sea regional programme on urbanization and climate change adaptation can draw experiences from Mediterranean Strategy for Sustainable Development (MSSD).Support could be realized through activities: (1) on-the-ground activities; (2) capacity building; (3) awareness raising; and (4) development of methodologies, providing support to development of regional and national policies and preparation of legal documents.
25 October 2021	Regional Steering Committee – Tehran Convention Secretariat (National Liaison Officers and focal points of sector ministries from the Caspian Sea littoral States)	3rd Consultative Meeting of the Tehran Convention Interim Secretariat on the regional component of the Adaptation Fund proposal I Urbanisation and Climate Change Adaptation in the Caspian Sea Region.	It was agreed that the project team would share a more advanced draft of the list of activities that would display the interplay between regional and national components, including the timeline of the regional component before the next consultancy meeting in mid-November. It was also discussed and agreed that the operational schemes can be defined after the final list of the activities would be ready.	Meeting participants agreed to provide written comments for the workplan. It was also agreed to share the more advanced draft containing the information on the national interventions planned in Azerbaijan with the meeting participants.
10 November 2021	Regional Steering Committee – Tehran Convention Secretariat (National Liaison Officers and focal points of sector ministries from the Caspian Sea littoral States)	4th Consultative Meeting of the Tehran Convention Interim Secretariat on the regional component of the Adaptation Fund proposal I Urbanisation and Climate Change Adaptation in the Caspian Sea Region	It was agreed to incorporate the comments of the stakeholders into the work plan.	It was decided to extend the deadline for providing comments on the work plan until 16 November 2021. It was also agreed that the project team will consider all proposals and provide the final draft of the work plan for discussion before the next meeting, which will be held in late November or early December 2021.
23 November 2021	Ms. Zeljka Skaricic, Priority Actions Programme/ Regional Activity Centre (PAP/RAC), Croatia	Explore lessons learnt from Integrated Coastal Zone Management relevant to the Mediterranean region. Discuss adaptability of lessons learnt to Caspian Sea region	Good Practices for Integrated Coastal Zone Management in the Mediterranean Region and adaptation to Caspian Sea Region	Caspian Sea programming on urbanization and climate change adaptation can draw experiences from Mediterranean Strategy for Sustainable Development (MSSD). Support could be realized through activities: (1) on-the-ground activities; (2) capacity building; (3) awareness raising; and (4) development of methodologies, providing support to development of regional and national policies and preparation of legal documents.
7 December 2021	Regional Steering Committee – Tehran Convention Secretariat (National Liaison Officers and focal points of sector ministries from the Caspian Sea littoral States)	5th Consultative Meeting of the Tehran Convention Interim Secretariat on the regional component of the Adaptation Fund proposal I Urbanisation and Climate Change Adaptation in the Caspian Sea Region	It was agreed to incorporate the comments of the stakeholders into the work plan, agree it with them and present the final version in March 2022.	Meeting organizers informed the meeting participants that the final draft document of the entire programme will be provided in March. The meeting participants agreed to send comments and ideas to the workplan by 10 December 2021. The next regional meeting will be held in January or February 2022.
1 February 2022	Regional Steering Committee – Tehran Convention Secretariat (National Liaison Officers and focal points of sector ministries from the Caspian Sea littoral States)	Consultation with Scientists regarding the "Urbanization and Climate Change Adaptation in the Caspian Sea Region"	Agreement on list of impacts of the main identified climate change related hazards.	It was agreed to concentrate the project aims at tackling the impacts of the main identified hazards: (i) sea level fluctuation and potential decrease; (ii) increased floods; (iii) more intense droughts in the Caspian Sea coasts, particularly in Azerbaijan.
9 February 2022	Regional Steering Committee – Tehran Convention Secretariat (National Liaison Officers and focal points of sector ministries from the Caspian Sea littoral States)	6th Consultative Meeting of the Tehran Convention Interim Secretariat on the regional component of the Adaptation Fund proposal I Urbanisation and Climate Change Adaptation in the Caspian Sea Region	The final draft of the list of activities was agreed by all stakeholders	It was decided to finalize the work plan and list of activities based on the discussions and it was agreed that there would be minor modifications to the outputs and activities after the national component would be finalized.
5-7 June 2023	CASPISNET Meeting 2023 held at ADA University, Baku Azerbaijan	Attended Annual Meeting of the Caspian Integrated Scientific Network Organisation (CASPISNET), along with international and national researchers	Advocacy on impact of climate change on the Caspian Sea	UN-Habitat will continue its engagement with CASPISNET and will support the organisation of a panel to discuss regional climate change at the National Urban Forum 2023 that will be held in Baku, 29 September – 01 October.
February/ March 2024	Ministry of Ecology and Natural Resources, Azerbaijan	UN-Habitat mission to Baku, Azerbaijan	Discussion on the next steps of a single country submission to the Adaptation Fund, following a programmatic approach.	UN-Habitat, UNEP and IOM shall proceed to elaborate the single country submission of Azerbaijan to the Adaptation Fund following a programmatic approach. The endorsement letter by the NDA will be issued to support the submission.

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ANNEX 5: Programme Investment Sheets under Component 2

Please note that further information about all the investments presented below can be provided upon request. Only key information has been presented here due to space constraints.

Target areas in Azerbaijan – Evaluation of Interventions and Cost Effectiveness

The selection scores for identifying target communities were based on six criteria, each with specific weights and scoring methods. The criteria included: (1) type of hazard, prioritized by intensity (scored 1 to 3, with higher scores for more frequent occurrences); (2) hazard level, determined by occurrence rate (low to high, scored 1 to 3); (3) number of potential beneficiaries, weighed against the largest impact versus cost; (4) cost-benefit analysis of potential interventions to address vulnerabilities and strengthen community resilience, described qualitatively (scored 1 to 3); (5) necessity of the proposed intervention, emphasized through stakeholder consultations and qualitatively described (scored 1 to 3); and (6) alignment with government priorities, also qualitatively described (scored 1 to 3). The cumulative scores from these criteria facilitated the identification of the most vulnerable communities for targeted interventions[17].

Table 34: Evaluation Matrix of Interventions

Settlement	Alternatives	Description Azerbaijan	Evaluation Criteria																							Total weighted score
			Type of hazard				Hazard level				Number of beneficiaries				Cost-benefit (Cost/ response to vulnerabilities)				Necessity of the proposed measure				Alignment with government priorities				
			Description	Score	Weight	Weighted score	Description	Score	Weight	Weighted score	Amount	Score	Weight	Weighted score	Description	Score	Weight	Weighted score	Description	Score	Weight	Weighted score	Description	Score	Weight	Weighted score	
Greater Baku Region	Alternative 1	Piralahi Island	Heat/ flooding	1	0,12	0,12	Low	1	0,14	0,14	15.000.000 USD	1	0,17	0,17	Low	1	0,17	0,17	Medium	2	0,14	0,28	Medium	2	0,14	0,28	1,16
	Alternative 2	Green corridor along the railway line	Heat/ drought	3	0,12	0,36	High	3	0,14	0,42	3.208.992 USD	3	0,17	0,51	High	3	0,17	0,51	Very high	3	0,14	0,42	High	3	0,14	0,42	2,64
	Alternative 3	Siyazan Region	Bio-hazard	2	0,12	0,24	Medium	2	0,14	0,28	3.500.000 USD	1	0,17	0,17	Medium	2	0,17	0,34	Low	1	0,14	0,14	Low	1	0,14	0,14	1,31
Neftchala	Alternative 1	Dredging rivers and canals and Improvement of drainage conditions	Flood/ drought	1	0,12	0,12	Medium	2	0,14	0,28	8.920.000 USD	1	0,17	0,17	Medium	2	0,17	0,34	Medium	2	0,14	0,28	Medium	2	0,14	0,28	1,47
	Alternative 2	Establishment of a city-wide early warning system for flood	Multi-hazard, including flood and drought	3	0,12	0,36	Very high	3	0,14	0,42	1.230.992 USD	3	0,17	0,51	High	3	0,17	0,51	Very high	3	0,14	0,42	Very high	3	0,14	0,42	2,64
	Alternative 3	Public parks and protection of biodiversity	Bio-hazard	2	0,12	0,24	Medium	2	0,14	0,28	1.200.000 USD	1	0,17	0,17	Low	1	0,17	0,17	Medium	2	0,14	0,28	Medium	2	0,14	0,28	1,42
Astara	Alternative 1	Protection scheme against landslides in remote rural areas	Heat	3	0,12	0,36	Medium	1	0,14	0,14	1.700.000 USD	1	0,17	0,17	Medium	2	0,17	0,34	Medium	2	0,14	0,28	Medium	2	0,14	0,28	1,57
	Alternative 2	Establishment of a Rainwater Harvesting system forpublic parks	Drought	3	0,12	0,36	Very high	3	0,14	0,42	977.500 USD	3	0,17	0,51	High	3	0,17	0,51	Very high	3	0,14	0,42	Very high	3	0,14	0,42	2,64
	Alternative 3	Establishment of a water recycling system in Public Buildings	Bio-hazard	1	0,12	0,12	High	2	0,14	0,28	5.000.000 USD	1	0,17	0,17	Low	1	0,17	0,17	Medium	2	0,14	0,28	Medium	2	0,14	0,28	1,3

[17] This section relates to *ANNEX 2: Vulnerability Assessment Summary with Focus on localized Climate Change Impacts/ Hazards and Effects, underlying Vulnerabilities, Barriers to adapt and Resilience Building Needs*

Alternative Measures and Rationale for local Interventions

While various adaptation measures were considered across three chosen locations in Azerbaijan, not all were deemed suitable for sustainable adaptation to climate variabilities or changes. Following extensive reviews and discussions with numerous stakeholders, including public institutions at both national and local levels, in Capital City Baku, Neftchala, and Astara districts, the programme development team concluded that focusing on specific adaptation measures in Capital City Baku and two secondary cities along the Southern coastline of the Caspian Sea, Nefchala and Astara, would be most beneficial.

These measures include developing green areas in densely urbanized parts of Baku in line with the strategic priorities of the Baku City General Plan 2040, establishing an Early Warning System in Neftchala City downstream of the river Kura (near its mouth at the Caspian Sea), and implementing rainwater harvesting in Astara City.

Table 35: Investment Sheet

Hazards	Risk and Vulnerability Level	Proposed by	Concrete Measures	Number of Beneficiaries	Female Beneficiaries	Persons with Disabilities	Youth and Children	Elderly	Unemployed	Estimated Overall Costs USD	Rationale
(A.1) Greater Baku Region											
Heat	High	Local government	Development of a portion of a green corridor	570,800 persons	285,500 persons	18,266 persons	127,517 persons	42,639 persons	21,177 persons	3.238.992 USD	Eastern Baku Bay stretches over 15 ha of brownfield sites, following a deindustrialization of the location. Over the past decade, this area was developed into a densely populated mixed used area, following economic growth resulting in increased land value and real estate demand, leaving almost no space for green urban areas much needed for both a healthier living condition of neighbouring communities but also flora and fauna. Thus, the new Strategic General Plan for Baku has prioritized the development of a green corridor along a derelict railway. It will counter the urban heat island effect felt by communities in the wider region. The proposed intervention will develop a pilot area of the corridor for further investments by the city government. The cost-benefit analysis has identified this intervention over the development of a green business park 70km south of Baku or the construction of a recreational boulevard in a sparsely populated island development within the Greater Baku region.
Drought/ floods	Low	Local government	Green business park development							6.000.000 USD	
(A.2) Nefchala											
Heat	High	Local government	Early Warning System	89,200 persons	41,300 persons	2,854 persons	8,800 persons	47,900 persons	19,300 persons	1.230.992 USD	Neftchala city is located downstream from a transboundary river Kura and during moment of severe heat and a fluctuating water table, the river and the agricultural land irrigated by the river water salinities. Not only does this impact the food security of the region but also has an effect on biodiversity. In order to predict severe heat waves and take active measures for protecting people, economy and environment, there is the need for reliable data on quantitative and qualitative parameters of water for decision makers to take action in due course (government bodies in national level as well as local authorities and wide public) Taking into account two critical incidents occurring during the past 12 years (floods in 2010 causing severe economic damage; drought in 2020), the Ministry of Ecology and Natural Resources as well as the local government prioritized an Early Warning System. This is going to allow them to properly manage the respective clusters of economy and water demand of population. It is going to be indispensable tool in production of data on this important transboundary river which can be also used for the future implementation of Water Strategy of the country being developed nowadays.
Drought	Medium	Local government	Rural irrigation scheme							10,000,000 USD	
(A.3) Astara											
Flooding	Medium	Proposal team, local government	Social housing for people affected by land slides	110,500 persons	55,000 persons	8,900 persons	4,100 persons	27,500 persons	3,563 persons	2,000,000 USD	The construction of a rainwater harvesting system for the coastline boulevard as well as a public building will showcase the water management aspects, both in terms of addressing drought and flash floods. The water will be used for irrigation of public and neighbourhood parks, contributing to a greener city, providing recreational facilities and a healthier living environment. Moreover, it contributes to the protection of biodiversity as during drought periods green spaces can be irrigated. This intervention was identified by the local government as the most cost-effective intervention with the largest benefit to the wider communities, including the most vulnerable who tend to stay within the vicinity of their neighbourhood.
Drought	High	Proposal team, local government	Rainwater harvesting system							1.573.666 USD	

Greater Baku Region - Output 2.1

(1) Hazard to be addressed by intervention and other relevant circumstances

The City of Baku is a large metropolitan area with a densely built environment and high and increasing temperatures. The hot season lasts over 3 months, from June to September, with an average daily high temperature above 27° during the hottest months of July and August (peaking to 31° in July). Due to the urban heat island effect, heat is a hazard for the city. In many areas of recent development this is more felt than in others due to the density of newly built super blocks and skyscrapers, but also due to reflective curtain walls, air conditioning units spying hot air, lack of trees, and large extents of asphalt and concrete. In addition, there is a general desire and need by citizens, particularly the younger ones, for additional green and public space, that can also catalyse alternative modes of transportation, leisure activities and sports, such as walking and cycling.

Figure 35: Former rail lines and site of the proposed hybrid green corridor

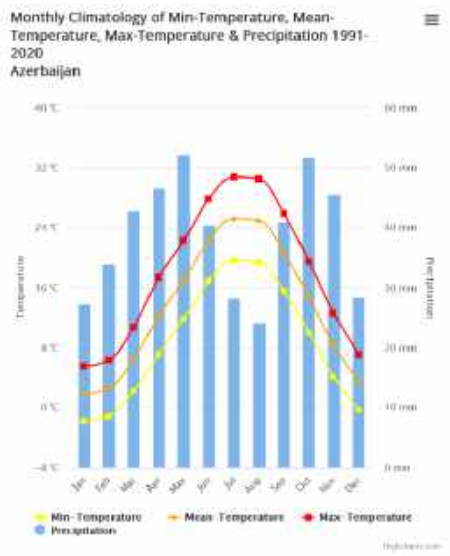

Figure 36: Monthly Climatology of Min to Max temperatures and precipitations between 1991 and 2021. Source: WB, Climate Change Knowledge Portal

Table 36: Summary Output 2.1

Deliverables	Development of a portion of the green corridor project
Beneficiaries	570,800 urban dwellers, tourists, and visitors
Budget	2.238.992 USD
Location	Baku City Centre, Azerbaijan

The 2020 - 2040 General Master Plan for Baku identifies several urban and environmental regeneration projects, including the conversion of disused cargo rail lines located just east of the city centre, into a hybrid, green public space as well as a light rail corridor. Consultations with government entities in Baku have confirmed how funding a demonstration site in this corridor could help the authorities to promote the reuse of vacant land and brownfields for the creation of much needed public open spaces in Baku. Similar initiatives (such as New York's High Line, Paris' Promenade Plantée, the Green Corridor in Valencia) have proven also important co-benefits in encouraging people to walk as an alternative to taking motorized transportation to work or school, promoting social connections, encouraging the set-up of creative activities as well as Small and Medium Enterprises (SMEs), with positive benefits on health, and the well-being of citizens, particularly stay-at-home mothers, children and the elderly while addressing an urban heat island effect.

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(2) Summary of concrete adaptation measure

Urban green spaces are proven to absorb CO2, release O3, decrease the temperature, enhance air quality and humidity, conserve soil and water, minimize noise pollution, cut down wind speed, and save soil from contamination and erosion. Green areas and corridors are an adaptive measure that can address **heat, as well as flooding,** by introducing natural landscapes that can help to balance the absorption and re-emission of the sun's heat by concrete buildings, curtain walls, asphalted roads, and other hard infrastructure. Urban trees are among the most powerful tools that architects and urban planners can use to help communities both mitigate and adapt to climate change. Trees are like outdoor air conditioners that operate as carbon sinks. Green areas and green infrastructure form part of critical flood risk management systems by absorbing excess water into the ground and preventing run-off. This nature-based solution to increase a city's absorbency ("sponginess") and tackle climate shocks has grown in popularity in recent years. They also provide multiple co-benefits to the community including public open space, enhanced biodiversity, places for walking and recreation, and opportunities for commercial development. The main objectives of the Hybrid Green Corridor project, as stated by the 2020 - 2040 General Master Plan for Baku, are the following:

- Enhances alternative connectivity within an area largely dominated by roads;
- Creates safe pedestrian and slow mobility connections between the areas of Gənclik and Bakı Bulvarı;
- Serves in parallel as attractive urban recreation, activity, and leisure space for visitors and local inhabitants (as an alternative to the exclusive and high-market Port Baku area that has been recently created nearby, on the Caspian Sea);
- Bridges education, start-ups, co-working, office spaces, new and old residential buildings (including very rundown social housing blocks), and active leisure opportunities; and
- Recreate a natural habitat that functions as a climate-active recreation spine.

Figure 37: Tall residential apartment blocks are being built along the abandoned rail tracks

Figure 38: In the background, an older and rundown residential block

The project will cover an **initial phase of the transformation and greening of the length of the corridor** (identified in coordination with SCUPA and the city authorities). It will include clean-up and remediation of the site and greening with native and drought-resistant plant species. Potential designs are shown below. Baku-based youth (male and female) volunteer groups will be engaged to contribute to the landscaping and planting activities. The plants will be watered through a hybrid system that would include a **rainwater harvesting system, water supply from the city, and drip irrigation**. The advantage of this hybrid system is the decrease the demand from the main water supply and lower maintenance costs. This demonstration site will help the national stakeholders to realize the relevance of this approach for the wider greening of corridor. The project will be supported by a **feasibility study** that will look into the most appropriate rainwater harvesting solutions, concrete horticultural plans, maintenance and remediation needs, that will include the identification of native and drought-resistant flowers, plants and trees; appropriate porous material for the walkways and seating.

In addition to the initial phase of the corridor, there will be an **advocacy and capacity development effort to encourage further urban climate adaptation initiatives and green financing** in the Greater Baku Region and the development of Investment Plans to catalyze further finance for the Hybrid Corridor – which constitutes an ideal legacy project for the World Urban Forum 13 that will be held in Baku in 2026. The training will focus on innovative finance mechanisms, including those that leverage private finance such as blended finance. A

draft Investment Plan for the remainder of the corridor will be developed as a result of the training. This Investment Plan will consider blended finance, encouraging the investments of the public and **private sector** in climate adaptation initiatives and commercial development along the green corridor, including possible sponsorships and donations in kind. To address a knowledge gap, a **Study** on the design of gender-sensitive green and public spaces will be commissioned to a reputed local NGO who will deploy most women and girls for this task. The investment will be strengthened through an **Environmental and Social Impact Assessment (ESIA) based on the Feasibility Study** and subsequent monitoring.

