

## **ANNEX 1: Summary report on existing studies on climate change and adaptation in Azerbaijan**

### **“Strengthening Capacities to Assess Climate Change Vulnerability and Impacts to Shape Investments in Adaptation Technology for Azerbaijan’s Mountain Regions” in Azerbaijan**

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##### ***Policy, legal and institutional framework related to climate change***

Environmental protection problems, as well as climate change, are reflected in the main development priorities and strategies of the Republic of Azerbaijan. In fact, “Azerbaijan 2020: Outlook for the future. Development conception” includes one section which describes environmental problems. This conception determines a target to decrease the average energy consumed for the production of one unit GDP and the amount of carbon dioxide in Azerbaijan for the period covered by the convention up to the relevant indicators for Economic Cooperation and Development countries.

In addition, climate change mitigation and adaptation issues were considered under strategic road maps approved in 2016. In particular, issues related to climate change mitigation and adaptation are described in “Strategic Road Map for development of heavy industry and machinery in the Republic of Azerbaijan” and “Strategic Road map for the development of utilities (electric, heating energy, water and gas) in the Republic of Azerbaijan.” The “Strategic Road Map for manufacturing and processing agricultural products in the Republic of Azerbaijan” and specific measures were considered for the period up to 2025 and beyond.

The Republic of Azerbaijan has joined international efforts to mitigate the negative effects of global climate change after the ratification of the United Nations Framework Convention on Climate Change (UNFCCC) in 1995 and followed by the Kyoto Protocol in 2000. As a non-Annex I country to the Convention, Azerbaijan has undertaken commitments such as the preparation and regular update of the cadastre of greenhouse gas emissions, the preparation of national data, public awareness raising and the submission of the data to the Conference of the Parties of the Convention. The abovementioned commitments are being systematically implemented.

Some institutional measures to coordinate and carry out the activities in this sphere in a deliberate way have been undertaken. Thus, the State Commission on Climate Change was established by the Decree of the President of the Republic of Azerbaijan, dated April 30, 1997, to ensure the coordination of the implementation of the commitments of the UN Framework Convention on Climate Change. The Ministry of Ecology and Natural Resources, under the Decree of the President of the Azerbaijan Republic dated April 1, 2005, has established a National Competent Authority for the Clean Development Mechanism of the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

The Doha Amendment, adopted as the second commitment period of the Kyoto Protocol, was ratified by the National Assembly of the Republic of Azerbaijan on April 14, 2015 and signed by the President of the country.

Although as a non-Annex 1 country to the Convention, Azerbaijan has not undertaken the quantitative obligations on reduction of greenhouse gas emissions, the country has implemented a number of measures to mitigate the impact of climate change and continues its activity in this direction.

The Republic of Azerbaijan ratified the Paris Agreement in 2016. The country prepared its INDC in 2015 and submitted it to the UNFCCC Secretariat. According to this document, by 2030 Azerbaijan aims to reduce its level of greenhouse gas emissions by 35% compared to 1990 (base year) as its Contribution to the efforts to prevent global climate change.

### *Studies carried out on Climate Change in Azerbaijan*

Climate change research in Azerbaijan began almost after the ratification of the UN Framework Convention on Climate Change in 1995. Until the mid-90s, there had been only the studies of different scientists on how climate has changed in Azerbaijan and forecasts based on simple climate statistics. These studies can be characterized as unplanned, non-specific and unorganized voluntary attempts.

Major climate change studies in the country have been started to be implemented in 1997 under the implementation of the Initial National Communication of Azerbaijan to UNFCCC. Under the coordination of the former State Hydrometeorology Committee, working groups and subgroups being composed of representatives of relevant government authorities, academic institutions and NGOs on various components of Climate change (GHG inventory, mitigation, V@A and so on) have been established and the reports have been prepared and summarized based on preliminary research and studies carried out on different sectors. As a result, the First National Communication of Azerbaijan Republic to the UNFCCC has been elaborated and submitted to the Convention Secretariat. This report has been designed in accordance with the reporting guidelines recommended by the UNFCCC, combining a mix of existing statistics, data provided by government agencies including specifications, and expert assessments.

Under the coordination of the MENR, the reports on the Second (2010) and Third National Communications (2015) of Azerbaijan have been developed using the above-mentioned approach and submitted to the UNFCCC Secretariat. Currently MENR experts are working on the preparation of the Fourth National Communication Report, which is planned to be submitted to the UNFCCC Secretariat in 2020. Additionally, Azerbaijan has also submitted its First (2015) and Second (2018) Biennial Update Reports to the UNFCCC Secretariat.

Before proceeding with other projects that had been implemented and are being implemented in the country, in the current report we would like to focus primarily on methodologies and tools for the preparation of the V@A Component of National Communication in accordance with the goals and objectives of the CTCN project.