(3) Location of investments

The selected site is part of the **Baku City General Plan 2040.** It was identified in consultation with the Baku City Executive Authority and the State Committee for Urban Planning and Architecture (SCUPA). The relevant stakeholders led by the Municipality will be involved in the maintenance, upkeep and further development of the green corridor and its lateral connections. The capacity development on climate finance, draft investment plan, and private sector engagement will help to identify and mobilize further funding from the public and private sectors to complete the Green Corridor project and connect it to any other available pedestrian and/or green area in the proximity**.**

Figure 39: Site identified based on field visit

(4) Technical design

Figure 40. Conceptual Design of Corridor from Master Plan that foresees also the construction of a pedestrian bridge over the main Nizami Street

Figure 41. Design of public and green space in the Master Plan

(5) Cost effectiveness – Budgets and Beneficiaries

Table 37: Budget

Item	Location	Allocated budget (USD)		Sub-Totals (USD)
Executing Entity – personnel and office cost				Sub-Total: 338.992
Rehabilitation, construction and planting of initial green and public space site in the Hybrid Corridor	Baku	Equipment (e.g., plants, engineering, reconstruction, etc.)	290,000	Sub-Total: 1.750.000
		Maintenance forecast	80,000	
		Construction	840,000	
		Labour cost	440,000	

		Field missions for technical expertise and monitoring	10,000	
		Contractual Services	60,000	
Rainwater harvesting system for plants and greenspace	Baku	Maintenance forecast	90,000	Sub-Total: 795.000
		Construction	510.000	
		Labour cost	65,000	
		Field missions for technical expertise and monitoring	55,000	
		Contractual Services	30,000	
Feasibility study with concrete design plans, remediation needs, and native and drought resistant plant options[18]	Baku	Contractual Services	45,000	Sub-Total: 60,000
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	10,000	
Capacity development on urban climate adaptation and finance		Contractual Services	35,000	Sub-Total: 50.000
		Venue and refreshments	10,000	
		Translation/ Interpretation	5,000	
Environmental Impact Assessment Report (ESIA) and gender expertise and monitoring	Baku	Contractual Services	15,000	Sub-Total: 30,000
		Field missions for technical expertise and monitoring	10,000	
		Translation/ Interpretation	5,000	
Community consultations	Baku	Contractual Services	10,000	Sub-Total: 40,000
		Venue and refreshments	15,000	
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	5,000	
Draft investment plan to develop the remainder of the hybrid, green corridor, including considering blended finance	Baku	Contractual Services	40,000	Sub-Total: 65,000
		Workshop venue and catering (2 x 2 days each)	5,000	
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	5,000	
		Editing and layout design	10,000	
Private sector engagement in adaptation finance and commercial development along the green corridor	Baku	Contractual Services	20,000	Sub-Total: 60,000
		Workshop venue and catering (2 x 2 days each)	12,000	
		Field missions for technical expertise and monitoring	20,000	
		Translation/ Interpretation	3,000	
		Editing and layout design	5,000	
Recommendations for the design of gender- and age-sensitive green and public space based on a study	Baku	Contractual Services	40,000	Sub-Total: 50,000
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	2,000	
		Editing and layout design	3,000	
		TOTAL		**3.238.992 USD**

5b. Beneficiaries[19]

The number of beneficiaries is based on the number of people living in three districts (Nasimi, Khatai and Narimanov) that are in the area of the green corridor. Below are the numbers based on official statistics. Additional categories of key beneficiaries for which there is no data include migrants, single-parent households, seasonal and informal workers, tourists, and small business owners. The project is located in an old industrial and warehousing area that is being regenerated and converted to residential and offices spaces. Alongside older, high-density, and dilapidated housing blocks, new residential apartments are being constructed for middle-class buyers seeking to invest in this very central location – making it a very mixed-income area that would benefit from open-air initiatives that contribute to social integration.

[18] Including climate adaptation expertise on urban adaptation measures and blended finance.
[19] Source: https://www.azstat.org/portal/tblInfo/TblInfoList.do

Table 38: Beneficiaries

	Total	Female	Male
Total (District)	570,800	285,500	285,300
Urban	570,800	285,500	285,300
Elderly (65 +)*	42,639	21,327	21,312
Youth and children (under the age of 15)	127,517	63,781	63,736
Unemployed*	21,177	10,592	10,585
Persons with disabilities*	18,266	9,136	9,130

**Based on the national average due to a lack of localized data.*

(6) Relevant Stakeholders

The project idea has been developed in consultation with relevant national stakeholders, including the State Committee on Urban Planning and Architecture (SCUPA), the Ministry of Ecology and Natural Resources, and the Baku City Executive Authority. The project idea was also discussed by the National Steering Committee, which includes 17 government entities. The State Committee on Urban Planning and Architecture is the leading stakeholder for the Greater Baku (*Hybrid Green Corridor project*) with the Ministry of Ecology and Natural Resources of Azerbaijan, Baku City Executive Power, Khatai District Executive Power, ADA University, "Bakı Abadlıq Xidməti" LLC, State Tourism Agency of Azerbaijan identified as other important stakeholders. Given the importance of responding to the needs of the community, the project will consult with the local community, with attention to key target groups in the area including, women, youth, the elderly, and small business owners.

Neftchala - Output 2.2

(1) Hazard to be addressed by intervention and other relevant circumstances

Neftchala district is affected by both winter flooding and summer droughts. In 2017 and 2010, flooding caused severe damage to several districts and residents had to be evacuated from Neftchala city and the surrounding district (see 2017 video by RFE/RL's Azerbaijani Service). Kura River is the biggest river in Azerbaijan. It is a transboundary river with its source in Turkey. It also flows through Georgia before entering the Republic of Azerbaijan. More than 600 km of this transboundary river is in the territory of Azerbaijan flowing from the western border of the country to the delta in the Neftchala district where it falls into the Caspian Sea. About 70 km of the river flows through the Neftchala district. Neftchala city is located on the estuary of the river. The district is also adversely affected by the salinization of the Kura River due to the sea level fluctuations in the Caspian Sea. Neftchala city is located on the estuary of the river. The district is also adversely affected by the salinization of the Kura River due to the sea level fluctuations in the Caspian Sea.

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Figure 42. Kura River in Neftchala City

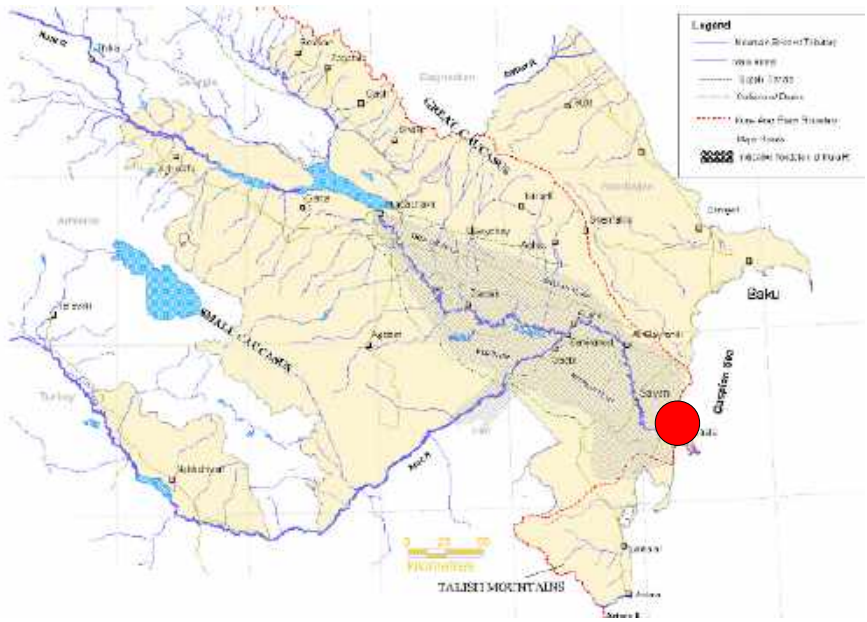

Figure 43: Map depicting the Kura River joined by the Aras River, its largest tributary at the City of Sabirabad.

Table 39: Summary Output 2.2

Deliverables	Delivery of the early warning system
Beneficiaries	89,200
Budget	1.230.992 USD
Location	Neftchala District, Azerbaijan

According to consultations with government entities in Baku and Neftchala, and communities in the Neftchala district, flooding frequently results in the loss of important environmental and economic assets, properties, and services, including farming, livestock raising, and fishing. For example, the high water in Kura and Araz rivers and ground water level rise of May-June 2010 caused the destruction of thousands of private houses and social facilities. The government spent over USD 378,600 for the reconstruction and repairs of private houses and public facilities.[20]

Saltwater ingress due to sea level fluctuations has led to a significant reduction in fish stocks for local fishermen and women. The water level of the Kura River had been fluctuating often in the past 2 years and as a result of strong winds from the Caspian Sea, the saline water of the sea invaded the river causing severe problems for agriculture, cattle breeding, and domestic water use. Representatives of the local authority stated the problems with proper management of water resources because of problems related to outdated hydrometeorology infrastructure in the region, which is not allowing reliable data for efficient decision-making on time.

(2) Summary of concrete adaptation measure

The **Early Warning System (EWS)** is an adaptive measure for climate change, using integrated communication systems to help communities prepare for hazardous climate-related events. A successful EWS saves lives and jobs, land, and infrastructures and supports long-term sustainability. Early warning systems assist public officials and administrators in their planning, saving money in the long run and protecting economies. This investment will establish an **EWS for salinization, droughts, and flooding** in the Neftchala district. The **monitoring devices** will be installed in **two locations** in the Neftchala district to track the discharge and salinity of the Kura River. The monitoring mechanism will include automatic hydrological stations to measure water temperature, water level, and runoff velocity as well as portable water discharge monitoring devices to measure water discharge in points that are away from the automatic monitoring stations. The main purpose of the establishment of the **automatic meteorological station** is to measure air temperature, direction and speed of winds, humidity, the volume of precipitation, the number of drought days, and other parameters. These accurate data are going to be presented to the decision-makers and planners. Along with these, the data on soil moisture, humidity, and soil temperature are going to be obtained through the establishment of an **automatic agro–meteorology station**. All this information (air and soil temperature, moisture, etc.) either at the local level (within the scale of certain villages) or at the district level will be observed and managed through a mobile software application. An **automatic marine measure station** will measure the sea level, salinity, and temperature of seawater. A situation centre cum server room will be set up. This monitoring mechanism will be a part of the Ministry of Ecology and Natural Resources' network and supplement the meteorological monitoring capacities in the Neftchala district. An **information dashboard** illustrated by a user-friendly hazards map will be installed at the Neftchala District Executive Authority to ensure that real-time information is available to district-level decision-makers and planners.

The project will also support the Ministry of Emergency Situations in further enhancing **communication of early warnings** among the public with a special focus on vulnerable groups such as women (including women staying behind), the elderly, single parents, and persons with disabilities. **Capacities** of relevant local stakeholders will also be developed on early warning systems. These aforementioned activities will be supplemented by **community-level consultation** and **awareness-raising campaigns**.

To address the limited knowledge of the role of nature-based solutions in managing salinization, the project will commission a **scoping study** to a local consultancy firm or NGO with experience in this realm who will work closely with community members and the local authorities. The latter will be encouraged to involve local youth volunteer groups to implement nature-based solutions in pilot areas that can be monitored for learning/research purposes and during school visits, and disseminate good practices through social media.

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Learning exchanges will be organised with other cities in Azerbaijan. The investment will be strengthened through **Environmental and Social Impact Assessment (ESIA)** monitoring.

[20] Source: Ministry of Emergency Situations of the Republic of Azerbaijan, "Flood damage eliminated", https://fhn.gov.az/index.php?eng/pages/33

Figure 44: Meteorological Station in Neftchala district.

Figure 45: Location of Meteorological Station in Neftchala district

(3) Location of investments

The selected locations for EWS in this investment are all in the area classified as public land, and thus do not impact private land.

(4) Technical Designs

Types and specifications of devices

- *Portable (mobile) water discharge measuring device – Acoustic – Doppler – Profiler:* This ADCP (Acoustic Doppler Current Profiler) device is functioning on ultrasound-based technology. It defines the profile of the riverbed under the water automatically and measures the discharge volume of water in the defined current profile with high accuracy. This device will be useful in conducting measurements of water discharge in points that are away from automatic stations as well as updating current profile parameters in points close to automatic stations. *Automatic hydrological stations:* Automatic hydrological stations are used for conducting monitoring of water temperature, the water level in the river, and the velocity of runoff to measure water discharge and chemical parameters (e. g, conductivity, PH, turbidity) of river water. It has to be emphasized that the proposed devices will be operated using only solar energy from solar panels. Austrian production "Sommer" and German-made "OTT Hydromet" can be proposed for automatic hydrological stations. *Automatic meteorological station:* This is a static device that is established at a

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selected point in the river. The station is installed with an ultrasound wind sensor, precipitation sensor, atmosphere pressure, air temperature, and humidity. Devices of Vaisala company from Finland can be proposed for the automatic meteorological station.

- *Automatic agro–meteorology station:* Unlike the automatic meteorology station, this agro–meteorology station is considered for the local area to measure air temperature, humidity, atmospheric pressure, precipitation, wind direction, and wind speed, as well as soil temperature and moisture. Besides this type of agro–meteorology stations are able to provide weekly weather forecasts for the selected local area ahead of time through mobile applications. The USA-made "DTN" agro–meteorology station can be proposed for the automatic agro–meteorology station.
- *Automatic marine measurement station:* Along with meteorological parameters it has functions to measure the sea level, salinity, and temperature of seawater. Devices of Vaisala company from Finland or Anderra device of Xylim company from the USA can be proposed for the automatic marine measurement station.
- *Server:* There is also a need to create a server room and install a server in renovated hydrometeorology station to process the data received from various devices and stations. The data received from various sources will be integrated for further use as early warning information by the specialists of the station. Later this processed data is submitted to decision-making bodies. A corresponding server room equipped with monitors has to be created as a Situation Center, which requires laptops with strong configurations (i.e, RAM, HD etc.). The cabinets of the station have to be renovated as well. The investment aims to upgrade the agro-meteorological infrastructure in Neftchala. The measures, including equipment, have been identified in consultation with the Ministry of Ecology and Natural Resources and the Neftchala Executive Authority. They will be users of the equipment. The EWS communication aims to improve the existing protocols of the Ministry of Emergency Situations. The capacity development of government entities will also contribute to sustainability.

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(5) Cost effectiveness – budgets and beneficiaries

Table 40: Budget

Item	Location	Allocated budget (USD)		Sub-total in USD
Executing Entity – personnel and office cost				Sub-Total: 338.992
EWS equipment (e.g., 2 water level sensors, 2 wind sensors, an information dashboard, etc.)	Neftchala	Equipment	450,000	Sub-Total: 500,000
		Construction	20,000	
		Labour cost	24,000	
		Field missions for technical expertise and monitoring	6,000	
EWS communication	Neftchala	Equipment	50,000	Sub-Total: 150,000
		Contractual Services	30,000	
		Audio visual product	30,000	
		Field missions for technical expertise and monitoring	10,000	
		Translation/ Interpretation	15,000	
		Edit/ Layout/ Design/ Online Publication	15,000	
Capacity development on EWS	Neftchala	Contractual Services	31,000	Sub-Total: 60.000
		Venue and refreshments	6,000	
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	8,000	
Environmental Impact Assessment Report (ESIA) and gender expertise and monitoring	Neftchala	Contractual Services	25,000	Sub-Total: 32,000
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	2,000	
Community consultations	Neftchala	Meeting venue and catering	10,000	Sub-Total: 20,000
		Transportation and DSA	6,000	
		Editing and layout design	4,000	
Scoping study on the role of nature-based solutions in managing salinization	Neftchala	Contractual Services	40,000	Sub-Total: 50,000
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	5,000	

Awareness raising campaign	Neftchala	Contractual Services – audio-visual product	10,000	Sub-Total: 30,000
		Venue and refreshments	4,000	
		Field missions for technical expertise and monitoring	3,000	
		Editing, layout and design of publication material	10,000	
Climate adaptation expertise on urban adaptation measures	Neftchala	Contractual Services	40,000	Sub-Total: 50,000
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	5,000	
		TOTAL		**1.230.992 USD**

Table 411: Detailed Budget - Equipment

#	Products	Technical Specifications	Quantity	Unit price (USD)	Total price (USD)
1	Automatic Weather Station (AWS)	Air temperature, relative humidity, air pressure, wind direction, wind speed, and solar radiation. One external rain sensor is connectable.	1	12,868	12,868
2	Marine Hydrometeorological Station	Sea Level, Conductivity and Salinity, air temperature, relative humidity, air pressure, wind direction, wind speed and solar radiation. One external rain sensor is connectable.	1	23,228	23,228
3	Hydrology Station (HWS)	Water Discharge, Water Level, Water velocity, Water Quality – Conductivity, Temperature, pH, Turbidity	2	38,472	76,944
4	ADCP (Acoustic Doppler Current Profiler)	River Surveyor M9. Portable nine beam 3 MHz/1.0 MHz/0.5 MHz acoustic Doppler profiler/ discharge measurement system intended for use from moving boats and other floating platforms in medium-depth channels. Features bottom tracking, internal discharge calculation, River Surveyor Live! Windows software for real – time display of current profiles, water depth, and computed discharge measurements, DGPS/RTK GPS interface, and integration of CastAway-CTD data for sound speed corrections. The system also includes a power supply and plastic shipping case.	1	49,253	49,253
5	Agro-meteorological station		3	8,000	24,000
6	Software		1	6,440	6,440
7	Server		1	8,360	8,360
8	Miscellaneous		lumpsum	48,907	48,907

The total beneficiaries of the EWS system are the full district of Neftchala. Below are the numbers based on official statistics. Additional categories of key beneficiaries for which there is no data include migrants, single-parent households and women, seasonal and informal workers. The project will engage communities engaged in fish farming, agriculture, and livestock – with a focus on those residing and working along the Kura River. Particular attention will be devoted to engaging young women from the community, but also making sure that the project will promote ideas and leadership skills among the female government staff currently working at Neftchala Meteorological Station.

Table 42: Beneficiaries[21]

	Total	Female	Male
Total (District)	89,200	45,000	44,200
Urban	41,300	20,900	20,400
Elderly (65 +)*	47,900	23,800	24,100
Youth and children (under the age of 15)	8,800	5,600	3,200
Unemployed*	19,300	9,200	10,100
Persons with disabilities*	2,854	1,440	1,414

**Based on the national average due to a lack of localized data.*

(6) Relevant Stakeholders

[21] https://www.azstat.org/portal/tblInfo/TblInfoList.do

The project idea has been developed in consultation with relevant national stakeholders, including the Ministry of Ecology and Natural Resources and the Neftchala District Executive Authority. The project idea was also discussed by the National Steering Committee, which includes 17 government entities. Given the importance of the last-mile communication of early warning, special attention will be paid to ensure that the early warning is communicated to vulnerable groups such as women (including women staying behind), the elderly, single parents, and persons with disabilities. Local youth volunteer groups and NGOs will be engaged to disseminate further and amplify the messaging developed with the authorities.

Astara - Output 2.3

(1) Hazard to be addressed by intervention and other relevant circumstances

Although Astara receives 1600 - 1800 mm of rainfall annually, it is largely concentrated in spring, whereas in summer months this area has been increasingly experiencing water scarcity. This has resulted in the loss of important environmental assets and related economic services.

Azerbaijan is one of the four most water-scarce countries in the world, with only about 1000 m3 of water available per capita per year, and it is estimated that this will drop to about 800 m3 per capita per year by the year 2050 as a result of the impacts of climate change and population increase. Over 90% of this water is allocated for agriculture (of which about half is being lost because of old infrastructure and irrigation methodology). While citizens of Astara have recently benefited from an improved potable water supply network, the local authorities are struggling to provide sufficient water for the irrigation of public parks and pedestrian spaces. This has resulted in additional costs for the renting of water tankers and the loss of trees, plants and parching of grass during the hot summer months. Therefore, rainwater harvesting is crucial for meeting future demand not only for agricultural purposes but also for the maintenance of public greenery which is critical for the well being of citizens but also for the growing tourism and hospitality industry. The local authorities foresee a strong increase of tourism once the land border with Iran will be reopened.

Figure 46: Vast areas of the public park realized along the Caspian Sea in Astara City may remain waterlogged for weeks after the seasonal rains in spring, but risk becoming scorched earth during the hot summer months because of the lack of water.

Consultations with government entities and communities in the Astara district have confirmed that the local communities are being adversely impacted by climatic hazards on the local environment that are leading to serious consequences for local people, particularly for those households settled near the riverbank of the Kura River, but also those that depending on water availability for their agro-businesses or subsistence farming.

Table 43: Summary Output 2.3

Deliverables	Delivery of rainwater harvesting system
Beneficiaries	110,500
Budget	1.573.666 USD
Location	Astara district, Azerbaijan

(2) Summary of concrete adaptation measure

In **Astara**, the investment will focus on improving **water security through rainwater harvesting and integrated water management planning**. The rainfall harvesting from rooftops, roads, and parking lots can increase the water supply for various uses and help combat the chronic water shortage. Harvested rainwater of acceptable quality could be used for different purposes, including drinking, cooking, watering gardens, and indoor and outdoor cleaning. A rainwater harvesting system could decrease the demand from the main water supply and its low maintenance costs. The most expensive part of a rainwater system is usually the storage

place itself. If the dry period is too long, large storage tanks are needed. In arid regions, rainwater could also be used to recharge groundwater aquifers rather than for surface storage. .The investment will set up two **rainwater harvesting demonstration sites**, including the Caspian Sea promenade, its parking and a nearby school. This work aims at evaluating the potential for potable and non-potable water savings by harvesting rainwater. Based on an initial assessment at the school, over 400 m^3 of rainwater can be collected annually, including 200 m^3 a year from roofs of school buildings and 200 m^3 a year from open impervious areas, provided that all surfaces are used and all runoff from the surfaces are collected. Chemical and biological analysis of harvested rainwater will be conducted to meet the requirement of water treatment for different elements (e.g., nitrate, pathogenic organisms, and others). The rainwater harvesting will be supported by a **feasibility study**.

The rainwater harvesting will be supplemented by public education on water scarcity, use and management. There will be capacity development on urban climate adaptation in Astara. A **costed plan for adaptation solutions and integrated water management including gender-disaggregated water use** and a **feasibility study on rainwater harvesting** at the two sites will be commissioned. Learning exchanges will be organised with other cities in Azerbaijan. The investment will be strengthened through ESIA based on a feasibility study and subsequent monitoring.

The sites for rainwater harvesting have been identified in consultation with the Astara Executive Authority and correspond to the low-lying areas that are most waterlogged during the heavy rainfalls in Spring (see above photo). The project will offer dozens of labour-intensive jobs for unemployed youth from the area. The Executive Committee will maintain the infrastructure. The rainwater harvesting structure at the Promenade will be connected to the water infrastructure of the town. The capacity development of government entities will also contribute to sustainability.

(3) Location of investments

The selected locations for rainwater harvesting in this investment are all in areas classified as public land, and thus do not impact private land. The locations are the Caspian Sea Promenade (photo below), and the vocational training centre.

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Figure 47: Caspian Sea Promenade, Astara City, Astara district, Azerbaijan

Figure 48:
Caspian Sea Promenade, Astara City, Astara district, Azerbaijan: catchment surface and location for storage tanks (not to scale)

(4) Technical design – drawings, illustrations, sketches

Each rainwater-harvesting system will consist of preferably identified and prepared waterproof catchment surfaces for collecting the rainwater (e.g., roof and impervious ground surfaces), a delivery system for transporting rainwater from the catchment to appropriate storage tanks (e.g., gutters or surface drains) and the storage tank.

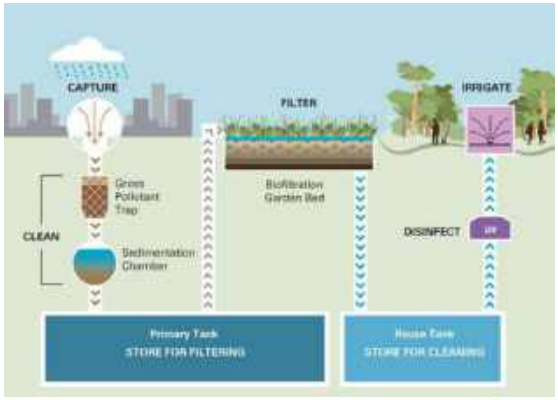

Figure 49: Rainwater harvesting system design (public), *underground tank system*

Figure 50: Rainwater harvesting system design (private household), underground tank system

Figure 51: Rainwater harvesting diagram

It is planned that the rainwater-harvesting system will include the roof, gutter, down pipes, a collecting tank, primary screening and first flush diverters and a water treatment unit.

Storage tanks (plastic or concrete) will be used to store rainwater. Tanks are planned to be built above ground for rainwater from roofs, where water will be treated to meet drinking water standards. Water collected in underground tanks will also be treated to be used in toilets and for the greening of surrounding areas.

The amount of water that can be harvested is calculated according to the equation: V = Sum (R*A*RC/1000)

where V is the annual volume of rainwater that could be harvested (m3), R is the average annual rainfall (mm/y), A is the total area used for Rainwater Harvesting Diagram (RWH) (m), RC is the run-off coefficient (dimensionless), and 1000 is the conversion factor from mm to m.

The runoff coefficient for any catchment is the ratio of the volume of water that runs off a surface to the volume of rainfall that falls on the surface. The runoff coefficient accounts for water losses due to surface material texture, evaporation, losses occurring in gutters, spouts and storage tanks, surface cleaning and inefficiencies in the collection process. Also, wind direction and speed influence water loss from roof surfaces.

Table 44: Volume of harvested Rainfall and potential Water Saving in the School in Astara

Harvesting area	Area (m^2)	Volume (m^3)
Building's rooftop	400 – 500	200
Open areas	500 – 600	200
Total	1000	400

(5) Cost effectiveness – budgets and beneficiaries

Table 45: Budget

Item	Location	Allocated budget (USD)		Sub-Total in USD
Executing Entity – personnel and office cost			338,992	338,992
Rainwater Harvesting System and equipment for four locations (including catchments, coarse mesh, gutters, conduits, filters, storage, etc.)	Astara	Equipment	300,000	944,674
		Maintenance	50,000	
		Construction	494,774	
		Labour cost	60,000	
		Contractual Services	20,000	
		Field missions for technical expertise and monitoring	20,000	
Feasibility study on rainwater harvesting covering each of the two sites	Astara	Contractual Services	40,000	50,000
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	5,000	
Public education on water scarcity, use and management	Astara	Contractual Services – audio-visual product	15,000	40,000
		Venue and refreshments	10,000	
		Field missions for technical expertise and monitoring	5,000	
		Editing, layout and design of publication material	10,000	
Capacity development on urban adaptation and water	Astara	Contractual Services	25,000	40,000
		Venue and refreshments	5,000	
		Field missions for technical expertise and monitoring	2,000	
		Translation/ Interpretation	3,000	
		Editing, layout and design of publication material	5,000	
Development of costed plan for adaptation solutions and integrated water management including gender-disaggregated water use	Astara	Contractual Services	55,000	80,000
		Meeting venue and catering	5,000	
		Field missions for technical expertise and monitoring	5,000	
		Translation/ Interpretation	10,000	
		Editing and layout design	5,000	
Environmental Impact Assessment Report (ESIA) and gender expertise and monitoring	Astara	Contractual Services	15,000	30,000
		Field missions for technical expertise and monitoring	10,000	
		Translation/ Interpretation	5,000	
Climate adaptation expertise on urban adaptation measures	Astara	Contractual Services	10,000	10,000
Community Consultations	Astara	Venue and refreshments	20,000	40,000
		Field missions for technical expertise and monitoring	15,000	
		Translation/ Interpretation	2,000	
		Editing and layout design	3,000	
		TOTAL		**1,573,666.00**

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The total beneficiaries of the introduction of a Rainwater Harvesting System and related activities are the residents of the Cit of Astara. Below are the numbers based on official statistics. Additional categories of key beneficiaries for which there is no data include migrants, single-parent households, seasonal and informal workers, fishermen and women, and agricultural workers.

Table 46: Beneficiaries[22]

	Total	Female	Male
Total (District)	110,500	54,900	55,600
Urban	8,900	5,700	3,200
Elderly (65 +)*	27,500	12,900	14,600
Youth and children (under the age of 15)	4,100	2,037	2,063
Unemployed*	3,563	1,757	1,779
Persons with disabilities*	8,900	5,700	3,200

**Based on the national average due to a lack of localized data.*

(6) Relevant Stakeholders

The project idea has been developed in consultation with relevant national stakeholders, including the Ministry of Ecology and Natural Resources and the Astara District Executive Authority. The project idea was also discussed by the National Steering Committee, which includes 17 government entities.

Given the importance of rainwater harvesting in conserving freshwater and addressing water scarcity, special attention will be paid to ensure that the relevant information is communicated to vulnerable groups such as women (women staying behind), the elderly, single parents, and persons with disability. The local authorities and local entrepreneurs will be engaged throughout the realization of the water catchment reservoirs to encourage the replication of the project in other locations, particularly in public parks and tourist resorts so as to reduce the excess of water in Spring and the need for piped network water for irrigation purposes during the hot summer months.

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[22] Source: https://www.azstat.org/portal/tblInfo/TblInfoList.do

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ANNEX 6: Environmental and Social Risk Screening, Impact Assessment, Environmental and Social Management Plan

The purpose of this Annex is to demonstrate the programme's compliance with the **Environmental and Social and Gender Policies** of the Adaptation Fund. It provides an analysis of the potential environmental and social risks of the programme's physical activities and highlights opportunities, concluding in an **Environmental and Social and Gender Policy Compliance Plan**. The content of this plan will be made available to the PAC before the programme commences, and it will be used as a basis to brief beneficiary communities before the programme commences. Its content will be translated into Azerbaijani prior to the start of the programme, and its key findings and messages will be simplified to enable beneficiary communities to understand them.

Compliance with environmental and social safeguards

Environmental and social safeguards are essential tools to prevent and mitigate the potential for undue and unintended harm that could arise from programme activities. In line with the Adaptation Fund's ESP and GP and UN-Habitat's Environmental and Social Safeguards System (ESSS), UN-Habitat and its partners are required to conduct risk screenings, scoping and impact assessments of all activities that have even a negligible risk of causing unintended harm. To ensure compliance with the Environmental and Social Policy of the Adaptation Fund, all programme activities are screened in this Annex against the 15 environmental and social principles, as defined in the Environmental and Social Policy of the Adaptation Fund. Where risks have been identified, this annex analyses the potential for impact and describes the measures that have been built into the programme to avoid or mitigate risks and their impacts. Throughout the programme, investments have been designed. This Annex supersedes any previous environmental and social safeguards related annex that has been submitted in previous versions of this proposal. sThe analysis presented in this Annex is based on data from the census, numerous government sources, other secondary sources and where this is not available, primary data gathered by the programme formulation team. All investments identified in the programme have been developed in regular consultation with local and national government and target beneficiary communities. The proposed measures to avoid, mitigate and manage environmental and social safeguards risks have also been discussed extensively with local and national government stakeholders and communities. Please note that all technical i designs and related information are presented in Annex 5.

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Screening and categorization

The table below, screens the programme's activities against the 15 Adaptation Fund Environmental and Social Safeguard principles (hereafter, the 15 principles) and provides a summary of why the principle has been triggered or not. Further details and analysis are provided throughout this annex. Further detailed programme design sheets are provided in Annex 5. Due to space constraints in the proposal, these are summaries, and full versions can be provided upon request. Where appropriate, this annex also contains information gathered through the community consultation process, which is described further in Part II. It should be noted at this point that only activities under Component 3 involve physical works (construction, installation of facilities, maintenance) and so on. All other activities in the other outputs proposed by the programme are 'soft' activities that involve training, reports and publications. As such, the only the investments under Component 3 are considered category B risk and require further screening. The remaining activities under Components 1, 2 and 4 are considered Category C and, as no risks arise, impact assessments are not required. In the analysis below, there are occasional references to mitigation measures that are to be factored into soft activities where these support a hard activity to reduce environmental and social risks – i.e., where training will emphasize gender equality and women's empowerment. This notwithstanding, it should be assumed that soft activities have been considered to have no risk or such minimal risk that mitigation measures are not required and, for reasons of space, a are not discussed further here. ESS consultations have been conducted through screening, examination, and review with feasibility of implementing identified activities. The designed activities especially for infrastructure investments, were assessed to identify the potential risk and impact. After identification, mitigation measures were set up, and risks for social and environmental impacts were analyzed. Based on those measures, monitoring plans were arranged, and probability of risk was determined. With mitigation measures, monitoring plans, and probability of risk, mitigation action plans were developed below. The ESMP will be reviewed continuously through the lifespan of the proposed programme. The ESMP identifies potential risks to the environment and social matters from the proposed programme and outlines strategies for managing those risks and minimizing undesirable environmental and social impacts. The ESMP also provides a grievance mechanism, outlined below, for community members impacted by the proposed programme. An ESMP is a management tool to minimize any negative social or environmental impacts of the programme and aim to increase environmental and social benefits. The environmental and social objectives of the programme are to: encourage good management practices through planning, commitment and continuous improvement of environmental practices;

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- minimize or prevent the pollution of land, air and water pollution;
- protect native flora and fauna;

- comply with all applicable laws, regulations and standards for the protection of the environment, adopt the best practicable means available to prevent or minimize environmental impact;
- describe all monitoring procedures required to identify impacts on the environment; and
- provide an overview of the obligations of the relevant government ministries and UN-Habitat staff and consultants with regard to environmental and social obligations.

The ESMP will be updated periodically by the PMU in consultation with UN-Habitat and Executing Entities, and the relevant government ministries to incorporate changes in the detailed inception phase of the programme. The ESMP will continue through the lifespan of the programme to comply with the AF environmental and social policy and all other relevant laws and policies. The tables presented below were prepared primarily by using secondary data, reports and analysis of this information by the proposal development team to reach conclusions about what the likely impacts of the identified risks would be. Where studies, data and secondary information is used in the below analysis, it is referenced accordingly. In some cases, and where available, the assessment uses unpublished information obtained from government departments. This approach was taken because some government agencies/departments in Azerbaijan obtain data that they do not publish, but shared with the team in the consultations that led to the formulation of this proposal. As highlighted in Part I, consultations with communities also took place, and these were important in the programme's design and focus. The communities were also consulted as part of the Environmental and Social Safeguards approach, and their views are reflected – especially under the Access and Equity, Marginalized and Vulnerable Groups and Gender Equality and Women's Empowerment Principles. However, the consultations took a more 'confirmatory' approach in the formulation of the ESIA due to the requirement that the ESIA be evidence rather than perception based. Where the ESIA relies on community consultations to arrive at findings or make assumptions about likely impacts, this is stated.

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

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

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

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Grievance Mechanism

The grievance mechanism will apply to all the programme's target areas and will be open to beneficiaries and non-beneficiaries alike. It will allow them accessible, transparent, fair and effective means to communicate with the programme management (and Programme Steering Committee) if there are any concerns regarding the programme design and implementation. All employees, executing entities and contractors and people in the target areas will be made aware of the grievance mechanism to lodge any complaint, criticism, concern, or query regarding the programme's implementation. The mechanism considers the particular needs of different groups in the target communities. It combines anonymous mailboxes at community level, a trained local facilitator in each community who can listen to grievances while assuring anonymity and a telephone number that enables people to call anonymously. These options allow people to make their grievance in local languages, with options for illiterate people or people with low levels of literacy and recognize that internet and smart phone penetration is not universal in the target area. Moreover, any stakeholder involved with the programme can use any workshop, training or any other event organized by the programme, either in public (i.e., through open floor discussion) or in private (i.e., discretely with UN-Habitat or executing entity staff involved with the workshop) can raise a grievance verbally.

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

recognizes that in many Asian countries, some people do not feel confident in directly confronting grievances and do not like to be seen to complain. It allows people to raise issues in a subtle and anonymous way.

All grievances will be anonymized and presented to the Programme Steering Committee. All grievances will be treated with equal and urgent importance, regardless of who raised them, or the mode by which they did so. All stakeholders, including beneficiaries will be made aware of the grievance mechanism, their options for reporting, what constitutes a grievance and their right in anonymity at the start of the programme, and/or whenever the programme first makes contact with them (i.e., during the inception phase, whether in training, or whichever activities come first). Stakeholders will be reminded of the grievance mechanism periodically throughout the programme. The address and email address of the Adaptation Fund will be made public (i.e. programme website, Facebook and mailbox) for anyone to raise concerns regarding the programme: Adaptation Fund Board Secretariat I Mail stop: MSN P-4-400 I 1818 H Street NW I Washington DC.

All physical works activities in the programme will be undertaken under Component 2. These activities carry the risk of causing environmental and social impacts. As the activities implemented under the project will be local and small scale, it is deemed that they are not 'Category A' risks. All activities implemented under Component 3 are, therefore, **Category B**. The table *Environmental and Social Risk Screening and Categorization* shows which outputs have risks aligned with the Adaptation Fund's Environmental and Social Principles as well as the summary of the assessment and screening for the impact should the intervention violate the environmental and social principles and the likelihood of this happening. Based on this screening on a scale of 1-5, with 5 being the highest, the combined score is then used to assess the significance with 8-10 assessed as high, 5-7 as medium and 2-4 as low.

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Environmental and Social Risk Screening

Table 47: Environmental and Social Risk Screening and Categorization

Adaptation Fund Safeguard Standards	UN-Habitat Safeguard Standards	Risk questions based on UN-Habitat guidance	Assessment	Impact (1-5)	Likelihood (1-5)	Significance (L/M/H)
Compliance with the Law *Projects/programmes supported by the Fund shall be in compliance with all applicable domestic and international law.*	P 8: Compliance with the Law	Are environmental, building, or other sectorial permits required by the local regulation? If yes, will these be followed by the project?	Yes, Azerbaijan has a construction permit system (details can be found here) which will be followed in the construction process.	3	1	L
		Will activities, machinery, or infrastructure associated to the project/programme imply or involve any violation of local regulations?	No for Outputs 2.1, 2.2 and 2.3 as they will have minimal machinery or infrastructure. Yes, for output 2.1 there will be some machinery during construction, but risks are minimal Yes, for output 2.3, the installation of drainage infrastructure has a potential risk which will need to be mitigated			
	Cross-Cutting Thematic Area (CCTA) 2: Safety	Will the interventions affect the safety to live, work and participate in cities and human settlements?	No, the planned interventions are not foreseen to be disruptive to livelihoods or residing in the cities and human settlements, however during construction for outputs 3.1 there may be temporary disruption which will need to be mitigated.	3	1	L
		Will the interventions particularly affect the safety to live, work and participate in urban life for persons in vulnerable situations?	No, the interventions should not have any adverse safety impacts on persons in vulnerable situations.			
		Is there any risk of non-compliance with the United Nations principle of zero tolerance vis-à-vis Sexual Exploitation and Abuse?	No, the executing entities adhere to UN principle of zero tolerance.			
Access and Equity *Projects/programmes supported by the Fund shall provide fair and equitable access to benefits in a manner that is inclusive and does not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights. Projects/programmes should not exacerbate existing inequities, particularly with respect to marginalized or vulnerable groups.*	P 9: Access and Spatial Justice	Is the equal distribution of project/programme benefits guaranteed?	No, as activities under output 3.1 in Baku and 3.3 in Astara involve demonstration sites which do not cover the entirety of the city, there would be the potential to exacerbate inequalities.	4	4	H
		Could the interventions result in any form of discrimination in the access to the project/programme benefits?	Yes, with output 3.3 the rainwater harvesting will only provide a finite benefit in terms of water supply.			
Marginalized and Vulnerable Groups *Projects/programmes supported by the Fund shall avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS. In screening any proposed project/programme, the implementing entities shall assess and consider particular impacts on marginalized and vulnerable groups.*	SII 3: Children, Youth and Older persons	Will there be negative impacts on children, youth and/or older persons?	No, the interventions do not have foreseen negative impacts on children, youth and/or older persons	3	2	M
		Will the interventions result in any form of discrimination against children, youth or older persons?	No, the interventions should not result in discrimination against children, youth or older persons. However, for the EWS systems in output 2.2 special attention needs to be paid to ensure children, youth and older persons have access to the circulated EWS information.			
	SII 4: Disability	Will the interventions have negative impacts on persons with disabilities?	No, the interventions should not have negative impacts on persons with disabilities			
		Will the interventions result in any form of discrimination against persons with disabilities?	No, the interventions should not result in any discrimination against persons with disabilities. However, for the EWS systems in outputs 2.2 special attention needs to be paid to persons with disabilities having access to the information. Also, for output 2.1, the new greenspace has the potential to not be accessible to people with disabilities			
Human Rights *Projects/programmes supported by the Fund shall respect and where applicable promote international human rights.*	SII 1: Human Rights	Could the interventions result in the violation of any human right?	No, the proposed interventions should not result in the violation of any human rights. Azerbaijan is a signatory and has ratified the majority of international human rights treaties. Further, the UN agencies follow a human-rights based approach and it is a fundamental foundation to the programme.	3	1	L
Gender Equality and Women's Empowerment *Projects/programmes supported by the Fund shall be designed and implemented in such a way that both women and men (a) have equal opportunities to participate as per the Fund gender policy (refer to Annex 4 for details); (b) receive comparable social and economic benefits; (b) receive comparable social and economic benefits; and (c) do not suffer disproportionate adverse effects during the development process.*	SII 2: Gender	Could the interventions have negative impacts on girls and women especially?	No, the interventions should not have a negative impact on girls and women	4	4	H
		Could the interventions adversely involve any form of discrimination against girls and women?	Yes, as outlined in the Gender Baseline Assessment Annex, Azerbaijan has low gender parity rankings with political empowerment and labour participation in being particularly imbalanced. There is therefore a risk that women are not fully included in the programme and their potential to benefit is reduced.			
Core Labour Rights *Projects/programmes supported by the Fund shall meet the core labour standards as identified by the International Labour Organization (ILO).*	P 1: Labour and working conditions	Could worker's rights be neglected or violated?	No, the programme will use skilled and unskilled labour both from the communities and hired as contractors.	3	1	L
		Could the work involve the use of child labour?	No, there will be no child labour utilized in the programme.			
		Could the work involve the use of forced labour	No, there will be no forced labour utilized in the programme.			
		Could the freedom of workers' organisations or collective bargaining be neglected?	No, local worker and labour organizations will be respected when relevant			
		Could the interventions particularly affect the safety to live, work and participate in urban life for persons in vulnerable situations?	The interventions should not have any adverse safety impacts on persons in vulnerable situations.			