It should be noted that the studies conducted on V@A component of all three National Communications and the Fourth National Communication, which is being prepared, are based only on existing scientific literature and statistical data analysis and results of the provided long-term climate scenarios, without any practical measurement and field observation.

**First National Communication:** V@A assessments have been performed on 5 sectors: water, agriculture, forest and land resources and coastal zones. In the development of climate scenarios, the artificial prognosis method, which is based on GISS, GFDL-3 models and temperature statistics of the Institute of Geography of the Azerbaijan National Academy of Sciences, was used.

**Second National Communication:** V@A assessments have been conducted on 4 sectors: water resources, agriculture, coastal zones and human health. Climate scenarios were developed based on the "PRECIS 1.4" (Providing REgional Climates for Impact Studies) model developed by the Hadley Center for Climate Prediction and Research of UK Meteorological Office.

**Third National Communication:** V@A assessments have been conducted on 6 sectors: water resources, agriculture, forest resources, tourism, coastal zones and human health. Climate scenarios were computed based on MAGICC/SCENGEN 2.4 software.

**In addition to this, V@A assessments have been conducted within several national and regional projects listed below:**

1. *WWF 2008, Climate change in Southern Caucasus: Impacts on nature, people and society:* [http://awsassets.wwf.no/downloads/climate\\_changes\\_caucasus\\_wwf\\_2008\\_final\\_april\\_2009.pdf](http://awsassets.wwf.no/downloads/climate_changes_caucasus_wwf_2008_final_april_2009.pdf)
2. Within the framework of a project focusing on impact assessment and adaptation options implemented by the World Bank entitled "*Reducing the vulnerability of Azerbaijan's agricultural systems to climate change*", no practical fieldwork has been undertaken in the agricultural sector. Nevertheless, an important report has been drawn up focusing on the assessment of vulnerability of the agricultural sector. Adaptation options based on available scientific literature, the outcomes of interviews and surveys conducted in the regions in some cases and mainly the best international practices are presented. <http://documents.worldbank.org/curated/en/575751468014471558/Azerbaijan-Climate-change-and-agriculture-country-note>
3. A brief report on assessment of vulnerability of forests to climate change in Azerbaijan has been prepared within the framework of the project *FLEG II program report on vulnerability of forests to climate change*: [www.enpi-fleg-az](http://www.enpi-fleg-az), <https://www.slideshare.net/enpifleg/final-assessment-report-65433668>
4. The EU-supported project "*Identification and Implementation of Adaptation Responses to Climate Change Impacts for Conservation and Sustainable Use of Agro-Biodiversity in Arid and Semi-Arid Ecosystems of South Caucasus*" also worked on climate change adaptation in Azerbaijan's rural areas: <http://rec-caucasus.org/profile.php?id=1314693486&lang=en>
5. In 2015, UNEP within its "*Outlook on Adaptation Responses to Climate Change in South Caucasus*" regional project proposed an assessment of climate change impacts in the country and

adequate adaptation measures. The report has been prepared based on existing scientific literature, statistical data and advanced international experience.

6. **Technical Needs Assessment (TNA) Azerbaijan:** Within the framework of the GEF/UNEP TNA project and together with the Rizo Institute of UNEP, technological needs of adaptation of selected, more vulnerable sectors of Azerbaijan have been assessed and a Technological Action Plan (TAP) for Adaptation Technologies report has been prepared, in addition to the assessment of needs on Mitigation technologies. <http://unfccc.int/ttclear/tna/reports.html>

7. The work done under ClimaEast Pilot Project "*Ecosystem-based approaches to climate change*" by EU/UNDP focused more on practical field work compared with other projects, and a number of specific adaptation measures have been implemented: <http://www.climaeast.eu/clima-east-activities/pilot-projects/pilot-project-in-azerbaijan>

8. Several mitigation and adaptation measures on climate change have been implemented in the framework of the "*Sustainable land and forest management in Greater Caucasus landscape*" project:

[http://www.az.undp.org/content/azerbaijan/en/home/operations/projects/sustain\\_development/\\_sustainable-land-and-forest-management-in-the-greater-caucasus-.html](http://www.az.undp.org/content/azerbaijan/en/home/operations/projects/sustain_development/_sustainable-land-and-forest-management-in-the-greater-caucasus-.html)

9. "*Integrating climate change risk management by vulnerable communities in the Greater Caucasus region of Azerbaijan*" aims to reduce the vulnerability of the mountain communities of the Greater Caucasus region of Azerbaijan to climate change-induced water stress and flood hazards by improved water and flood management: <https://www.adaptation-undp.org/projects/sccf-integrating-climate-change-risk-management-azerbaijan>

10. The **EU4CLIMATE regional project** has already started and will end in 2020. In the project, support for the preparation of adaptation plans will be provided in addition to NDC implementation in the beneficiary countries, including development of national capacity, climate investments, etc.