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Indigenous Peoples *The Fund shall not support projects/programmes that are inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples*	P 6: Indigenous peoples	Could the interventions adversely impact the rights, lands, resources, and territories of the indigenous peoples?	No, the interventions will not have an impact on the rights, lands, resources, and territories of indigenous peoples.	1	1	L
Involuntary Resettlement *Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids or minimizes the need for involuntary resettlement. When limited involuntary resettlement is unavoidable, due process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation.*	P 4: Displacement and involuntary resettlement	Will the interventions involve displacement, physical or economic, and/or involuntary resettlement?	No, all interventions were selected to avoid any resettlement, and this was considered as part of the initial screening for interventions. All interventions are on public land and will not require resettlement.	Not applicable	Not applicable	Not applicable
Protection of Natural Habitats *The Fund shall not support projects/programmes that would involve unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognized by authoritative sources for their high conservation value, including as critical habitat; or (d) recognized as protected by traditional or indigenous local communities.* Conservation of Biological Diversity *Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species.*	P 5: Biodiversity conservation, and sustainable management of living natural resources	Could the interventions adversely impact the marine ecosystem?	No for the majority of activities. However, Output 2.1 will involve tree planting in a coastal area and Output 2.3 will have drainage into the Caspian Sea, so both of these pose risks.	4	3	M
		Could the interventions adversely impact natural habitats?	No for the majority of activities. However, Output 2.1 will involve tree planting in a coastal area and Output 2.3 will have drainage into the Caspian Sea, so both of these pose risks.			
		Could the interventions adversely impact critical habitats?	Yes. While interventions were chosen to avoid damage to critical habitats, however given the degraded and precarious state of the Caspian Sea which is a critical habitat for many fish species, special attention must be paid.			
		Could interventions adversely impact legally protected areas (by national or international regulations)?	No, project sites were chosen at a distance from legally protected areas for this reason. In Azerbaijan, while there are several projected areas in the country, there are not any protected areas near the three project sites.			
Climate Change *Projects/programmes supported by the Fund shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change.*	P 2: Zero-carbon development, pollution prevention and resource efficiency	During construction or operation, will the interventions generate pollutants or waste, which could affect human health or the environment?	For the majority no, this is not an issue. But for Output 3.1 given the dry climate and the need remediate the soil where former rail lines were in place and have been in disuse.	2 for Climate Change 4 for Pollution Prevention & Resource Efficiency	2 for Climate Change 4 for Pollution Prevention & Resource Efficiency	L for climate change H for Pollution Prevention and Resource Efficiency
		During construction or operation, will hazardous materials, or pesticides, which could affect human health or the environment, be used?	For the majority of the outputs, no this is not an issue. However, output 3.1 may use fertilizers.			
Pollution Prevention and Resource Efficiency *Projects/programmes supported by the Fund shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants.*		Will the interventions Require a significant amount of water and/or energy, which implies competition with host communities (for instance, water for human consumption or economic activities)?	For the majority of interventions, no. However, Output 3.1 will involve planting of new flora which will require water in the arid climate.			
		Does the project consider technologies and/or materials in support of a low/zero carbon development?	Yes, the interventions chosen are not energy intensive and the hydromet stations in Neftchala (Output 2.2) will utilize solar panels for energy and the conversion of land will be to add trees and greenspace (Output 2.1) which will absorb carbon.			
Public Health *Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids potentially significant negative impacts on public health.*	P 3: Climate change resilience, community health, safety and security	Do the interventions involve activities, machinery or infrastructure which could have adverse impact on the community' health and safety? In case of an accident or emergency situation, could the effect on the surrounding community or in the ecosystem be significant?	For the majority of the investments, no. However, for Output 2.1 will be undertaken in neighbourhoods with residential dwellings and commercial establishments and during construction this may result in dust and other disturbances to public health. There is not a significant chance of an accident or emergency that would affect the surrounding community.	4	2	M
Physical and Cultural Heritage *Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Projects/programmes should also not permanently interfere with existing access and use of such physical and cultural resources.*	P 7: Cultural Heritage	Could the interventions adversely impact cultural heritage properties and sites of archaeological, historical, cultural, artistic, and religious significance? Could the interventions adversely impact intangible heritage (uses and traditions...)?	No, the project sites are not in areas with cultural heritage properties. There are cultural heritage sites in Baku, but they are not located in the neighbourhood with the intervention under Output 2.1. No, the interventions do not compete with any intangible heritage of uses or traditions in the two countries.	1	1	L
		In case the project/programme uses cultural heritage, is the access and use by stakeholder secured?	Not an issue.			
Lands and Soil Conservation *Projects/programmes supported by the Fund shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.*		Do the interventions avoid degradation or conversion of productive lands or land that provides valuable ecosystem services? Do the interventions promote soil conservation?	No, the majority do not involve conversion of land. Yes, for Output 2.1 which will involve conversion of land however the current land would not be classified as productive and does not provide valuable ecosystem services. No, the majority will not promote soil conservation. However, Output 2.3 will involve digging up soil to install drainage that will deposit into the Caspian Sea sediment areas and will need to be done to promote soil conservation.	2	3	M

No correlating AF principle	CCTA 1: Resilience	Could the interventions affect the protective factors and/or the adaptive capacity of environmental systems?	Yes, the aim of the programme is to increase the adaptive capacity of environmental systems.	Not applicable	Not applicable	Not applicable
		Could the interventions affect the protective factors and/or the adaptive capacity of social (including urban, community and governance) systems?	Yes, the aim of the programme is to increase the adaptive capacity of social systems.			

Following programme risk identification through a consultative process involving national level stakeholders, and the three participating UN agencies as well as screening of the programme risks by each utilizing questions from **UN-Habitat's Environmental and Social Safeguard System (ESSS),** the Component 2 Risk Category is determined as B and the rest of the programme overall Project Risk Category has been determined is Category C since the Component 2 risks are moderate, the likely impacts are site specific and manageable. Risks and impacts according to AF principles and associated project activities are identified and mitigation measures proposed.

Environmental and Social Management Plan (ESMP)

The programme level ESMP has been developed through consultative identification of mitigation measures for each identified risk.

Table 48: Environmental and Social Management Plan, including ESS Risks and Mitigation Measures

Adaptation Fund Environmental and Social Principles	Further Assessment required for compliance	Relevant Programme Outputs	Risks	Mitigation Measures	Responsible	Consulted	Supervision/ Accountable	Timing
1. Compliance with the Law	**NO** further assessment is required, considering that compliance with the law has been reviewed during the programme development phase.	All outputs, particularly outputs 2.1 – 2.3	The programme has a **LOW RISK** of non-compliance with the law. Nevertheless, there are potential risks that may arise during its implementation. These risks should be thoroughly monitored and addressed through appropriate mitigation measures. • *Inadequate Legal Framework:* Climate adaptation initiatives may face challenges if there is a lack of comprehensive and enforceable laws and regulations related to climate change and adaptation in the Republic of Azerbaijan. • *Weak Enforcement Mechanisms:* Even with appropriate laws in place, inadequate enforcement and monitoring mechanisms can undermine compliance with climate adaptation regulations in the Republic of Azerbaijan. • *Institutional Capacity:* Limited institutional capacity to interpret, implement, and enforce climate-related laws may hinder effective compliance in the Republic of Azerbaijan. • *Conflicting Laws and Policies:* Inconsistent or conflicting laws and policies at different levels of government can create confusion and hinder coordinated compliance efforts in climate adaptation initiatives in the Republic of Azerbaijan. • *Land Tenure and Property Rights:* Unclear land tenure and property rights may create disputes and resistance to climate adaptation measures, particularly in vulnerable communities in the Republic of Azerbaijan.	The execution of programme activities at both national and local levels will adhere with laws on construction, safety and permitting in the Republic of Azerbaijan, following the legal requirements and regulations set by local and national government agencies related to building and construction projects. This will include building codes, safety standards, environmental regulations, and obtaining necessary permits and approvals before starting construction. Compliance ensures the safety and well-being of the construction workers, public and the environment. By addressing these key risks and implementing the suggested mitigation measures can enhance compliance with the law in climate adaptation programmes, ensuring the effective implementation of measures to address climate change challenges: *Strengthen Legal Framework:* The Republic of Azerbaijan should develop and strengthen their legal frameworks by enacting comprehensive and clear laws specifically focused on climate change and adaptation. These laws should include provisions for monitoring, enforcement, and penalties for non-compliance. • *Institutional Capacity Building*: Enhance the capacity of government agencies and relevant institutions to effectively implement and enforce climate adaptation laws in the Republic of Azerbaijan. This can be achieved through training, technical assistance, and resource allocation. • *Public Awareness and Education:* Conduct public awareness campaigns to inform citizens, businesses, and relevant stakeholders about climate adaptation laws, their importance, and the benefits of compliance in the Republic of Azerbaijan. • *Interagency Coordination:* Foster coordination and collaboration among different government agencies to ensure consistent implementation and enforcement of climate adaptation regulations in the Republic of Azerbaijan. • *Community Engagement*: Involve local communities in the development and implementation of climate adaptation programmes to ensure their buy-in and compliance with relevant laws in the Republic of Azerbaijan. • *Strengthen Enforcement Mechanisms:* Establish robust monitoring and enforcement mechanisms to detect and address non-compliance promptly. This may include setting up reporting systems, conducting regular audits, and imposing penalties for violations in the Republic of Azerbaijan. • *Legal Aid and Dispute Resolution:* Provide legal assistance and establish effective dispute resolution mechanisms to address conflicts arising from land tenure and property rights issues related to climate adaptation projects. In case required, the proposed programme aims to address this mitigation measure throughout the implementation, as highlighted in Component 2 of the programme document. • *Aligning Policies:* Ensure that climate adaptation laws and policies are aligned with other relevant laws and regulations, such as environmental protection laws and land-use policies, to promote consistency and avoid conflicts in the Republic of Azerbaijan.	• UN-Habitat • UNEP • IOM Azerbaijan	• State Committee on Urban Planning and Architecture	UN-Habitat HQ in Nairobi, Kenya	Continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up
2. Access and Equity		All outputs, particularly outputs 2.1 – 2.3	**HIGH RISK** In the context of the programme, there is a concern about unequal distribution of benefits, particularly in certain areas of the Republic of Azerbaijan (Baku and Astara). To ensure successful implementation, the following risks must be closely monitored and addressed through mitigation measures: • *Socioeconomic Disparities:* Climate adaptation programmes may inadvertently exacerbate existing socioeconomic disparities, leading to unequal access to resources and benefits. Vulnerable communities, such as low-income populations and marginalized groups, may struggle to access and benefit from adaptation initiatives.	In the Republic of Azerbaijan, the programme aims to enhance access to services with a focus on equity. Plans for expanding activities in the Republic of Azerbaijan were made with consideration of existing inequalities and vulnerabilities, aiming to address access issues. Hereby, transparency is crucial, and project plans, selection processes, and future plans should be made publicly available and communicated through local officials. In Azerbaijan, further plans for expanding activities will promote equitable access to city-wide services. The programme will actively address historical imbalances in access to water and information services for certain groups, such as migrants, ethnic minorities, and single-parent households. Involving diverse groups in consultation and preparation of investment activities is a key approach to correcting and avoiding exacerbation of these imbalances.	Programme Management Unit (PMU)	State Committee on Urban Planning and Architecture; Communities – direct and indirect beneficiaries - in all three locations where climate adaptation initiatives are executed	• UN-Habitat • UNEP • IOM Azerbaijan	During community consultations for concrete investments in Year 1, continuous monitoring and follow up throughout, and during the mid-term review in

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			• *Gender Inequality:* Climate adaptation programmes can be affected by gender inequalities, with women often facing greater challenges in accessing resources, decision-making processes, and opportunities. Failure to address gender-specific needs may hinder the effectiveness of adaptation efforts. • *Limited Awareness and Participation:* Lack of awareness and limited community participation in climate adaptation programmes may result in inadequate understanding and ownership of initiatives, leading to reduced effectiveness and sustainability. • *Infrastructure and Technology Gaps:* Uneven development of infrastructure and technology in different regions can hinder access to climate adaptation measures, especially in remote or disadvantaged areas. • *Political and Institutional Barriers:* Inadequate governance structures, bureaucratic inefficiencies, and political barriers may impede equitable distribution of resources and access to climate adaptation programmes.	By addressing these key risks and implementing mitigation measures, climate adaptation programmes in the Republic of Azerbaijan can become more inclusive, equitable, and effective in safeguarding vulnerable communities from the impacts of climate change: • *Inclusive Policy Formulation:* Involve diverse stakeholders, including representatives from marginalized communities and women, in the design and decision-making processes of climate adaptation programmes to ensure their perspectives and needs are considered in the Republic of Azerbaijan. • *Targeted Support for Vulnerable Groups:* Implement measures that specifically address the needs of vulnerable communities, such as providing financial assistance, capacity building, and social safety nets to enhance their adaptive capacities in the Republic of Azerbaijan. • *Community Engagement and Awareness*: Conduct extensive awareness campaigns and community engagement initiatives to ensure that all segments of society understand the importance of climate adaptation and actively participate in relevant programmes in the Republic of Azerbaijan. • *Capacity Building and Technology Transfer:* Invest in building local capacities and technology transfer to empower communities to implement adaptation measures independently in the Republic of Azerbaijan. • *Strengthen Institutional Frameworks:* Improve governance structures and institutional capacities to ensure efficient and transparent delivery of climate adaptation programmes, and foster accountability in resource allocation in the Republic of Azerbaijan • *Data Collection and Monitoring*: Establish robust data collection and monitoring systems to track the distribution of resources and assess the effectiveness of climate adaptation initiatives on access and equity in the Republic of Azerbaijan. • *Regional and Local Coordination:* Foster collaboration among regions and local governments to promote knowledge sharing and coordinated action for equitable climate adaptation across the Republic of Azerbaijan. • *Integration of Traditional Knowledge:* Acknowledge and integrate traditional knowledge and practices of local communities in climate adaptation programmes, as they often possess valuable insights on coping with environmental challenges.				Year 3 in particular

3. Marginalized and Vulnerable Groups	**YES partially**, continuous assessment of ensuring engagement and programme impact for marginalized and vulnerable groups, though consideration for marginalized and vulnerable groups have been the spine for the programme development and implementation process. Community engagement and consultation opportunities will be created throughout the programme implementation process to allow for the marginalized and most vulnerable groups to monitor compliance and demand adjustment of processes to ensure full participation in decision making process concerning their benefits.	All outputs, particularly outputs 2.1 – 2.3	**MEDIUM RISK** Marginalized and vulnerable groups – particularly elderly persons and people with disabilities - might face challenges in accessing the benefits of proposed climate action. This applies to green corridors and public spaces **(Output 3.1);** information provided by the Early Warning System (EWS) (**Output 3.2);** and improved water management **(Output 3.3);** in addition to climate resilient livelihood options in all selected sites. Key risks for marginalized and vulnerable groups in climate adaptation urban programmes in the Republic of Azerbaijan: • *Exclusion and Inequitable Access:* Marginalized and vulnerable groups may face exclusion from climate adaptation initiatives, leading to inequitable access to resources and benefits. This could worsen their vulnerabilities to climate impacts. • *Lack of Representation:* Insufficient representation of marginalized and vulnerable communities in decision-making processes may result in adaptation measures that do not adequately address their specific needs and concerns. • *Limited Awareness and Capacity:* Marginalized and vulnerable groups may have limited awareness of climate adaptation programmes or lack the capacity to participate effectively, hindering their ability to benefit from such initiatives. • *Land and Housing Disputes:* Climate adaptation projects might lead to land and housing disputes, particularly affecting vulnerable populations with insecure land tenure. (1) Vulnerable and marginalized groups may face various access issues concerning green corridors and public spaces, including: • *Physical Barriers:* Limited physical accessibility, such as lack of ramps, elevators, or wheelchair-friendly pathways, can make it challenging for people with disabilities to access and enjoy public spaces and recreational facilities. • *Socioeconomic Constraints:* Financial limitations might restrict vulnerable individuals from participating in recreational activities that require payment or admission fees. • *Geographic Disparities:* Unequal distribution of public spaces and recreational facilities in certain areas can lead to limited access for marginalized communities, particularly those in remote or disadvantaged regions. • *Safety and Security Concerns:* Perceived or actual safety concerns in public spaces may deter vulnerable groups from utilizing these facilities, particularly women, children, and the elderly. • *Discrimination and Stigmatization:* Social biases and discrimination may result in exclusion or discomfort for marginalized groups in public spaces, reducing their willingness to utilize such facilities. • *Information and Awareness:* Limited awareness about available public spaces and recreational opportunities may prevent vulnerable individuals from accessing and benefiting from these amenities. • *Cultural and Language Barriers:* Cultural differences and language barriers might impact the inclusivity of public spaces, potentially leading to alienation and reduced participation among marginalized groups. • *Lack of Specialized Facilities:* The absence of facilities tailored to the needs of specific vulnerable populations, such as playgrounds for children with disabilities, can hinder their participation in recreational activities. (2) Vulnerable and marginalized groups may face various access issues concerning EWS, including: • *Physical Barriers:* Limited physical accessibility of EWS, such as lack of ramps, elevators, or tactile signs, may hinder people with disabilities from receiving timely alerts. • *Language and Communication*: EWS messages might not be provided in languages or formats accessible to all, making it challenging for those with language barriers or low literacy levels to comprehend the information. • *Technological Access:* Limited access to communication technologies or internet services in certain areas could prevent vulnerable groups from receiving warnings through digital channels.	By addressing these key risks and implementing the suggested measures, climate adaptation urban programmes in the Republic of Azerbaijan can become more inclusive, equitable, and effective in protecting and empowering marginalized and vulnerable communities against the impacts of climate change. • *Inclusive Planning and Participation:* Ensure the active involvement of marginalized and vulnerable communities in the planning, design, and implementation of climate adaptation programmes. This can be achieved through meaningful consultation, engagement, and representation of these groups. • *Targeted Support:* Implement measures that specifically cater to the needs of marginalized and vulnerable populations, providing financial and technical support to enhance their resilience to climate impacts. • *Awareness and Capacity Building:* Conduct awareness campaigns and capacity-building programs tailored to the unique circumstances of marginalized and vulnerable groups, empowering them to actively participate in and benefit from climate adaptation initiatives. • *Secure Land Tenure:* Address land tenure issues and provide secure land rights to vulnerable populations to avoid potential disputes arising from climate adaptation projects. • *Social Safety Nets:* Establish social safety nets and support mechanisms to help those affected by climate impacts, particularly vulnerable groups, during the implementation of adaptation programmes. • *Gender and Social Inclusion:* Adopt a gender-responsive and socially inclusive approach to climate adaptation, considering the specific needs and roles of women and other marginalized groups in urban areas. • *Access to Information*: Ensure that information related to climate adaptation programmes is accessible to all, including marginalized and vulnerable communities, in a language and format they can understand. • *Monitoring and Evaluation:* Regularly monitor and evaluate the impacts of climate adaptation measures on marginalized and vulnerable groups to identify potential issues and make necessary adjustments. (1) Mitigation measures for enhancing access to green corridors and public spaces for vulnerable and marginalized communities **(see Output 3.1)** aim to create more accessible and inclusive environments. By implementing these measures, public spaces become places where these communities can fully enjoy the benefits, fostering social cohesion and well-being for all, including: • *Universal Design:* Ensuring that public spaces are designed with universal accessibility features, such as ramps, elevators, and tactile pathways, to accommodate individuals with disabilities. • *Equitable Distribution:* Prioritizing the equitable distribution of public spaces in various neighborhoods and regions, including remote and disadvantaged areas, to ensure access for all communities. • *Safety and Security:* Enhancing safety measures, such as adequate lighting and surveillance, to create inclusive and secure environments that encourage vulnerable groups to utilize public spaces. • *Inclusive Amenities:* Providing amenities in public spaces that cater to the needs of diverse populations, such as accessible playgrounds, seating areas, and gender-inclusive facilities. • *Community Engagement:* Involving vulnerable communities in the planning and design of public spaces, ensuring their preferences and needs are considered. • Cultural Sensitivity: Designing public spaces that respect and reflect the cultural values and preferences of marginalized communities, promoting a sense of ownership and inclusivity. • *Awareness and Education:* Conducting awareness campaigns to inform vulnerable groups about the availability and benefits of public spaces, encouraging their utilization. • *Partnerships and Collaboration:* Collaborating with local organizations and community leaders to advocate for inclusive public spaces and support initiatives that promote accessibility. • *Removal of Physical Barriers:* Identifying and removing physical barriers that impede access to public spaces, such as steps or narrow pathways, to create more inclusive environments. (2) Mitigation measures for enhancing access to EWS for vulnerable and marginalized communities **(Output 3.2)** involve implementing inclusive strategies that make EWS more responsive to their needs. By adopting these measures, EWS can better serve these communities, enhancing their resilience to climate-related risks, including: • *Inclusive Design:* Ensure that EWS are designed with inclusivity in mind, considering the needs and capabilities of all members of society, including people with disabilities, women, children, and elderly individuals. • *Multi-Modal Communication:* Utilize multiple communication channels to disseminate early warnings, such as text messages, radio broadcasts, sirens, and community networks, to reach diverse populations with varying access to technology. • *Local Language and Culture:* Provide early warning messages in local languages and formats that are culturally relevant and easily understood by the targeted communities, avoiding technical jargon. • *Accessibility Measures:* Implement physical accessibility features in warning systems, such as tactile signs, audio descriptions, and visual aids, to cater to individuals with disabilities.	Programme Management Unit (PMU) with private sector and consultants working on EWS, green corridors and institutions supporting climate resilient livelihood opportunities	Marginalized and vulnerable groups and host communities – direct and indirect beneficiaries - in all seven locations where climate adaptation initiatives are executed	• UN-Habitat • UNEP • IOM Azerbaijan	During community consultations for concrete investments in Year 1, continuous monitoring and follow up throughout, and during the mid-term review in Year 3 in particular

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			• *Socioeconomic Constraints:* Economic limitations might restrict some vulnerable individuals from owning or accessing devices capable of receiving warning messages. • *Awareness and Education:* Lack of awareness and education about the existence and importance of early warning systems may result in low utilization rates among vulnerable and marginalized groups. • *Discrimination and Stigmatization:* Social biases and discrimination may lead to unequal access to information, particularly for marginalized groups, further exacerbating their vulnerabilities during disasters. • *Geographic Isolation:* People living in remote or isolated areas may have difficulty accessing early warning systems due to limited infrastructure and connectivity. (3) Vulnerable and marginalized groups may face various access issues concerning access to <u>improved water management</u>, including: • *Displacement and Land Rights:* The implementation of a stormwater drainage system may require land acquisition or construction activities, potentially leading to the displacement of vulnerable communities and encroachment on their land rights. This can result in the loss of homes and livelihoods for marginalized groups. • *Access to benefits:* There is a risk that marginalized communities may not fully benefit from the improved water management system, leading to further disparities in access to water resources and infrastructure. Ensuring equitable distribution of benefits and access to water for all is essential. • *Economic vulnerability*: Vulnerable groups, such as low-income households or informal workers, may face economic vulnerabilities if they are not adequately included in the planning and execution of the stormwater drainage system. Loss of livelihood opportunities during construction or subsequent changes in the local economy can impact their well-being. • *Environmental and health concerns*: Inadequate waste and stormwater management may exacerbate environmental pollution, affecting the health of vulnerable communities residing near drainage areas. Proper waste treatment and water quality control are essential to prevent health risks. • *Social cohesion and community ties:* The disruption caused by the construction and operation of the stormwater drainage system may affect social cohesion and community ties in marginalized areas. Engaging with the local community and addressing social impacts is crucial to maintain community well-being. • *Gender equity:* Gender inequalities may emerge during the implementation process, with women potentially having limited participation and decision-making power in water management initiatives. Gender-responsive planning and engagement are necessary to ensure women's equal involvement and benefits. (4) Vulnerable and marginalized groups may encounter several access issues concerning <u>climate-resilient livelihood options</u>, including: • *Financial Constraints:* Limited access to financial resources and credit opportunities may prevent vulnerable individuals from investing in climate-resilient livelihood practices or adopting technologies that enhance resilience. • Skills and Training: Lack of access to education and training opportunities can hinder the development of skills required for climate-resilient livelihood activities, limiting their ability to adapt to changing environmental conditions. • *Land Tenure and Ownership:* Insecure land tenure or lack of land ownership among vulnerable groups may restrict their ability to implement long-term climate-resilient livelihood strategies. • *Market Access:* Limited access to markets and value chains can hinder the commercialization of climate-resilient products or services, affecting the economic viability of livelihood options for vulnerable groups. • *Social and Gender Norms:* Prevailing social and gender norms might limit the participation of vulnerable	• *Community Engagement:* Involve vulnerable and marginalized communities in the development and implementation of EWS, ensuring their meaningful participation in decision-making processes. • Capacity Building and Training: *Conduct training and capacity-building programs to empower* community members with the knowledge and skills to respond effectively to early warnings. • *Partnerships and Networking:* Establish partnerships with local organizations, community leaders, and non-governmental organizations (NGOs) to strengthen the dissemination of early warnings and ensure their accessibility to vulnerable groups. • *Sensitization and Awareness:* Conduct awareness campaigns to educate vulnerable communities about the importance of EWS and the appropriate actions to take in response to warnings. • *Feedback Mechanisms:* Establish feedback mechanisms to allow vulnerable communities to provide input on the effectiveness of early warnings and offer suggestions for improvement. • *Resilience-building Measures:* Integrate EWS into broader climate resilience-building efforts, ensuring that vulnerable communities have access to resources and support to cope with and recover from climate-related hazards. (3) Mitigation measures for enhancing access to <u>improved water management</u> for vulnerable and marginalized communities **(Output 3.3)** can better serve these communities, enhancing their resilience to climate-related risks, including: • Inclusive planning and participation: Engage marginalized communities, including women and local stakeholders, in the decision-making process of water management projects, ensuring their voices are heard and their needs considered. • *Community consultations and awareness:* Conduct thorough community consultations to understand concerns and potential impacts. Raise awareness about the benefits of the stormwater drainage system and address any misconceptions or fears. • *Land and livelihood restoration:* Implement fair compensation and resettlement programs for those affected by land acquisition, ensuring the restoration of livelihoods and access to resources. • *Social safeguards:* Develop and enforce social safeguards to protect vulnerable groups and promote social cohesion during the implementation and operation of the drainage system. • *Targeted support:* Provide targeted support to vulnerable households or communities, ensuring access to water and essential services throughout the programme's lifecycle. • Monitoring and Evaluation: Regularly monitor the programme's impacts on marginalized and vulnerable groups and assess the effectiveness of mitigation measures to make necessary adjustments. (4) Mitigation measures for enhancing access to <u>climate-resilient livelihood opportunities</u> for vulnerable and marginalized communities **(see Outputs 3.1 – 3.3)** involve implementing strategies that enable them to overcome barriers and gain improved access. By adopting these measures, these communities can enhance their adaptive capacity and resilience to climate change impacts, including: • *Financial Support:* Providing financial assistance, grants, or micro-credit options to enable vulnerable individuals to invest in climate-resilient livelihood activities. • *Capacity Building:* Offering training and skill development programs to equip marginalized groups with the necessary knowledge and expertise to engage in climate-resilient livelihood practices. • *Land Tenure Security:* Ensuring secure land tenure and ownership rights for vulnerable communities to enable them to implement long-term climate-resilient livelihood strategies. • *Market Linkages:* Facilitating access to markets and value chains to enable vulnerable groups to sell their climate-resilient products or services and improve their economic prospects. • *Gender and Social Inclusion:* Promoting gender equality and social inclusivity in climate-resilient livelihood opportunities to ensure equal participation and benefits for all members of society. • *Information Dissemination:* Ensuring that vulnerable communities have access to climate information and best practices related to climate-resilient livelihood options. • *Technology Transfer:* Facilitating the adoption of appropriate technologies and infrastructure, such as irrigation systems or renewable energy sources, to enhance the resilience of livelihood activities. • *Community Participation:* Engaging local communities in the planning and decision-making processes of climate-resilient livelihood initiatives to ensure their active involvement and ownership. • *Policy Support:* Advocating for supportive policies and regulations that incentivize and promote climate-resilient livelihood practices for vulnerable groups.				

			individuals, particularly women and minorities, in decision-making processes related to climate-resilient livelihood opportunities. • *Information and Knowledge Gaps:* Inadequate access to climate information and best practices may impede the adoption of climate-resilient livelihood options, leaving vulnerable groups more susceptible to climate risks. • *Technology and Infrastructure:* Limited access to appropriate technologies and infrastructure, such as irrigation systems or renewable energy sources, can hinder the implementation of climate-resilient livelihood practices. • *Institutional Support:* Inadequate support from government institutions or development agencies may hinder the scaling up of climate-resilient livelihood initiatives for vulnerable groups.					
4. Human Rights	**YES partially**, continuous assessment of ensuring the application of a human rights-based approach has been ensured in the programme development and will have to be considered for implementation and monitoring of programme activities, too. Community engagement and consultation opportunities will be created throughout the programme implementation process to allow for monitoring compliance and demand adjustment of processes ensuring the application of a human rights-based approach.	All outputs, particularly outputs 2.1 – 2.3	The programme has a **LOW RISK** of non-compliance with human rights obligations made by Azerbaijan. Nevertheless, there are potential risks that may arise during its implementation. These risks should be thoroughly monitored and addressed through appropriate mitigation measures. Potential risks and mitigation measures for human rights implications during the implementation of urban climate adaptation programs in Azerbaijan include: • *Displacement and Resettlement*: Climate adaptation projects may lead to the displacement of communities, affecting their right to adequate housing and livelihoods. • *Access to Basic Services:* Climate adaptation initiatives may inadvertently disrupt access to essential services such as water, sanitation, and healthcare, affecting the right to health and well-being. • *Land and Property Rights:* Climate adaptation projects may encroach on land and property rights, particularly affecting vulnerable groups' rights to land and resources. • *Right to Participation:* Insufficient engagement of communities in decision-making processes may violate their right to participate in matters that affect them. • *Discrimination and Marginalization*: Climate adaptation measures may disproportionately impact certain groups, leading to discrimination and further marginalization. • *Resilience and Vulnerability:* Climate adaptation projects may not adequately address underlying vulnerabilities, exacerbating inequalities, and undermining long-term resilience. • *Information and Access to Justice:* Lack of information about climate adaptation projects and limited access to justice may hinder accountability and redress for affected communities. • *Climate-induced Migration:* Climate change impacts may trigger internal and cross-border migration, affecting the human rights of migrants and refugees. It is essential to note, however, that the effective implementation and enforcement of these human rights obligations may vary in practice, and challenges may exist in ensuring full compliance with international standards. Human rights organizations and international bodies continually monitor and assess the human rights situation in each country and provide recommendations to strengthen human rights protection and promotion.	As members of the UN, both are bound by various international human rights treaties and conventions, including: (1) Universal Declaration of Human Rights (UDHR); (2) International Covenant on Civil and Political Rights (ICCPR); (3) International Covenant on Economic, Social and Cultural Rights (ICESCR); (4) Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW); (5) Convention on the Rights of the Child (CRC); (6) Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT); (7) Convention on the Rights of Persons with Disabilities (CRPD); and (8) International Convention on the Elimination of All Forms of Racial Discrimination (ICERD). UN-Habitat, along with UNEP and IOM as executing entities, follows a human rights-based approach (HRBA) that places human rights principles at the core of their development, humanitarian, and governance efforts. This UN framework emphasizes the promotion and protection of human rights for all individuals without discrimination, fostering sustainable and inclusive development and building peaceful societies. By incorporating HRBA into their policies and procedures, the UN aims to prevent human rights violations during programme implementation. As implementing and executing entities of programme, they are committed to complying with these principles, reducing the likelihood of human rights violations. This will include measures such as: • *Community engagement and consultation:* Ensuring that communities are consulted, and their views taken into consideration before and during programme implementation. • *Environmental and social impact assessments:* Carrying out assessments to ensure that projects do not have adverse impacts on communities and their rights. • *Anti-discrimination policies:* Implementing policies that prohibit discrimination and promote equality and non-discrimination in all aspects of programme implementation. • *Grievance mechanisms:* Establishing effective grievance mechanisms for communities to raise concerns and address any human rights violations during programme implementation. • *Monitoring and evaluation:* Regularly monitoring and evaluating the implementation of projects to identify and address any human rights violations. By proactively addressing potential risks through human rights-sensitive planning and implementation, urban climate adaptation programs in Azerbaijan can promote social justice, inclusivity, and resilience while respecting and protecting the human rights of all individuals and communities involved. • *Displacement and Resettlement*:(The programme does not envisage any displacement or resettlement of populations as interventions will take place on public land; climate action was identified accordingly. However, in case it will have to be considered, a thorough social impact assessments will be conducted, engaging affected communities in decision-making, and ensure fair compensation and resettlement support where necessary. • *Access to Basic Services:* From the onset of conceptualization, the programme has integrated climate adaptation and human rights considerations in project planning and prioritizes measures that enhance access to essential services for vulnerable communities. • *Land and Property Rights:* Ensure adherence to national laws and international human rights standards, conduct transparent land tenure assessments, and provide legal support to affected communities to protect their rights. • *Right to Participation:* Adopt participatory approaches, hold public consultations, and involve local communities in all stages of programme planning and implementation. • *Discrimination and Marginalization*: Apply a human rights-based approach, consider the needs and vulnerabilities of different groups, and prioritize inclusive projects that address the rights of marginalized communities. • *Resilience and Vulnerability:* Follow the comprehensive vulnerability assessments, target resources to address the root causes of vulnerability, and strengthen social safety nets for vulnerable populations. • *Information and Access to Justice:* Ensure transparency in programme communication, establish accessible complaint mechanisms, and provide legal aid support to those whose rights are violated. • *Climate-induced Migration:* Develop policies that protect the rights of climate-induced migrants, promote safe and orderly migration, and address the root causes of displacement.	• UN-Habitat • UNEP • IOM Azerbaijan	In Azerbaijan, various institutions are responsible for fulfilling human rights obligations and ensuring the protection and promotion of human rights. These institutions play different roles in upholding human rights and may include: • National Human Rights Institutions (NHRIs)/ High Council for Human Rights • Law Enforcement Agencies • Society Organizations (CSOs) • Ministry of Ecology and Natural Resources • State Committee on Urban Planning and Architecture Communities – direct and indirect beneficiaries - in all seven locations where climate adaptation initiatives are executed	UN-Habitat HQ in Nairobi, Kenya	Continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

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5. Gender Equity and Women's Empowerment	**YES**, continuous assessment of ensuring gender equity and women empowerment mainstreaming has been considered in the programme development and must be ensured throughout project implementation and monitoring of progress. Community engagement and consultation opportunities will be created throughout the project implementation process to allow for the monitoring of gender equity and women empowerment throughout the project implementation and demand adjustment of processes to ensure compliance, if required.	All outputs, particularly outputs 2.1 – 2.3	**HIGH RISK** Although the project activities themselves should not exacerbate any gender disparities, given the situation in the countries as outlined in the *Gender Baseline Assessment Annex,* the Republic of Azerbaijan has low gender parity rankings with political empowerment and labour participation in being particularly imbalanced. There is therefore a risk that women are not fully included in the project and their potential to benefit is reduced. Potential risks for gender equity and women's empowerment implications during the implementation of urban climate adaptation programs in the Republic of Azerbaijan may include: • *Limited Participation of Women in Decision-making:* Women's voices and perspectives may be marginalized in decision-making processes related to climate adaptation initiatives. • *Unequal Access to Resources:* Women may face barriers in accessing resources, information, and technology required for climate adaptation. • *Gender-based Violence:* Climate-induced stresses may exacerbate gender-based violence, affecting women's safety and well-being. • *Gender Stereotypes and Social Norms:* Deep-rooted gender stereotypes and social norms may hinder women's participation in climate adaptation initiatives. • *Lack of Gender-disaggregated Data*: Insufficient data on gender-specific vulnerabilities may hinder effective targeting of climate adaptation measures. • *Limited Access to Public Spaces*: Inadequate consideration of gender dynamics may result in urban spaces that are less accessible and safe for women. • *Unequal Benefits:* Women may not fully benefit from climate adaptation projects, leading to further gender disparities. • *Lack of Gender-sensitive Policies:* Inadequate incorporation of gender considerations in policies and regulations may hinder effective implementation.	By proactively addressing potential risks through gender-responsive planning, capacity-building, and policy advocacy, urban climate adaptation programs in the Republic of Azerbaijan can advance gender equity and women's empowerment, ensuring that climate resilience efforts benefit all members of society equitably. Mitigation measures may include: • Ensure gender-responsive and inclusive planning by actively involving women in all stages of project design, implementation, and evaluation. Promote women's leadership and representation in relevant committees and decision-making bodies. Prioritize projects that address gender-specific needs and create mechanisms to ensure equal access to resources, finance, and technology for women. Implement capacity-building programs to enhance women's skills and knowledge in climate resilience. • Incorporate measures to prevent and address gender-based violence in climate adaptation plans. Strengthen support systems, establish safe spaces, and provide access to justice and support services. • Conduct gender sensitization training for all stakeholders involved in the project to challenge stereotypes and promote gender equality. Engage community leaders and influencers to advocate for women's active involvement. • Conduct gender-disaggregated data collection and analysis to understand the distinct vulnerabilities and capacities of women and men. Use gender data to inform project design and monitor its impact on gender equity. • Adopt gender-responsive urban planning that prioritizes safe and inclusive public spaces for women. Involve women in designing public spaces to ensure their needs and concerns are addressed. • Conduct gender impact assessments to identify potential gender gaps and prioritize measures that empower women and promote their economic and social well-being. • Advocate for gender-sensitive policies that address the specific needs and vulnerabilities of women in climate adaptation. Ensure policy coherence between climate, gender, and development agendas. In particular, the engagement of women, female migrants and women and girls in families left behind by migrants, in the trainings, capacity building and consultations will be prioritized as outlined in the plan below. Attention to how women are disproportionately affected by heat, drought and flooding risk and how to ensure they benefit from the measures, including the EWS, public green spaces and improved water access will be emphasized throughout implementation. • During the project implementation, UN-Habitat as implementing entity will ensure the equal rights, responsibilities, and opportunities for all genders, regardless of their sex. Particular attention will be paid to women's empowerment, hereby increasing the social, economic, and decision-making abilities of women. Within the cultural context in the Caspian Sea region, gender norms and stereotypes will be challenged and an environment where women can thrive enabled. This is within the framework and concepts • or promoting human rights and creating a more just and equal society. • A gender analysis was completed during the elaboration of the proposal, under the guidance of consultants, to ensure the project is fully in line with the gender perspective requirements. Equal rights, representation in decision-making processes and access of women to the benefits of climate change adaptation have been ensured. Where applicable, project activities have been designed to include participation quotas (at least 30% up to 50%), especially for training and leadership promotion activities. For consultations and capacity building activities, women are strongly encouraged to participate at all the project development and implementation stages. Guaranteed minimum quotas of women participating and benefiting from workshops and training on technical capacity and climate adaptation measure will highlight women's role in climate change adaptation. This will strengthen women within their communities' decision-making processes, as well as	Programme Management Unit (PMU) with gender consultants working on EWS, green corridors, water management and institutions supporting climate resilient livelihood opportunities	• Ministry of Ecology and Natural Resources • State Committee on Urban Planning and Architecture Women and men in communities – direct and indirect beneficiaries - in all seven locations where climate adaptation initiatives are executed	• UN-Habitat • UNEP • IOM Azerbaijan	Continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