11. **Adaptation planning:** The following activities on the adoption and, wherever necessary, development of adaptation plans are planned to be implemented:

- Support to the national adaptation planning (NAP)
- Follow up and facilitation of adoption of national and sectorial adaptation plans
- Cross country knowledge exchange on NAP development, implementation and reporting to UNFCCC

#### **Ongoing and planned projects for submission to the Green Climate Fund (GCF):**

1. The proposal of a project called "*Green Climate Fund Readiness and Preparatory Support Project for Azerbaijan*" has been started in the beginning of 2018 and is being implemented by UNDP's Country Office. The project focuses on the implementation of the country's NDC and, in particular, the preparation of the country's program for the Mitigation Projects (project portfolio).

2. The proposal of the project named "*Strengthening country capacities for NDC implementation in the Agriculture and LULUCF Sectors in Azerbaijan*" has been prepared by FAO's Office in Azerbaijan and it has already been approved by GCF. It will be launched in the coming months.

3. The proposal of the project named ***"National Adaptation Plan (NAP) Support Programme for adaptation planning and implementation in Azerbaijan"*** has been prepared and submitted to GCF through UNDP. Currently, the final preparatory work is underway and the project is expected to commence from 2020. The focus in the project will be mainly on the agriculture and water resources sectors as well as on coastal areas.

4. The proposal of the project ***"Scaling-up Multi-Hazard Early Warning System and the Use of Climate Information in Azerbaijan"*** has been submitted to GCF and the work on this large-scale proposal is about to be completed. This project, which will play an important role in ensuring the country's resilience to climate change, is expected to start next year as well.

**In addition, a number of projects on climate change mitigation have been implemented in the country:**

1. Measures to build capacity in climate change-related issues, such as the preparation of project proposals to the CDM mechanism (one of the flexibility mechanisms of Kyoto protocol), including verification and the strengthening inter-sectorial relations, have been accomplished within the framework of a project on ***"Technical Support for Implementation of Obligations on Global Climate Change in South Caucasus and Moldova"***.

2. The project ***"Building capacity of CDM in Azerbaijan"*** has been implemented through a cooperation of MENR and the Azerbaijan Office of UNDP with the support of the government of Norway. The project is dedicated to the preparation of guidelines on the establishment of national capacity for the CDM mechanism of the Kyoto Protocol and relevant procedures for the registration of projects.

3. The ***"Caspian Basin Greenhouse Gas Emissions Reduction Training Project"***, supported by a Canadian organization (CIDA), is a regional project implemented in Uzbekistan and Kazakhstan, along with Azerbaijan. It includes a series of training programs on all three mechanisms of the Kyoto Protocol which have been developed and implemented in the countries of the region.

4. Within the framework of the regional project ***"Economics of Climate Change in Central and West Asia"***, the reduction of waste from energy and transport sectors and sectorial long-term prognosis have been prepared in Azerbaijan and Central Asia countries.

5. A UNDP / GEF Project on the implementation of Nationally Appropriate Mitigation Actions (NAMA) on Climate Change Mitigation is currently underway (2016-2020). The main goal of the project ***"Reducing carbon emissions in the fuel consumption sector of Azerbaijan"*** implemented by UN's Development Programme and SOCAR is to support the development of national actions to mitigate climate change in the sector of low carbon fuel consumption.

**Collaboration with the Adaptation Fund (in the pipeline):**

The proposal of the project “*Enhancing agroforestry systems to increase adaptation potential and capacity in arid semi-arid regions of Azerbaijan*”, prepared by the Ministry of Ecology and Natural Resources, has been submitted to the Adaptation Fund via UNEP, but no concrete results have been achieved so far.

**Project objective:** Build both capacity and practice on agroforestry systems as a key adaptation strategy to reduce the negative impacts of climate change in arid and semi-arid regions of Azerbaijan.

**Expected project outputs:**

- Strengthened resilience of local ecosystems and rural communities towards climate change impacts;
- Well-directed and locally adapted site-specific concepts and approaches on agroforestry are developed as a key adaptation strategy in arid and semi-arid regions of Azerbaijan;
- Local stakeholders have increased their technical and management capacities to formulate and implement agroforestry systems to respond to climate change impacts;
- Increased practical knowledge on agroforestry systems thanks to the implementation of pilot agroforestry actions in project pilot regions;
- The carbon removal potential from the AFOLU-sector is increased thanks to the increased application of agroforestry.