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				promote equal participation of women in the development, implementation, and M&E activities of the project. The project will strengthen the representation and contribution of women to local decision-making processes, promote the participation of women in decision-making within the household or the community, raise awareness through training for communities and leaders on gender-related issues. The project knowledge management strategy has a gender quota of 30-50% and will promote women leadership and decision-making power for climate change adaptation.				
6. Core Labour Rights	**NO** further assessment is required, considering that compliance with core labour rights has been reviewed during the programme development phase. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the programme and demand adjustments as required.	All outputs, particularly outputs 2.1 – 2.3	The UN respects core labour rights by promoting and upholding fundamental labour standards from international conventions. The UN also advocates for decent work and sustainable development, recognizing the importance of protecting workers' rights and well-being while achieving economic and social progress. This involves advocating for fair wages, safe working conditions, social protection, and respect for workers' dignity. By integrating core labour rights into its policies and programs, the UN plays a crucial role in advancing social justice, inclusivity, and human rights in the world of work. The programme has a **LOW RISK** of non-compliance with core labour right obligations made by Azerbaijan. Azerbaijan has made progress in addressing labour rights, including forced and child labour, workplace discrimination, and occupational safety and health. Nevertheless, there are potential risks that may arise during its implementation. These risks should be thoroughly monitored and addressed through appropriate mitigation measures. Potential risks and mitigation measures for core labour right implications during the implementation of urban climate adaptation programs in the Republic of Azerbaijan include: • *Exploitative Labor Practices:* Climate adaptation projects may lead to increased demand for labour, potentially resulting in exploitative working conditions and violations of labour rights. • *Informal labour market*: Climate adaptation initiatives may rely on informal labour, which could lead to precarious work and lack of social protection for workers. • *Occupational health and safety hazards*: Workers engaged in climate adaptation projects may face increased occupational health and safety risks due to the nature of the work. • *Discrimination and gender inequality*: Certain groups of workers, such as women and minority groups, may face discrimination and unequal treatment in labour opportunities. • *Displacement of informal workers:* Climate adaptation projects may lead to the displacement of informal workers, affecting their livelihoods. • *Lack of skills and training:* Climate adaptation projects may require specific skills and knowledge, leading to the exclusion of certain workers from job opportunities. • *Contractual and wage disputes:* Disputes over contracts, wages, and benefits may arise during programme implementation, leading to labour conflicts.	This programme is committed to ensuring that all workers are treated with dignity and respect, and that their rights are protected. This includes compliance with international labour standards, including the prohibition of child labour and forced labour. UN-Habitat as implementing entity and IOM as executing entity will take all necessary steps to ensure that these standards are upheld throughout the entire supply chain and will take appropriate action in the event of any violations. Moreover, the executing entities will ensure all contracts are in place that meet core labour standards. Contracts should include occupational health and safety provisions in their budget. Safety measures are implemented while implementing work and PPE and safety gears are provided and used by workers at the project site. Worker data to be maintained at site with age and identify cards. There will be monitoring of work sites throughout the course of the project. Particularly, by addressing potential risks through labour rights-focused planning, implementation, and monitoring, urban climate adaptation programs in the Republic of Azerbaijan can promote fair and inclusive labour practices, protect workers' rights, and contribute to sustainable and just development. Mitigation measures may include: • *Exploitative Labor Practices:* Ensure adherence to national labour laws and international labour standards. Implement fair labour practices, including decent wages, safe working conditions, and protection against exploitation. • *Informal labour market*: Encourage formal employment and provide support for informal workers to transition to formal jobs. Ensure access to social protection, such as health care and social security, for all workers involved in the programme. • *Occupational health and safety hazards:* Conduct comprehensive risk assessments and implement measures to ensure worker safety and health. Provide appropriate personal protective equipment and training for handling potential hazards. • *Discrimination and gender inequality*: Promote gender equality and non-discrimination in employment. Implement affirmative action measures to address the underrepresentation of marginalized groups in the workforce. • *Displacement of informal workers:* Conduct social impact assessments to identify potential risks to informal workers. Develop strategies to support affected workers in finding alternative livelihood opportunities or providing compensation as appropriate. • *Lack of skills and training:* Mitigation: Invest in skills development and training programs to enhance the employability of local workers. Prioritize hiring and capacity-building for the local workforce. • *Contractual and wage disputes:* Establish transparent and fair contract agreements and wage systems. Set up grievance mechanisms to address labour-related disputes promptly.	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	*Republic of Azerbaijan:* • State Committee on Urban Planning and Architecture • Ministry of Labour and Social Protection of the Population	UN-Habitat HQ in Nairobi, Kenya	Continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up
7. Indigenous Peoples	**NO** further assessment is required, considering that rights of indigenous people are not infringed during the programme development phase. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation	All outputs, particularly outputs 2.1 – 2.3	**NO RISK** The interventions will not have an impact on the rights, lands, resources, and territories of indigenous peoples.	The programme will ensure that free and prior informed consent are secured for all activities associated with stakeholders including marginalized and vulnerable groups.	Programme Management Unit (PMU)	Communities – direct and indirect beneficiaries - in all seven locations where climate adaptation initiatives are executed *Republic of Azerbaijan:* • State Committee on Urban Planning and Architecture	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

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	of the programme and demand adjustments as required.							
8. Involuntary Resettlement[23]	**NO** further assessment is required, considering that no act of involuntary resettlement is envisaged during the programme development phase. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the project and demand adjustments as required.	All outputs, particularly outputs 2.1 – 2.3	**NO RISK** The interventions will not promote the implementation of local initiatives that will foster involuntary relocation.	This programme is committed to avoiding involuntary relocation of communities and minimizing its adverse impacts. The following measures will be taken: • Conducting comprehensive assessments of the potential impacts of the programme on communities and their livelihoods. • Engaging with affected communities and stakeholders to ensure that their views and needs are taken into consideration. • Seeking alternative solutions that avert or minimize relocation where possible, such as modifying project design or relocating facilities. • Where relocation is unavoidable, ensure that it is carried out in a manner that is fair, transparent, and in accordance with international standards. • Providing adequate compensation and support for those who are relocated, including assistance in relocating and restoring their livelihoods. • Monitoring and evaluating the relocation process to ensure that the rights and needs of affected communities are protected and addressed.	Project Management Unit (PMU)	Communities – direct and indirect beneficiaries - in all seven locations where climate adaptation initiatives are executed *Republic of Azerbaijan:* • State Committee on Urban Planning and Architecture	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up
9. Protection of natural Habitats	**YES partially,** further assessments might be required to ensure that the protection of natural habitats is ensured throughout the implementation of the programme and beyond. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the project and demand adjustments as required.	All outputs, particularly outputs 2.1 – 2.3	**MEDIUM RISK** To a certain extent, all climate adaptation measures implemented at local level will involve the protection of natural habitats. A varying degree of risks apply for each of the seven proposed interventions. (1) Potential risks for the protection of natural habitats in green corridor and public space initiatives related to urban climate adaptation programming in the Republic of Azerbaijan may include: • *Habitat destruction and fragmentation:* The expansion of green corridors and public spaces may lead to habitat destruction and fragmentation, which can negatively impact local biodiversity and ecosystems. • *Loss of native species*: If the planning and design of green corridors and public spaces do not consider the preservation of native plant and animal species, there is a risk of losing biodiversity and disrupting the natural balance. • *Invasive species introduction:* Inadequate management of green corridors and public spaces may lead to the introduction and spread of invasive species, posing a threat to native flora and fauna. • *Water resource depletion:* Unsustainable water management practices within green corridors and public spaces can lead to the depletion of water resources, affecting nearby habitats and ecosystems. • *Soil erosion and pollution:* Improper construction and maintenance of green corridors and public spaces can cause soil erosion and pollution, which may harm natural habitats and water bodies. • *Human-wildlife conflict*: Encroachment of green corridors into human settlements might increase human-wildlife conflict, especially in areas where wildlife habitats overlap with residential areas. • *Social displacement and land use conflicts*: Green corridor and public space development might lead to the displacement of local communities and conflicts over land use and resource allocation. • *Lack of proper monitoring and management:* Insufficient monitoring and management of green corridors and	(1) Mitigation measures for the protection of natural habitats in green corridor and public space initiatives **(see Output 3.1)** related to urban climate adaptation programming in the Republic of Azerbaijan can effectively protect natural habitats and contribute to overall environmental sustainability and resilience, including: • *Conducting Comprehensive Environmental Assessments*: Prioritize environmental impact assessments to understand the potential effects of green corridor and public space initiatives on natural habitats and ecosystems. • *Engaging experts and stakeholders*: Involve ecologists, environmentalists, local communities, and relevant stakeholders in the planning and implementation process to ensure sustainable practices and respect for natural habitats. • *Restoration and conservation efforts*: Implement habitat restoration and conservation programs to maintain and enhance biodiversity in green corridors and public spaces. • *Native species planting*: Prioritize the use of native plant species in the development of green corridors to support local ecosystems and biodiversity. • *Water management*: Adopt sustainable water management practices to ensure adequate water supply without depleting local water resources. • *Proper waste management*: Implement effective waste management systems to prevent pollution and protect natural habitats and water bodies. • *Wildlife education and awareness*: Conduct awareness campaigns to educate local communities about the importance of coexisting with wildlife and how to prevent human-wildlife conflicts. • *Land use planning and consultation*: Involve local communities and relevant stakeholders in land use planning to address potential conflicts and ensure equitable resource allocation. (2) Mitigation measures for the protection of natural habitats to EWS initiatives **(see Output 3.2)** related to urban climate adaptation programming in the Republic of Azerbaijan can effectively protect natural habitats and contribute to overall environmental sustainability and resilience, including: • *Environmental Impact Assessment*: Conduct thorough environmental impact assessments before implementing EWS initiatives to identify potential risks to natural habitats and ecosystems. • *Sustainable site selection*: Choose EWS installation sites strategically, considering the least disruptive locations to natural habitats and wildlife corridors. • *Habitat restoration and conservation*: Implement habitat restoration and conservation programs to compensate for any habitat loss and maintain biodiversity in the affected areas. • *Responsible waste management*: Establish proper waste management practices for EWS equipment and materials to prevent pollution and contamination.	Programme Management Unit (PMU) with consultants and contractors	*Republic of Azerbaijan:* • Ministry of Ecology and Natural Resources	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

[23] IOM is referring to "planned relocation" instead of using the term "resettlement". In the context of disasters or environmental degradation, including when due to the effects of climate change, a planned process in which persons or groups of persons move or are assisted to move away from their homes or place of temporary residence, is settled in a new location and provided with the conditions for rebuilding their lives (IOM Glossary 2019, p.157).

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			public spaces may result in ineffective conservation efforts and a failure to protect natural habitats adequately. (2) Potential risks for the protection of natural habitats with regard to EWS initiatives related to urban climate adaptation programming in the Republic of may include: • *Habitat destruction and land use change:* The establishment of EWS infrastructure and facilities may require clearing land, leading to habitat destruction and alteration of natural ecosystems. • *Fragmentation and disruption of wildlife corridors:* EWS implementation may lead to the fragmentation and disruption of wildlife corridors, affecting the movement of animals and potentially isolating populations. • *Water resource depletion:* EWS initiatives may require water resources for monitoring and data collection, potentially impacting nearby habitats and water bodies if not managed sustainably. • *Pollution and contamination:* Improper disposal of EWS equipment and materials could lead to pollution and environmental contamination, affecting natural habitats and species. • *Noise and light pollution:* EWS installations, such as sirens or monitoring stations, may generate noise and light pollution that could disturb wildlife and affect sensitive habitats. • *Invasive species introduction*: Inadequate management and maintenance of EWS infrastructure may facilitate the introduction and spread of invasive species, which can harm native flora and fauna. • *Human disturbance*: The presence of EWS infrastructure and activities might attract human visitors, leading to increased human disturbance in natural habitats and sensitive areas. (3) Potential risks for the protection of natural habitats with regard to improved water management initiatives related to urban climate adaptation programming in the Republic of Azerbaijan may include: • *Water diversion and depletion*: Improved water management measures, such as reservoirs or water distribution systems, may lead to the diversion or depletion of water from natural habitats, impacting aquatic ecosystems and wildlife. • *Alteration of water flow*: Changes in water flow patterns due to improved water management may disrupt the natural hydrology of rivers and wetlands, affecting the habitat and breeding grounds of various species. • *Habitat fragmentation*: The construction of water infrastructure may fragment natural habitats, leading to isolation of populations and hindering the movement of wildlife. • *Water pollution*: Inadequate wastewater treatment or runoff from urban areas could result in water pollution, negatively impacting aquatic habitats and biodiversity. • *Invasive species introduction*: Water management projects may inadvertently facilitate the introduction and spread of invasive species through altered water flow, posing threats to native flora and fauna. • *Erosion and sedimentation*: Construction activities associated with water management initiatives may cause soil erosion and sedimentation, harming nearby ecosystems and water bodies. • *Land use change*: Changes in water availability and management may influence land use patterns, potentially leading to habitat conversion and loss. (4) Potential risks for the protection of natural habitats with regard to climate-resilient livelihood options initiatives related to urban climate adaptation programming in the Republic of Azerbaijan may include: • *Land use change and habitat conversion*: The implementation of climate-resilient livelihood options may require changes in land use and the conversion of natural habitats for agricultural, infrastructural, or other purposes, leading to habitat loss and fragmentation.	• *Wildlife corridor protection*: Design EWS initiatives to avoid disrupting wildlife corridors and ensure the free movement of animals within their natural habitats. • *Water conservation measures*: Adopt water conservation practices for EWS operations to minimize water resource depletion and protect nearby habitats. • *Lighting and noise reduction*: Implement measures to minimize light and noise pollution from EWS installations to reduce disturbances to wildlife. • *Public awareness and education*: Raise public awareness about the importance of protecting natural habitats and wildlife, encouraging responsible behaviour around EWS sites. (3) Mitigation measures for the protection of natural habitats to improved water management initiatives **(Output 3.3)** related to urban climate adaptation programming in the Republic of Azerbaijan can effectively protect natural habitats and contribute to overall environmental sustainability and resilience, including: • Environmental Impact Assessment: Conduct comprehensive environmental impact assessments before implementing water management initiatives to identify potential risks to natural habitats and ecosystems. • *Sustainable water management practices*: Implement sustainable water management practices that prioritize the protection of natural habitats and ecological flows. • *Habitat restoration and conservation*: Implement habitat restoration and conservation programs to compensate for any habitat loss and maintain biodiversity in affected areas. • *Biodiversity monitoring*: Monitor the impact of water management initiatives on biodiversity and natural habitats to ensure early detection of any adverse effects. • *Invasive species management*: Implement measures to prevent the introduction and spread of invasive species in water bodies and adjacent habitats. • *Sediment control measures*: Adopt erosion control measures during construction to minimize sedimentation and its impact on nearby ecosystems. • *Participatory planning*: Involve local communities, environmental experts, and stakeholders in the planning and decision-making process to incorporate their knowledge and concerns regarding habitat protection. • *Sustainable land use planning*: Integrate water management and land use planning to ensure the conservation of natural habitats and their connectivity. Studies as part of the national component, including the nature-based solutions study, and monitoring as part of the regional component will support better understanding of environmental hazards and ensure interventions do not exacerbate existing issues. (4) Mitigation measures for the protection of natural habitats to improved water management initiatives **(see Outputs 3.1)** related to urban climate adaptation programming in the Republic of Azerbaijan can effectively protect natural habitats and contribute to overall environmental sustainability and resilience, including: • *Environmental Impact Assessment*: Conduct comprehensive environmental impact assessments before implementing climate-resilient livelihood options to identify potential risks to natural habitats and ecosystems. • *Sustainable land use planning*: Integrate climate-resilient livelihood options into sustainable land use planning to minimize habitat conversion and protect natural habitats. • *Biodiversity monitoring*: Monitor the impact of climate-resilient livelihood options on biodiversity and natural habitats to ensure early detection of any adverse effects. • *Resource management and conservation*: Implement sustainable resource management practices to prevent overexploitation and depletion of natural resources. • *Invasive species control*: Implement measures to prevent the introduction and spread of invasive species associated with climate-resilient livelihood options. • *Pollution prevention and mitigation*: Adopt pollution prevention measures and implement proper waste management practices to minimize the impact of livelihood activities on nearby habitats and water bodies. • *Habitat restoration and conservation*: Implement habitat restoration and conservation programs to offset any habitat loss and promote ecological balance. • *Community participation*: Involve local communities and stakeholders in the planning and decision-making process to ensure that climate-resilient livelihood options are developed and implemented in a manner that respects and protects natural habitats.				

			• *Resource overexploitation*: Climate-resilient livelihood options that involve increased use of natural resources, such as water or timber, may lead to overexploitation and depletion of these resources, impacting nearby habitats and ecosystems. • *Introduction of invasive species*: Climate-resilient livelihood options, such as the introduction of new crops or livestock, may inadvertently introduce invasive species that could harm native flora and fauna and disrupt ecological balance. • *Pollution and contamination*: The adoption of certain climate-resilient livelihood practices, such as intensive agriculture or industrial activities, may result in pollution and contamination of soil, water, and air, affecting nearby habitats and wildlife. • *Fragmentation of natural corridors*: Climate-resilient livelihood options may lead to the fragmentation of natural corridors and habitats, affecting the movement of wildlife and reducing biodiversity.					
10. Conservation and Biological Diversity	**YES partially,** further assessments might be required to ensure that conservation and biological diversity are ensured throughout the implementation of the programme and beyond. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the programme and demand adjustments as required.	All outputs, particularly outputs 2.1	**MEDIUM RISK** Although project sites were chosen at a distance from legally protected areas. **Output 2.1** will involve alterations to the environment which if not undertaken with the current and future climate and pressures on biodiversity and water resources could exacerbate problems. Potential risks for conservation and biological diversity with regard to green corridors and public space initiatives related to urban climate adaptation programming in the Republic of Azerbaijan may include: • *Habitat destruction and fragmentation*: The establishment of green corridors and public spaces may require land clearing or alterations, leading to habitat destruction and fragmentation, which can disrupt ecosystems and negatively impact biodiversity. • *Non-native species introduction*: Green corridors and public spaces may inadvertently facilitate the introduction and spread of non-native plant and animal species, posing a threat to native flora and fauna. • *Loss of biodiversity hotspots*: Green corridor and public space development may lead to the loss of biodiversity hotspots and critical habitats for endangered species, reducing overall biological diversity. • *Displacement of wildlife*: Construction and human activities in green corridors and public spaces may lead to the displacement of wildlife, affecting their migration routes and behaviour patterns. • *Soil and water contamination*: Improper land management and usage in these areas may result in soil and water contamination, impacting the health of plants and animals. • *Urbanization pressure*: The expansion of urban areas and infrastructure development within green corridors and public spaces can exert pressure on surrounding natural habitats, leading to further loss of biodiversity. • *Inadequate maintenance*: Insufficient maintenance of green corridors and public spaces can lead to degradation and loss of their ecological value over time.	Studies as part of the national component, including the nature-based solution study, and monitoring as part of the regional component will support better understanding of environmental hazards and ensure interventions do not exacerbate existing issues. For **Output 2.1,** plant species will be chosen with consideration to avoid invasive and water intensive species. By integrating these mitigation measures into the planning and implementation of green corridors and public space initiatives, urban climate adaptation programming in the Republic of Azerbaijan can effectively balance the need for climate resilience with the conservation and protection of biodiversity, contributing to sustainable and ecologically balanced urban development, including: • *Environmental Impact Assessment*: Conduct comprehensive environmental impact assessments before establishing green corridors and public spaces to identify potential risks to conservation and biodiversity. • *Native species promotion*: Prioritize the use of native plant species in green corridors and public spaces to support local biodiversity and ecosystem health. • *Invasive species management*: Implement measures to prevent and control the spread of non-native species in these areas. • *Protected area designation*: Identify and designate critical habitats and biodiversity hotspots within green corridors and public spaces for protection and conservation. • *Wildlife-friendly design:* Incorporate wildlife-friendly design principles into the development of green corridors and public spaces to minimize disturbances to wildlife. • *Sustainable land management*: Implement sustainable land management practices to preserve soil and water quality within these areas. • *Habitat restoration*: Undertake habitat restoration efforts in degraded areas to enhance biodiversity and ecological functions. • *Community engagement*: Involve local communities and stakeholders in the planning and management of green corridors and public spaces to foster a sense of ownership and conservation stewardship.	Programme Management Unit (PMU) with consultants and contractors	*Republic of Azerbaijan:* • Ministry of Ecology and Natural Resources	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up
11. Climate Change	**No** further assessment is required to ensure that the programme is not negatively contributing to climate change during implementation and beyond. Community engagement and consultation opportunities will be created, however, to	All outputs, particularly outputs 2.1 – 2.3	**LOW RISK** The interventions are not energy intensive and do not involve net carbon land use changes. The interventions have been identified to adapt to climate change risks, including: (1) While green corridors and public spaces generally offer numerous climate change benefits, they can also pose certain risks in specific contexts like the Republic of Azerbaijan, including: • *Urban heat island effect*: Green corridors and public spaces can mitigate the urban heat island effect by providing shade and cooling the surrounding environment. However, inadequate planning or maintenance may not effectively address heat island risks. • *Water management challenges*: Green spaces may require water for irrigation, especially in arid regions. • *Biodiversity impact*: While green corridors can enhance biodiversity, improper planning or introduction of non-	(1) By implementing appropriate mitigation measures, green corridors and public spaces initiatives **(see Output 3.1)** in the Republic of Azerbaijan can become valuable assets in building climate-resilient cities, fostering biodiversity, and improving the overall quality of urban environments. These include: • *Sustainable Land Use Planning*: Implement sustainable land use planning that considers climate change risks and ensures that green corridors and public spaces are strategically placed to benefit urban areas and ecosystems. • *Water-efficient landscaping*: Use water-efficient landscaping techniques and native plant species to reduce water demand and conserve water resources in green spaces. • *Biodiversity conservation*: Incorporate biodiversity conservation measures into green corridor design to promote the protection of native species and habitats. • *Integrated management*: Develop comprehensive management plans for green corridors and public spaces, including maintenance schedules, waste management, and public safety measures. If feasible, monitoring of carbon dioxide reduction will be included to monitor positive co-benefits. • *Community engagement*: Involve local communities and stakeholders in the planning and maintenance of green spaces, fostering a sense of ownership and responsibility.	Programme Management Unit (PMU)	*Republic of Azerbaijan:* • Ministry of Ecology and Natural Resources	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

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	assess compliance in the implementation of the programme and demand adjustments as required.		native species may lead to invasive species, disrupting local ecosystems. • *Land use conflicts*: Creating green spaces may trigger land use conflicts between conservation and development goals. • *Habitat fragmentation*: If green corridors are not strategically planned and connected, they may contribute to habitat fragmentation, limiting the movement of wildlife and reducing biodiversity. (2) Inappropriate water management can lead to several climate change risks in the Republic of Azerbaijan, exacerbating the impacts of climate-related hazards. Some of these risks include: • *Water scarcity*: Poor water management practices can deplete water resources, leading to water scarcity and inadequate water supply for communities, agriculture, and industries. • *Floods and waterlogging*: Improper water management, such as inadequate drainage systems and deforestation, can contribute to increased surface runoff, leading to floods and waterlogging in certain areas during heavy rainfall events. • *Groundwater depletion*: Overextraction of groundwater for irrigation or other purposes without proper recharge mechanisms can lead to the depletion of groundwater resources, affecting water availability for both human consumption and ecosystems. • *Salinization*: Improper irrigation practices, such as excessive water use or inadequate drainage, can cause soil salinization, reducing agricultural productivity and damaging ecosystems. • *Water Pollution*: Inadequate wastewater treatment and improper disposal of industrial and agricultural runoff can result in water pollution, affecting water quality and posing health risks to communities.	• *Climate-resilient infrastructure*: Incorporate climate-resilient infrastructure, such as green roofs and permeable pavements, in public spaces to enhance climate adaptation and minimize risks. • *Education and awareness*: Conduct educational campaigns to raise awareness among the public about the benefits of green spaces and their role in climate change mitigation and adaptation. (2) By implementing appropriate mitigation measures, improved water management initiatives **(Output 3.3,)** in the Republic of Azerbaijan can improve water management practices, reduce climate change risks associated with water, and enhance overall resilience to climate-related challenges related to water resources. These include: • *Sustainable water management*: Adopt sustainable water management practices, including water conservation, rainwater harvesting, and efficient irrigation techniques, to optimize water use and reduce wastage. • *Integrated water resource management*: Implement integrated water resource management approaches to balance water allocation between different sectors and ensure equitable access to water resources. • *Watershed protection*: Protect and restore natural watersheds and wetlands to enhance water retention and reduce the risk of floods and waterlogging. • *Groundwater management*: Develop groundwater monitoring and management systems to regulate groundwater extraction and prevent overexploitation, promoting sustainable use. • *Stormwater management*: Implement effective stormwater management practices, such as green infrastructure, permeable pavements, and retention ponds, to mitigate flood risks and improve water quality. • *Water quality monitoring*: Establish water quality monitoring programs to identify sources of pollution and implement measures to prevent water contamination. • *Public awareness*: Conduct public awareness campaigns to educate communities about the importance of responsible water use, water conservation, and the role of proper water management in climate change adaptation. • *Policy and regulation*: Develop and enforce water management policies and regulations that promote sustainable water use and protect water resources.				
12. Pollution Prevention and Resource Efficiency	**YES partially,** further assessments might be required to ensure that pollution prevention and resource efficiency are guaranteed throughout the programme implementation and beyond. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the programme and demand adjustments as required.	All outputs, particularly outputs 2.1 – 2.3	**MEDIUM RISK** There are risks due to the use of fertilizers for 3.1 and the arid conditions which can exacerbate dust during construction as well as cause competition over water resources for new planting. The need to remediate soil in the rail lines in Baku can also increase exposure if not handled properly. (1) Green corridors and public spaces, while beneficial for urban climate adaptation, can also pose some pollution prevention and resource efficiency risks in the Republic of Azerbaijan. Some potential risks include: • *Green waste generation:* The creation and maintenance of green corridors and public spaces can lead to increased green waste generation, such as fallen leaves, grass clippings, and pruning residues, which may require appropriate management to prevent pollution. • *Chemical use*: The use of pesticides, herbicides, and fertilizers in maintaining green spaces can pose pollution risks if not managed properly, as these chemicals may leach into the soil and water bodies. • *Water consumption*: Green corridors and public spaces may require additional water for irrigation, potentially contributing to water stress in regions facing water scarcity. (2) Inappropriate water management can lead to pollution and resource efficiency risks in the Republic of Azerbaijan, exacerbating the impacts of climate-related hazards. Some of these risks include: • *Water pollution*: Improper handling and disposal of industrial and domestic wastewater can lead to water pollution, affecting water quality and posing health risks to communities and ecosystems. • *Inefficient water use*: Inefficient irrigation practices and water wastage can lead to the depletion of water resources, exacerbating water scarcity and affecting agricultural productivity. • *Soil erosion*: Inadequate water management, such as uncontrolled runoff and improper drainage, can lead to soil erosion, reducing soil fertility and causing sedimentation in water bodies.	UN-Habitat as implementing entity is committed to working closely with local authorities and relevant experts to ensure that these measures are implemented effectively, and that the construction and planting processes have a minimal impact on pollution and resource efficiency. (1) By implementing appropriate mitigation measures, green corridors and public spaces initiatives **(see Output 3.1)** in the Republic of Azerbaijan can ensure that green corridors and public spaces contribute positively to urban climate adaptation while minimizing their impact on pollution prevention and resource efficiency, leading to more sustainable and resilient urban environments. These include: • *Sustainable green waste management*: Implement sustainable green waste management practices, such as composting or mulching, to reduce the volume of green waste and recycle organic matter back into the ecosystem. • *Integrated pest management*: Adopt integrated pest management approaches that prioritize natural and non-toxic methods for pest control, minimizing the use of chemical pesticides. • *Organic fertilizers*: Utilize organic and environmentally friendly fertilizers to promote soil health and minimize the risk of water pollution. Proper application of fertilizers will be followed, and fertilizers will be selected that have the minimum impact on environment and human health. • *Water-efficient landscaping*: Design green spaces with water-efficient landscaping techniques, such as selecting drought-tolerant plants and utilizing efficient irrigation systems like drip irrigation. Proper remediation procedures will be followed to ensure no adverse impacts. • *Rainwater harvesting*: Implement rainwater harvesting systems in green spaces to collect and store rainwater for irrigation purposes, reducing the reliance on freshwater resources. • *Green infrastructure*: Incorporate green infrastructure elements, such as bioswales and rain gardens, to manage stormwater runoff, reducing the risk of water pollution from urban runoff. Moreover, plant species will be chosen that are not water intensive and are native species. The implementation of local initiatives with construction components will protect the environment and ensure minimizing any negative impacts on the surrounding community. This will be achieved through the implementation of strict pollution prevention measures, including but not limited to a) regular monitoring and control of air and water quality to ensure it meets or exceeds local and national standards; b) appropriate disposal of waste and management of hazardous materials to prevent contamination; c) implementation of noise control measures to limit excessive noise levels. *Public awareness*: Conduct public awareness campaigns to educate communities about the importance of pollution prevention and resource efficiency in green spaces and their role in climate adaptation. *Policy and regulation*: Develop and enforce policies and regulations that promote pollution prevention and	Programme Management Unit (PMU)	*Republic of Azerbaijan:* • Ministry of Ecology and Natural Resources • State Committee for Urban Planning and Architecture	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

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			• *Groundwater contamination*: Improper handling and disposal of hazardous substances can contaminate groundwater, a critical source of drinking water in many regions, leading to long-term environmental and health impacts. • *Energy consumption*: Inefficient water management practices, such as excessive pumping and treatment of water, can result in higher energy consumption, leading to increased greenhouse gas emissions.	resource efficiency in the design and maintenance of green corridors and public spaces. (2) By implementing appropriate mitigation measures, improved water management initiatives **(Output 3.3)** in the Republic of Azerbaijan can reduce pollution risks, and enhance overall resource efficiency, contributing to climate resilience and sustainable development in the regions. These include: • *Wastewater treatment*: Implement proper wastewater treatment systems to ensure that industrial and domestic wastewater is treated to meet environmental standards before being discharged. • *Water conservation*: Promote water conservation measures and water-efficient technologies to reduce water wastage and increase resource efficiency. • *Sustainable irrigation*: Encourage the adoption of efficient irrigation techniques, such as drip irrigation and rainwater harvesting, to optimize water use in agriculture. • *Soil conservation*: Implement soil conservation practices, such as terracing and contour plowing, to reduce soil erosion and protect agricultural land. • *Hazardous substances management*: Develop and enforce regulations for the proper handling and disposal of hazardous substances to prevent groundwater contamination. • *Integrated water resource management*: Adopt integrated water resource management approaches that consider the interactions between surface water and groundwater, as well as the needs of various sectors, to ensure sustainable water use. • *Renewable energy integration*: Promote the use of renewable energy sources for water pumping and treatment to reduce energy consumption and greenhouse gas emissions. • Public awareness: Conduct public awareness campaigns to educate communities about the importance of responsible water management and pollution prevention. • *Capacity building*: Provide training and capacity-building programs for water management professionals and stakeholders to enhance their skills and knowledge in sustainable water management practices.				
13. Public Health	**YES partially,** further assessments might be required to ensure that public health concerns are ensured throughout the implementation of the programme and beyond. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the programme and demand adjustments as required.	All outputs, particularly outputs 2.1 – 2.3	**MEDIUM RISK** (1) While the implementation of green corridors and public spaces can have numerous benefits for public health, there are also potential risks that need to be considered in the Republic of Azerbaijan, including: • *Vector-borne diseases*: Green spaces can provide breeding grounds for vectors such as mosquitoes, which may transmit diseases like malaria and dengue. • *Allergies and respiratory issues*: The presence of certain plants and trees in green spaces can trigger allergies and respiratory problems for some individuals. • *Food safety concerns*: If green spaces include community gardens or areas where food is grown, there may be potential risks of food contamination. Mitigation measures include implementing good agricultural practices, providing education on safe food handling, and conducting regular soil testing for contaminants. • *Waterborne diseases*: Poor water management and maintenance of water features in green spaces can lead to the spread of waterborne diseases. • *Physical safety hazards*: Insufficient maintenance and supervision of green spaces can lead to physical safety hazards, such as tripping hazards or unsafe playground equipment. • *Mental health and social inclusion*: While green spaces can improve mental well-being and social inclusion, there is a risk that certain vulnerable groups may not have equal access or feel safe in these areas. • *Zoonotic diseases*: Contact with wildlife or domestic animals in green spaces can pose a risk of zoonotic diseases. (2) While improved water management can have significant benefits for public health, there are potential risks that need to be considered during implementation in the Republic of Azerbaijan, including: • *Waterborne diseases*: Changes in water management practices can impact the quality of water supply and distribution, leading to potential waterborne diseases such as cholera and dysentery. • *Water scarcity*: Inappropriate water management practices may exacerbate water scarcity issues, leading to reduced access to safe drinking water and sanitation.	UN-Habitat as an implementing entity is committed to working closely with local authorities and relevant experts to ensure that these measures are implemented effectively, and that the construction process has a minimal impact on public health. The implementation of local initiatives with construction components will protect public health and ensure to minimize any negative impacts on the surrounding community. This will be achieved through the implementation of strict health and safety measures, including but not limited to a) regular monitoring and control of air and water quality to ensure it meets or exceeds local and national standards; b) proper disposal of waste and management of hazardous materials to prevent contamination; c) implementation of noise control measures to limit excessive noise levels; d) provision of adequate personal protective equipment for workers and regular training on health and safety; and e) regular communication with local residents and other stakeholders to keep them informed an address any concerns they may have. (1) By implementing appropriate mitigation measures and conducting thorough risk assessments during the planning and design stages of green corridors and public spaces **(see Output 3.1),** the Republic of Azerbaijan can maximize the positive impact on public health while minimizing potential risks and ensuring safe and inclusive environments for all residents. These include: • *Vector-borne diseases*: Regular monitoring and management of standing water, implementing mosquito control measures, and promoting the use of insect repellents. • *Allergies and respiratory issues*: Selecting allergy-friendly vegetation, providing information on potential allergens, and ensuring proper maintenance to prevent the accumulation of allergenic materials. • *Food safety concerns*: Implementing good agricultural practices, providing education on safe food handling, and conducting regular soil testing for contaminants. • *Waterborne diseases*: Regular water quality monitoring, proper filtration and treatment of water bodies, and maintaining proper hygiene in recreational water areas. • *Physical safety hazards*: Regular inspections, prompt repair of any safety issues, and ensuring proper lighting and visibility in public spaces. • *Mental health and social inclusion*: Ensuring the design of green spaces considers the needs of all users, enhancing security measures, and conducting outreach programs to encourage diverse community engagement. • *Zoonotic diseases*: Educating the public about potential risks, encouraging responsible pet ownership, and promoting safe interactions with wildlife. (2) By implementing appropriate mitigation measures, the Republic of Azerbaijan can ensure that improved water management practices **(Output 3.3)** positively contribute to public health, while safeguarding against any potential negative impacts. Public health considerations should remain integral to the planning, implementation, and monitoring of water management projects, including: • *Waterborne diseases*: Regular water quality monitoring, proper water treatment and disinfection, and ensuring safe storage and distribution of water.	Programme Management Unit (PMU)	*Republic of Azerbaijan:* • Ministry of Ecology and Natural Resources • State Committee for Urban Planning and Architecture • Ministry of Health	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

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			• *Infrastructure safety*: The construction and maintenance of water management infrastructure, such as dams and water reservoirs, may pose safety risks if not properly designed and maintained. • *Water contamination*: Improved water management can inadvertently introduce contaminants into water sources, impacting public health. • *Displacement of communities*: Large-scale water management projects may result in the displacement of communities, which can have adverse effects on their health and well-being. • *Climate-related health risks:* Changes in water management practices can influence local climate patterns, leading to potential health risks such as heat stress and water-related vector-borne diseases. • *Social equity*: Improved water management may not always benefit all segments of the population equally, leading to potential social disparities in access to water resources and services.	• *Water scarcity:* Promoting water conservation and efficiency measures, implementing rainwater harvesting systems, and exploring alternative water sources. • *Infrastructure safety*: Adhering to robust engineering standards, conducting regular inspections, and implementing necessary repairs and upgrades. • *Water contamination*: Implementing measures to prevent runoff and pollution from entering water bodies, as well as conducting regular water quality testing. • *Displacement of communities*: Conducting thorough social impact assessments, engaging affected communities in decision-making processes, and providing appropriate compensation and support for relocation, if necessary. • *Climate-related health risks*: Integrating climate change adaptation strategies into water management plans, implementing heat mitigation measures, and addressing vector control. • *Social equity*: Ensuring equitable distribution of water resources and considering the needs of vulnerable and marginalized communities in water management planning.				
14. Physical and Cultural Heritage	**NO** further assessment is required, considering that neither physical nor cultural heritage concerns are being touched during the programme development phase and beyond. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the programme and demand adjustments as required.	All outputs, particularly outputs 2.1 – 2.3	**LOW RISK** due to the absence of physical and cultural heritage sites in specific areas.	Although there are no physical or cultural heritage sites in the area, attention will be paid to intangible elements of a society, such as language, traditions, beliefs, and values that are passed down from one generation to the next. Community consultations will discuss these intangible elements and ensure no issues arise.	Project Management Unit (PMU)	Communities – direct and indirect beneficiaries – in all seven locations where climate adaptation initiatives are executed *Republic of Azerbaijan:* • State Committee on Urban Planning and Architecture • Ministry of Culture	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up
15. Lands and Soil Conservation	**YES partially,** further assessments might be required to ensure that lands and soil conservation are ensured throughout the implementation of the programme and beyond. Community engagement and consultation opportunities will be created, however, to assess compliance in the implementation of the programme and demand	All outputs, particularly outputs 2.1 – 2.3	**MEDIUM RISK** Outputs 3.1 will involve conversion of land. However, the current land would not be classified as productive and does not provide valuable ecosystem services. Output 3.3 will involve digging up soil to install drainage that will deposit into river sediment areas and will need to be executed in a way that promotes soil conservation. (1) While the implementation of green corridors and public spaces can have numerous benefits for lands and soil conservation, there are also potential risks that need to be considered in the Republic of Azerbaijan, including: • *Soil erosion*: Construction and improper maintenance of green spaces can lead to soil erosion, which may result in the loss of fertile topsoil and negatively impact agricultural productivity. • *Habitat destruction*: Green corridor projects may involve clearing natural habitats, which can disrupt local ecosystems and threaten biodiversity. • *Soil contamination*: Inappropriate waste disposal or the use of chemical fertilizers and pesticides in green spaces can lead to soil contamination, affecting soil health and potentially posing risks to public health. • *Land degradation*: Poor planning and management of green corridors and public spaces can contribute to land degradation, reducing the land's productivity and long-term sustainability.	The construction and tree planting process involved in 3.1, will employ techniques to minimize disruptions to soil and river sediment will be monitored in 3.2. (1) By implementing appropriate mitigation measures and conducting thorough risk assessments during the planning and design stages of green corridors and public spaces **(see Output 3.1),** the Republic of Azerbaijan can promote land and soil conservation while minimizing adverse environmental impacts and ensuring sustainable development for the benefit of present and future generations. These include: • *Soil erosion*: Using erosion-resistant vegetation, implementing proper drainage systems, and applying soil conservation practices. • *Habitat destruction*: Conducting environmental impact assessments, preserving existing habitats, and incorporating native plant species to support local wildlife. • *Soil contamination*: Adopting organic and sustainable gardening practices and proper waste management. • *Land degradation*: Adopting sustainable land-use practices, implementing soil restoration techniques, and ensuring proper land management. • *Deforestation*: Reforestation efforts, afforestation projects, and incorporating tree planting in green corridor planning. • *Invasive species*: Using native plant species and implementing invasive species monitoring and control programs. • *Water pollution*: Using environmentally friendly products and adopting sustainable agricultural practices. • *Land use conflicts*: Conducting comprehensive land-use planning, involving stakeholders in decision-making, and promoting integrated approaches to land management.	Programme Management Unit (PMU)	*Republic of Azerbaijan:* • Ministry of Ecology and Natural Resources • State Committee for Urban Planning and Architecture	*Republic of Azerbaijan:* • UN-Habitat • UNEP • IOM Azerbaijan	Baseline in Year 1; continuous follow up in preparation of the issuance of implementing agreements, contracts and follow up

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	adjustments as required.		• *Deforestation*: Clearing trees and vegetation to create green spaces can contribute to deforestation, which can have adverse impacts on climate regulation, air quality, and biodiversity. • *Invasive species*: Introducing non-native plant species in green spaces may lead to invasive species colonization, outcompeting native vegetation and disrupting local ecosystems. • *Water pollution*: Improper use of fertilizers and pesticides in green spaces can lead to water pollution through runoff, affecting nearby water bodies and aquatic life. • *Land use conflicts:* Conflicts may arise between different land uses, such as agriculture and urban development, in the implementation of green corridors and public spaces. (2) Potential risks related to land and soil conservation in the implementation of <u>improved water management</u> in the Republic of Azerbaijan may include: • *Land degradation*: Changes in water management practices, such as excessive groundwater extraction or improper irrigation, can lead to land degradation, soil salinization, and reduced land productivity. • *Waterlogging*: Inappropriate water management can result in waterlogging of agricultural lands, which can harm plant roots and lead to waterlogged and waterlogged soil conditions. • *Soil erosion*: Altered water flow and intensity due to changes in water management can contribute to soil erosion, causing the loss of fertile topsoil and impacting agricultural productivity. • Salinization: Poor water management practices, such as improper irrigation or drainage, can lead to the accumulation of salts in the soil, causing soil salinization and rendering land unsuitable for agriculture. • *Habitat loss*: Construction and modification of water management infrastructure may lead to the destruction or alteration of natural habitats, affecting local biodiversity and ecosystems. • *Groundwater depletion*: Excessive groundwater extraction for water management purposes can deplete aquifers and lead to a decline in groundwater levels, impacting local ecosystems and water availability. • *Soil contamination*: Inadequate water management practices, such as the discharge of untreated wastewater or agrochemical runoff, can contaminate soils with pollutants, negatively affecting soil health and agricultural produce. • *Land use conflicts*: Competing demands for water resources in different sectors, such as agriculture, industry, and urban development, can lead to conflicts over land and water use.	(1) By implementing appropriate mitigation measures and conducting thorough risk assessments during the planning and design stages of <u>improved water management</u> practices **(Output 3.3,),** the Republic of Azerbaijan can promote land and soil conservation while minimizing adverse environmental impacts and ensuring sustainable development for the benefit of present and future generations. These include: • *Land degradation*: Adopting sustainable irrigation techniques, promoting water-efficient farming practices, and implementing soil conservation measures. • *Waterlogging*: Implementing proper drainage systems and ensuring adequate water management to prevent waterlogging. • *Soil erosion*: Implementing erosion control measures, such as terracing and contour farming, to minimize soil erosion. • *Salinization*: Implementing measures to leach salts from the soil and using appropriate irrigation techniques. • *Habitat loss*: Conducting environmental impact assessments and adopting measures to protect and restore affected habitats. • *Groundwater depletion*: Promoting sustainable groundwater management practices and water conservation. • *Soil contamination*: Treating wastewater before discharge and adopting eco-friendly agricultural practices. • *Land use conflicts*: Promoting integrated water resources management and involving stakeholders in decision-making processes.				

ANNEX 7: Gender Baseline Assessment in Compliance with the Gender Policy of the Adaptation Fund

This annex summarizes the gender baseline assessment that was developed to a) ensure compliance with the Adaptation Fund's gender policy and b) to provide an analysis of the local context around gender issues and demonstrate what measures have been built into the programme to ensure that men and women have equal opportunities to build resilience and address their differentiated vulnerabilities.

During full proposal preparation the Gender Baseline Assessment' has been conducted to identify potential programme gender equality and women's and youth empowerment issues, but also opportunities. The outcomes are summarized below, as well as arrangements that will be taken during programme implementation to comply to the AF GP, including to show how the programme contributes to improving gender equality, the empowerment of women and the programme interventions' suitability to meet the adaptation needs of targeted populations.dd

Table 49: Determinants for Gender-responsive Stakeholder Consultations

Type of Stakeholder	Specific stakeholder
National government	Azerbaijan: Ministry of Ecology and Natural Resources (leading), State Committee on Urban Planning and Architecture (supporting).
UN agencies	UN-Habitat, UNEP, IOM Azerbaijan
Community level	Community consultations and focus group discussions with women, and girls where appropriate

Data baseline

For the present Baseline Assessment, the Global Gender Gap Index is used as a reference point. The GGI benchmarks progress towards gender parity and compares countries' gender gaps across four dimensions: economic opportunities, education, health, and political leadership. By providing country rankings, the report incentivizes comparisons across regions and countries and stimulates learning on the drivers of gender gaps and policies to close them.

According to the Statistics Committee of the Republic of Azerbaijan, as of 2023, the population is 10,135,373 people, the urban population is 54.6%, the rural population is 45.4%. Male population is 49.8%, and female is 50.2%. It is ranked globally 101st out of 146 countries, and 8th out of 10 in its region (Central Asia) with a Gender Gap score of 68,7%. In the area of Political Empowerment, in the Republic of Azerbaijan, there are no women in ministerial positions. Women candidates have been increasingly successful at the municipal level in recent years.

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For the Health and Survival subindex, 141 countries out of 146 across all regions have closed at least 95% of their Health gender gaps (which makes this subindex the most egalitarian overall). Nevertheless, Azerbaijan is among only five countries with gender gaps larger than 5%, along with Qatar, Pakistan, China and India (Azerbaijan is ranked 144th out of 146). Azerbaijan also has one of the lowest rankings for Central Asian countries for overall progress in closing the gender gap (8th out of 10 countries of the region). Gender parity for Political Empowerment raises a lot of concern (Azerbaijani rate is 6,9%, which is the lowest result in the region and the 135th position out of 146 countries).

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The Republic of Azerbaijan has passed national laws, policies, institutions, and international commitments on gender quality. The Constitution of the Republic of Azerbaijan (12 November 1995) prohibits discrimination based on sex and states that the rights of husband and wife are equal. The Republic of Azerbaijan has signed international conventions on gender equality and passed a Law on State Guarantees of Equal Rights for Women and Men in 2006 that set the legal foundation for gender equality.

Equality goals were articulated in recent national development policies, and in economic strategies. A national body for gender equality—the State Committee for Family, Women and Children Affairs—is active in mainstreaming gender into state policies, programs, and laws and in developing information systems for gender-related monitoring.

According to UN Women girls and women aged 15+ spend 25.4% of their time on unpaid care and domestic work, compared to 8.9% spent by men. There is no data available on the achievement rate of any legal frameworks that promote, enforce and monitor gender equality. There is not enough data for house ownership status by sex and for female employment in senior and middle management. Closing these gender data gaps is essential for achieving gender-related SDG commitments in Azerbaijan.

In 2017, 27.7% of women and 29.4% of men in Azerbaijan had a bank account. The female rate in Azerbaijan is lower than both Europe & Central Asia and the upper-middle income group. The same applies to using a mobile phone or the internet to pay bills. Selected Development Indicators for Men and Women below:

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Figure 52: Global Gender Gap Index – Overview

Figure 53: Global Gender Gap Index

According to UN Women, the Republic of Azerbaijan faces women political underrepresentation (only 18.2% of seats in parliament and 35% in local government), gender gap in time on unpaid care and domestic work (2.85 times more for women) and lack of comparable methodologies for regular monitoring in key areas, such as gender and poverty, physical and sexual harassment, women's access to assets (including land), and

gender and the environment. As of 2020, only 50,8 % of SDG monitoring indicators were available, in the absence of crucial once, such as the gender pay gap and other essential labour market indicators[24]. The following indicators also show slightly higher performance for women: unemployment rate (5,7% vs. 4% for men); prevalence of severe food insecurity in the adult population (8,8% vs. 8,7%) and rate of out of school children (2,5% vs. 2%). As for 2018, 5.2% of women aged 15-49 years reported that they had been subject to physical and/ or sexual violence by a current or former intimate partner in the previous 12 months.

World Bank data shows that since 1990, female labour force participation has decreased: for 2021 it amounted 60.4% for women against 67,3% for men. In particular, vulnerable employment for females has worsened in the Republic of Azerbaijan since 1991: vulnerable employment among women is 62.3% and among men is 46.6% in the Republic of Azerbaijan for 2019[25]. As for 2018, women constituted only 16% of business owners in the Republic of Azerbaijan. At the same time, more women than men are employed in agriculture (41,8% vs. 30,6%), which also makes them more vulnerable faced with climate change and natural hazards. Also, in 2022 Committee on the Elimination of Discrimination against Women (CEDAW) in its Concluding observations on the sixth periodic report of the Republic of Azerbaijan noted "the limited access of rural women and girls to basic services, land, education and employment opportunities and health care"[26]. It also expressed concerns regarding the lack of a gender perspective in agricultural policies and the underrepresentation of rural women in decision-making and in leadership positions. CEDAW also noted intersectional character of discrimination towards women and girls belonging to ethnic minority groups, internally displaced women and girls, and refugee, asylum-seeking and migrant women and girls.

Women and Climate Change

In the Republic of Azerbaijan, women play a crucial role in addressing the multifaceted challenges posed by climate change. As primary stewards of household and community well-being, women often find themselves at the forefront of climate impacts, especially in locations vulnerable to climate change. Rising temperatures, extreme weather events, and shifts in precipitation patterns can disproportionately affect women's livelihoods, particularly those engaged in agriculture and rural activities. Moreover, women are vital contributors to sustainable development and environmental conservation, possessing unique knowledge and skills that can be harnessed to build climate resilience. Recognizing the unique vulnerabilities and strengths of women in the context of climate change, initiatives in Azerbaijan should prioritize gender-responsive strategies. This includes empowering women with education and resources to actively participate in decision-making processes related to climate adaptation, fostering women's leadership in community-based initiatives, and ensuring equitable access to climate-related information and resources. By integrating a gender-sensitive approach into climate change policies and programmes, Azerbaijan can enhance the overall effectiveness of its response to climate challenges, promote social resilience, and contribute to the empowerment and well-being of women across diverse communities. There is an emerging body of evidence that women and children face greater vulnerability to climate change than men, because of greater sensitivity and lower adaptive capacity. In terms of sensitivity, women are less likely to work in the formal sector and more likely to work in or around the home (often doing unpaid or informal work related to agro-businesses). Low levels of women's labour force participation are an important driver of lack of economic participation. The difference between average participation rates in the labour market is notable and must be taken into consideration for the programme.

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Educational outcomes, which serve as one of the main proxies for adaptive capacities, remain lower for women than for men, so does income and earning potential, another important proxy for adaptive capacity. In Azerbaijan, according to the Swiss Cooperation Office and the United Nations Development Programme (2018), women spend a large share of their time and energy for household responsibilities and this is not altered if a woman engages in income-generating activities. At the same time, men are most often designated as household heads. On average, women allocate 6 hours per day for unpaid labour while men allocate only 2 hours, and differences in increased workload are greater for rural women. This difference in time allocation for paid work is economically disadvantageous for women. Meanwhile, women working in the private sector, which suggests better financial conditions, also enjoy lesser benefits, particularly working mothers who choose lower-paid public jobs to allow them to combine domestic tasks with their work duties. Based on the same report, when it comes to getting promotions, women are at a disadvantage compared to men colleagues, as their chances to enroll in after-work professional education and networking are also slim.

Another important adaptive capacity related issue is the representation of men and women in the government. In Azerbaijan, there is limited female representation at the ministerial level (only one female chairperson, appointed Chair of State Committee for Family, Women and Children Affairs). Women are present in the civil service but are under-represented at all levels, especially senior levels. Women are also under-represented in judicial positions. To increase women's participation in decision-making, key measures toward greater

[24] UN Women Data Portal: https://data.unwomen.org/country/azerbaijan
[25] World Bank Gender Data Portal: https://genderdata.worldbank.org/countries/azerbaijan
[26] CEDAW. Concluding observations on the sixth periodic report of Azerbaijan file:///C:/Users/Christina%20Russkikh/OneDrive%20-%20United%20Nations/UNEP/February/AF%20Caspian%20Sea/N2242045.pdf

decentralization at the municipal levels, more efforts to draw women into national politics, and a proactive approach to increase women's representation in senior civil service positions and the judiciary will be needed.

Influence of the Gender Assessment on the Programme Design

The summary of the programme's Gender Action Plan can be found below. Given the low levels of women's representation in senior positions in government, the target/indicators for government participation percentages are adjusted to reflect this gap. However, at the regional and local levels and in terms of consultations with beneficiaries, it is possible to attain gender parity.

Table 50: Gender Action Plan

Outcome	Outputs	Activities	Indicator/ Target	Responsible Party
OUTCOME 1: Strengthened technical and institutional capacity at national and local level for long-term planning, responding and financing climate action to address sea level fluctuation, droughts, floods, and heat waves taking into consideration sustainable urban development.	Output 1.1: Data and knowledge on climate change risks and vulnerability for the Caspian Sea coast of Azerbaijan collected	Discussions with the regional stakeholders from 5 Caspian Sea countries are gender equal and disaggregated.	At least 50% of the participants are women. Workshop complete with records documenting equal participation from men and women. This will promote the active participation of women, particularly women's leadership within government institutions, by ensuring that they will be given the space to share their ideas, deliver presentations and take decisions on behalf of their teams.	UNEP
		Workshops with the regional stakeholders from 5 Caspian Sea countries are gender equal and disaggregated, 5 female officials included in the trainings.	At least 50% of the participants are women. Workshop complete with records documenting equal participation from men and women. This will promote the active participation of women, including women's working within government institutions, local organizations/NGOs and volunteer groups.	UNEP
	Output 1.2: Strategies and recommendations developed for climate change adaptation coordination, planning and management	Training and workshops to enhance the capacity of the TCS Secretariat are gender equal and disaggregated.	At least 50% of the participants are women. Trainings and workshops complete with records documenting equal participation from men and women. Women's active participation will be encouraged, particularly from women who demonstrate leadership and organizational skills.	UNEP
	Output 1.3: National-and local level capacities in Azerbaijan strengthened to develop and finance plans and measures to address climate change and disaster related risks and impacts for greater local community resilience especially to sea-level fluctuation, droughts, heat waves, and floods.	Regional workshops with key regional, national and municipal stakeholders as well as decision makers are gender equal and disaggregated. 5 female officials included to the ICZM Working Groups.	At least 50% of the participants are women. Workshop complete with records documenting equal participation from men and women. This will promote the active participation of women, including encouraging women's leadership in coordination and presentation of ideas. Women will be consulted on whether they would prefer separate consultations workshops so as to be able to express themselves more freely.	UNEP
		Developed regional recommendations will fully consider the differentiated risks and vulnerabilities of women, their adaptation options and potential and outline proposed actions that specifically benefit women	Developed regional recommendations include comprehensive analysis of the differentiated risks and vulnerabilities of women, and adaptation options that benefit them.	UNEP
		Trainings and workshops to build national and local capacity on planning and financing adaptation measures are gender disaggregated and representative of the gender balance in the government	At least 30% of the participants are women. Training and workshops complete with records documenting gender disaggregated participation. This will promote the active participation of women, including encouraging women's leadership role in training and coordination. Women will be consulted on whether they would prefer separate consultations workshops so as to be able to express themselves more freely.	UN-Habitat

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OUTCOME 2: Increased adaptive capacity of the built environment and ecosystems resilience through the implementation of climate adaptation initiatives. Local government and communities have acquired the capacity to manage and maintain priority interventions for upscaling.	Output 2.1 Reduced heat risk through a demonstration greening corridor and development of investment planning for further projects in Greater Baku Region	Consultations are gender equal, and gender disaggregated to ensure that green space design benefits women and girls equally	45-55% of consultation participants are women. Trainings and workshops complete with records documenting gender disaggregated participation 45-55% of people who receive information on drought, salinization and flooding from the EWS are women.	UN-Habitat, IOM
	Output 2.2 Enhanced Early Warning System for sea level fluctuation, drought, flooding and salinization based on advanced hydro-meteorological data and urban development plans in Neftchala	Recipients of information are gender equal, and gender disaggregated		IOM
	Output 2.3 Improved water security and management to reduce drought risk through demonstrated rainwater harvesting technology and advancing costed integrated water management plans in Astara	The costed integrated water management plan will fully consider the differentiated risks and vulnerabilities of women and girls, their adaptation options and outline proposed actions that specifically benefit women and girls	Developed integrated water management plan includes comprehensive analysis of the differentiated risks and vulnerabilities of women, and adaptation options that benefit them	IOM
OUTCOME 3: Applied innovative climate change adaptation solutions upscaled to communities throughout Azerbaijan to reduce their vulnerability to climate change (capacity, partnerships, institutional, legal, research cooperation and knowledge exchange).	Output 3.1: Public Awareness and Engagement Campaigns; Launch of campaigns to raise public awareness about the impacts of climate change and the importance of adaptation measures	Developed communication products and studies will fully consider the differentiated risks and vulnerabilities of women and girls, their adaptation options and outline proposed actions that specifically benefit women and girls	Developed communication products and studies include comprehensive analysis of the differentiated risks and vulnerabilities of women, and adaptation options that benefit them. Quotes from women interviewed for this purpose will be included in the communication products. At least 3 of the knowledge products will have a focus on the adaptation priorities and actions of women. This will promote the active participation of women, including women's leadership in making sure that all campaigns and public awareness materials reflect the priorities of women and other vulnerable groups.	UN-Habitat, UNEP, IOM
	Output 3.2: Financial Strategy for Climate Adaptation: Creation of a comprehensive financial strategy to support climate change adaptation measures	3 capacity building workshops for the National Environmental Information Officers are gender equal and disaggregated. Involvement of women in capacity building events on trust fund development	At least 50% of the participants are women. Workshops complete with records documenting equal participation from men and women. This will promote the active participation of women, including women's leadership in how to disseminate information on critical environmental aspects that affect the health of people, their well-being and their livelihoods At least 50% of the participants are women. Trainings complete with records documenting equal participation from men and women. This will promote the active participation of women, including women's leadership in presenting lessons learned and success stories in public events.	UN-Habitat, UNEP, IOM

Table 51: Capacity of Executing Entities to carry-out Gender responsive Activities

International	
Executing Entities (UN-Habitat/UNEP/IOM)	Skills and expertise to provide gender mainstreaming inputs
UNDP Azerbaijan	Sustainable development, promotion of gender equality, preparedness against crisis

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UN Women Europe and Central Asia	Gender equality achievement, sustainable development, economic empowerment
FAO Azerbaijan	Poverty elimination, support of rural population
National and Local	
Executing entities (Ministry of Ecology and Natural Resources; State Committee on Urban Planning and Architecture)	Skills and expertise to provide gender mainstreaming inputs
Azerbaijan Rural Women Association	Creation of business opportunities for women
Women's Association for Rational Development	Women empowerment, promotion of gender equality
Women Resource Centres	Economic empowerment, strengthening of rural women entrepreneurial skills
State Committee for Family, Women and Children Affairs	Formation of the state policy and development in the field, implementation of women entrepreneurship

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Table 52: International and National Legal Frameworks, Policies, Plans and Programs on Gender Equality

International	
UN Declaration on Human Rights (1948)	Republic of Azerbaijan
UN International Covenant on Economic, Social and Cultural Rights (1966)	Republic of Azerbaijan
UN International Covenant on Civil and Political Rights (1966)	Republic of Azerbaijan
UN Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1979)	Republic of Azerbaijan
Convention on the Rights of the Child (1989)	Republic of Azerbaijan
Beijing Declaration and Platform for Action (1995)	Republic of Azerbaijan
Convention on the Rights of Persons with Disabilities (2006)	Republic of Azerbaijan
International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families (1990)	Republic of Azerbaijan
Azerbaijan	
Constitution of the Republic of Azerbaijan (1995)	
Law of the Republic of Azerbaijan on guarantees of gender equality (2006)	
The Law on the Prevention of Domestic Violence (2010)	
Presidential Decree on the implementation of women's policy (2000)	
Family Code of the Republic of Azerbaijan (1999)	

Programme Implementation

All contractual arrangements and project-specific guidelines will incorporate provisions mandating contractors to adhere to the Adaptation Fund Gender Policy. UN-Habitat endeavors to establish a management approach that is responsive to gender considerations and adaptable. This approach allows for adjustments based on insights from previous decisions, interventions, and feedback received. To achieve this, gender expertise and focal points are designated to identify challenges, barriers, or restrictions that may emerge during programme implementation, potentially impeding the equitable participation of both men and women in activities.

The executing entities will undergo capacity building to enable them to contribute to gender mainstreaming and identify challenges that may arise during programme implementation, potentially affecting the equal participation of men and women in activities. This involves designating a gender focal point and establishing quota targets for the participation of women and youth in project activities. Government-appointed gender focal points will be part of the steering committees. Additionally, gender monitoring has been integrated into the investment sheets and in studies to enhance gender mainstreaming and women's empowerment.

The programme incorporates grievance mechanisms designed to address criticisms and complaints, including those related to gender equality and women's empowerment. All programme components actively promote challenging gender-based discrimination in the target country. The actions associated with the programme are oriented towards climate change adaptation by strengthening social resilience. Consequently, the midterm and final programme outcomes explicitly or implicitly contribute to fostering equal opportunities for addressing women's needs, enhancing their capacity to adapt to the impacts of climate change, and increasing their access to resources.

- **Component 1** *(Technical and institutional capacity at national and local level for long-term planning, responding and financing climate action)* implies information collection and sharing as well as elaboration of guidelines and recommendations developed for climate change adaptation coordination, planning and management. Envisaged measures under this component will promote the increase of women's engagement in national level discussion on climate change and adaptation arrangements. Furthermore, equal gender participation in project activities will also be enabled through participatory processes. This component includes capacity building workshops and training on national and community level. A guaranteed quota fro women participation will enhance women empowerment and contribute to women representation and leadership.

- **Component 2** (Implementation and maintenance of climate adaptation initiatives) will support resilience and establish an Early Warning System and improve water security in vulnerable communities. Women and other vulnerable groups are more affected by climate change and natural hazards, and therefore will substantially benefit from programme implementation.
- **Component 3** (Climate change adaptation solutions upscaled to communities throughout Azerbaijan) includes the exchange of knowledge and collected data, scientific cooperation and dissemination of the results and successful measures of the programme at the regional level. Participation and guaranteed quotas for women in training and workshops will contribute to increasing the representation of women in knowledge management and scientific activities. Moreover, this component includes the mainstreaming of climate finance, taking into consideration the most vulnerable groups in society.

Performance Monitoring and Evaluation

The gender-responsive management approach encompasses participatory monitoring and evaluation with the collection and analysis of 'gender-disaggregated data.' Women and youth will be actively encouraged to participate in monitoring activities whenever feasible. Each programme report will feature a section detailing the implementation status of gender-related activities, with a specific focus on monitoring gender risks. The annual reports will also incorporate, if needed, a description of any corrective actions deemed necessary.

Knowledge Management, Information Sharing and Reporting

UN-Habitat strives to implement a gender-responsive knowledge management approach, emphasizing specific gender considerations by explicitly reporting on the programme's dedication to gender equality and women's empowerment in all outreach, communication, and information-sharing endeavours.

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